

CQG Integrated Client Basics

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CQG IC Basics

CQG Integrated Client (CQG IC) has earned a solid reputation through decades of reliable performance, providing traders with an innovative trading interface complete with accurate global market data, professional analytical tools, and advanced order routing.

CQG IC provides the ideal solution for all professional trader needs. Since 1980, CQG has provided worldwide market coverage for futures, options, fixed income, foreign exchange, equities, news, OTC, proprietary data, indices, and reports.

Traders can take advantage of CQG's high-speed network of distributed exchange gateways and partnerships with over fifty FCMs. Electronic trading connectivity is available to more than forty exchanges.

CQG IC combines the power of CQG's analytical charts and tools with fast, reliable order execution.

About this Document

This document is one of several user guides for CQG IC.

To ensure that you have the most recent copy of this guide, please [go to the user guide page on CQG's website](#).

You can navigate the document in several ways:

- Click a bookmark listed on the left of the page.
- Click an item in the Table of Contents.
- Click a blue, underlined link that takes you to another section of the document. To go back, use Adobe Reader Page Navigation items (**View** menu).

If you are looking for a particular term, it may be easier for you to search the document for it. There are two ways to do that:

- Right-click the page, and then click **Find**.
- Press Ctrl+F on your keyboard.

Please note that images are examples only and are meant to demonstrate and expose system behavior. They do not represent actual trading situations.

This document is intended to be printed double-sided, so it includes blank pages before new chapters.

If you have questions about CQG documentation, please [contact the help author](#). For assistance with CQG IC, please [contact customer support](#).

This document is intended to be printed double-sided, so it includes blank pages before new chapters.

Related Documents

COG IC user guides:

- [Charting and Studies](#)
- [Advanced Analytics](#)
- [Trading](#) and [COG Spreader](#)
- [Options](#)

Getting Started

CQG Integrated Client has earned a solid reputation through decades of reliable performance, providing traders with an innovative trading interface complete with accurate global market data, professional analytical tools, and advanced order routing.

Traders can take advantage of CQG's high-speed network of distributed exchange gateways and partnerships with over fifty FCMs. Electronic trading connectivity is available to more than forty exchanges.

System Requirements

[CQG System Specifications](#)

[Optimize Your CQG Experience](#)

See Also:

[CQG/LAN Technical Specifications](#)

[CQG/NET Technical Specifications](#)

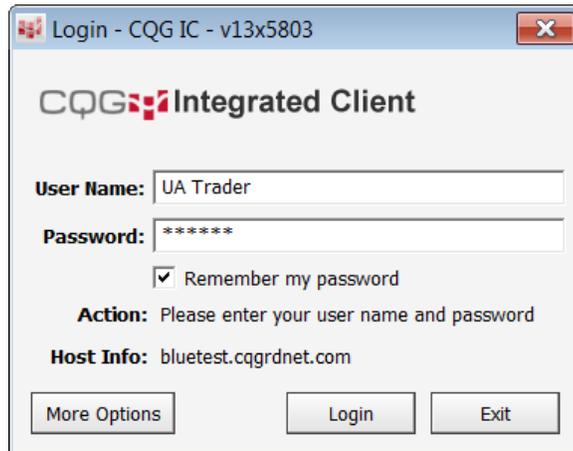
Logging On to CQG IC

1. Double-click the CQNet icon on your desktop:



If you do not have an icon on your desktop, go to **Start > All Programs > CQG > CQNet > CQG Client**.

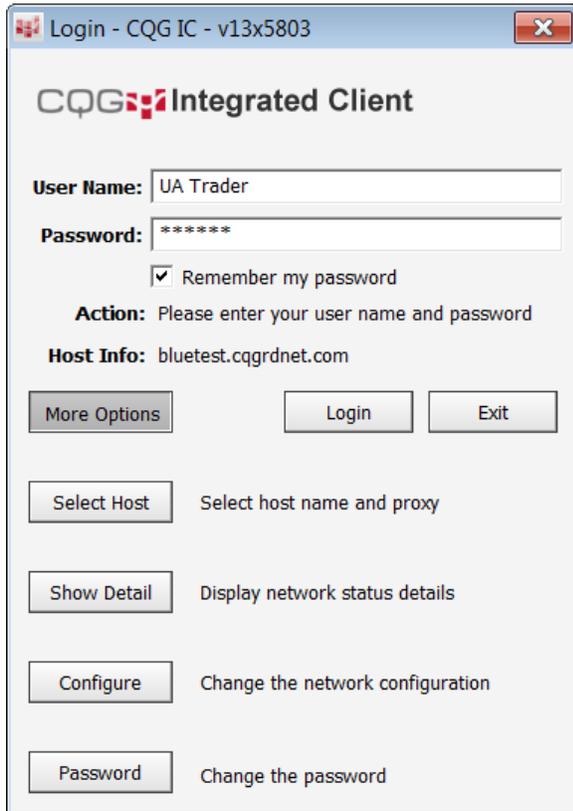
2. On the **Login** window, enter your user name and password.



3. Click the **Login** button. [If you are asked to upgrade.](#)

i The NETS Core and Supervisor auxiliary programs run while CQG IC is running. These programs start automatically when CQG begins and are hidden by default. Do not close these programs while CQG IC is running.

If you would like to [select your host name and proxy](#), [display network status information](#), [change your network configuration](#), or [change your password](#), click the **More Options** button.



Login - CQG IC - v13x5803

CQG Integrated Client

User Name: UA Trader

Password: *****

Remember my password

Action: Please enter your user name and password

Host Info: bluetest.cqgrdnet.com

More Options Login Exit

Select Host Select host name and proxy

Show Detail Display network status details

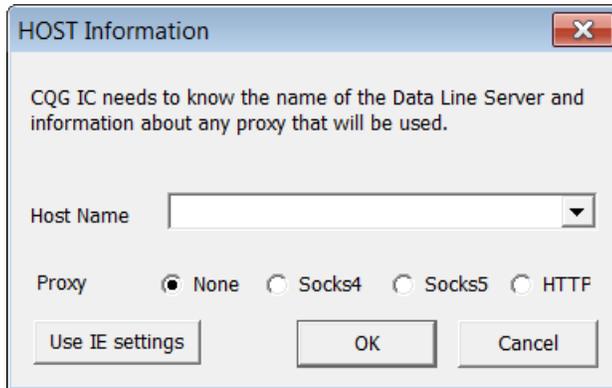
Configure Change the network configuration

Password Change the password

To select the host name and proxy

The host name is changed when you are having problems logging on to COG. Problems may include DNS resolution problems, routing issues, and corporate firewall issues. The proxy setting is applicable if you are connecting to the internet through a proxy.

1. On the **Login** window, click the **More Options** button.
2. Click the **Select Host** button.



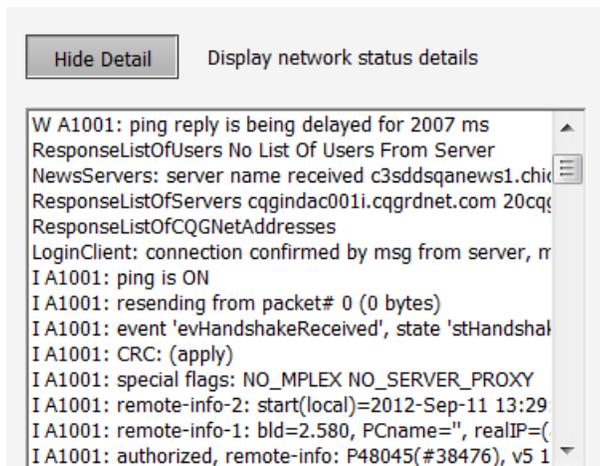
3. Type the new host name.
4. Click **OK**.

To change the proxy, select **Socks4**, **Socks5**, or **HTTP**. For more information about proxy settings, please see the [COG/NET Technical Specifications](#).

To display network status details

Network status details are used to help troubleshoot problems logging on to COG.

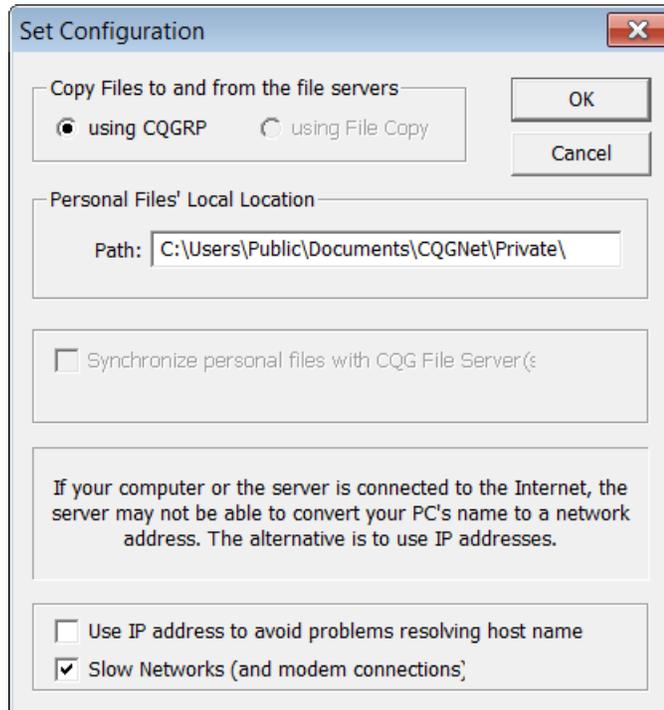
1. On the **Login** window, click the **More Options** button.
2. Click the **Show Detail** button.



To change your network configuration

Only CQG LAN users use this option in order to turn the synchronization of personal files to the CQG servers on and off.

1. On the **Login** window, click the **More Options** button.
2. Click the **Configure** button.



3. Select the **Synchronize** check box.
4. Click **OK**.

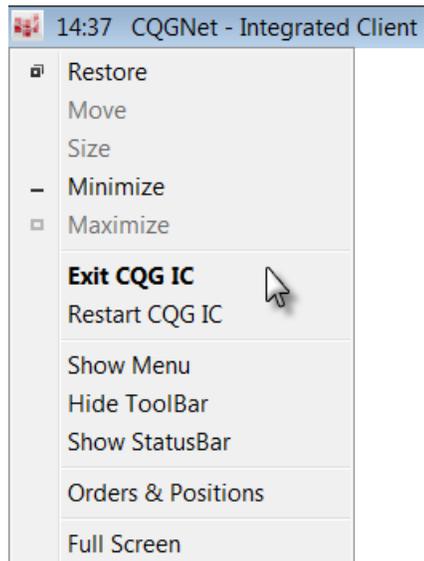
To change your password

1. On the **Login** window, click the **More Options** button.
2. Click the **Password** button. This displays the **Set New Password** window.
3. Enter your old password.
4. Enter your new password.
5. Enter your new password again in the **Verify** field.
6. Click on the **Change** button to change your password and close the **Set New Password** window.

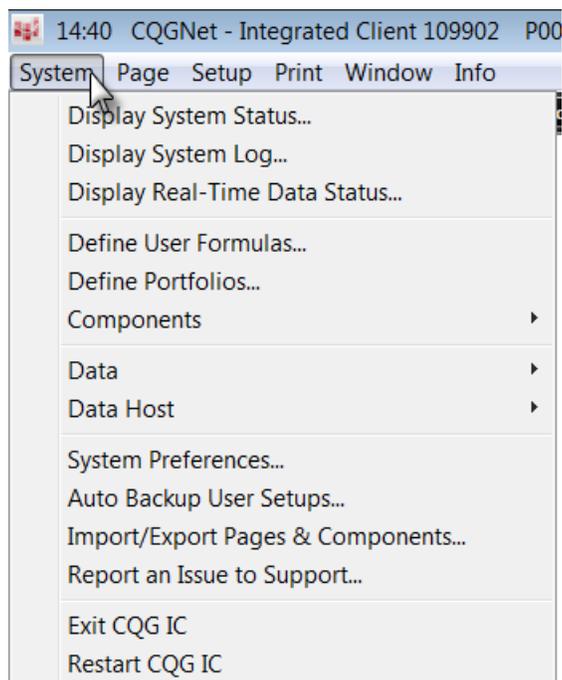
Logging Off CQG IC

There are several ways to log off of CQG IC.

- Click the **Exit** button, which is on the **System** toolbar.
- Click the **CQG** program icon on the title bar then click **Exit CQG**.



- Click the **System** button, then click **Exit CQG**.
- Click **System** on the menu, then click **Exit CQG**.



Upgrading Your CQG IC Software

Upgrading your CQG IC software is easy whether you're a CQG/NET or CQG/LAN customer.

CQG/NET

If a new version of software is available, you are asked to upgrade to that version when you log on.

- Click **Upgrade Now** to upgrade immediately.
- Click **Upgrade Later** to postpone the upgrade.
- Click **Exit** to close the software.

You can also access the download for the latest version on our ftp site: <ftp.cqg.com>.

CQG/LAN

Generally, these upgrades are handled by our LAN Technicians who work with LAN sites directly either on-site or remotely. First, the LAN Tech will assist you with updating your server version.

Once the server software is updated, the CQG IC software can be updated. Typically, IT staff at the customer site handles each CQG IC upgrade.

The software may be sent to your site by CQG or it may be downloaded from our ftp site. The installation may be scripted.

Getting Help

COG provides several ways for you to get help using COG IC:

- Go to www.cqg.com.
- Use COG IC's [Help system](#) or [user guides](#).
- Call our award-winning [customer support](#) team.
- [Live Chat](#) with customer support.

COG Customer and Sales Support

Our award-winning COG Customer Support operates from ten locations across the globe and is available twenty-four hours a day. For questions about using COG IC, call COG Customer Support.

Our sales team is happy to help you with questions about products, services, and prices. They can also assist you when your service has been suspended.

Country	Support	Sales
United States	1-800-525-1085	1-800-525-7082
United Kingdom	+44 (0) 20-7827-8270	+44 (0) 20-7827-9500
France	+33 (0) 1-74-18-07-81	+33 (0) 1-74-18-07-81
Germany	+49 (0) 69-6677-7558-0	+49 (0) 69-6677-7558-0
Russia	+7 495-795-2409	+7 495-795-2410
Japan	+81 (0) 3-3286-6877	+81 (0) 3-3286-6633
Australia	+61 (2) 9235-2009	+61 (2) 9235-2009
Singapore	+65 6494-4911	+65 6494-4911

COG Web Site

The [COG Web site \(www.cqg.com\)](http://www.cqg.com) is a comprehensive resource for COG IC.

Details particular to each release can be found on the [Downloads](#) page, <http://www.cqg.com/Support/Downloads.aspx>.

COG's [Customer Education Web Page](#) provides several resources to assist you as you use COG IC, including quick reference guides, explanations of symbology, and user guides for new features. That page is here: <http://www.cqg.com/Support/Customer-Education.aspx>.

CQG IC Help

CQG includes Help files with our software to assist you as you work. CQG's Help files are context-sensitive, which means that opening Help from a particular application immediately takes you to the Help for that application.

There are two ways to open Help:

- Press F1.
- Click the Advisor button  on the **System** toolbar, and then click the window or button you want help with.

If you have a question or suggestion about the online help provided with CQG, please [send us an e-mail](#).

As always, our award-winning customer support team is also ready to assist you with questions about using CQG IC. You can [call](#) or [e-mail](#) them at websupt@cqg.com.

The Main Window

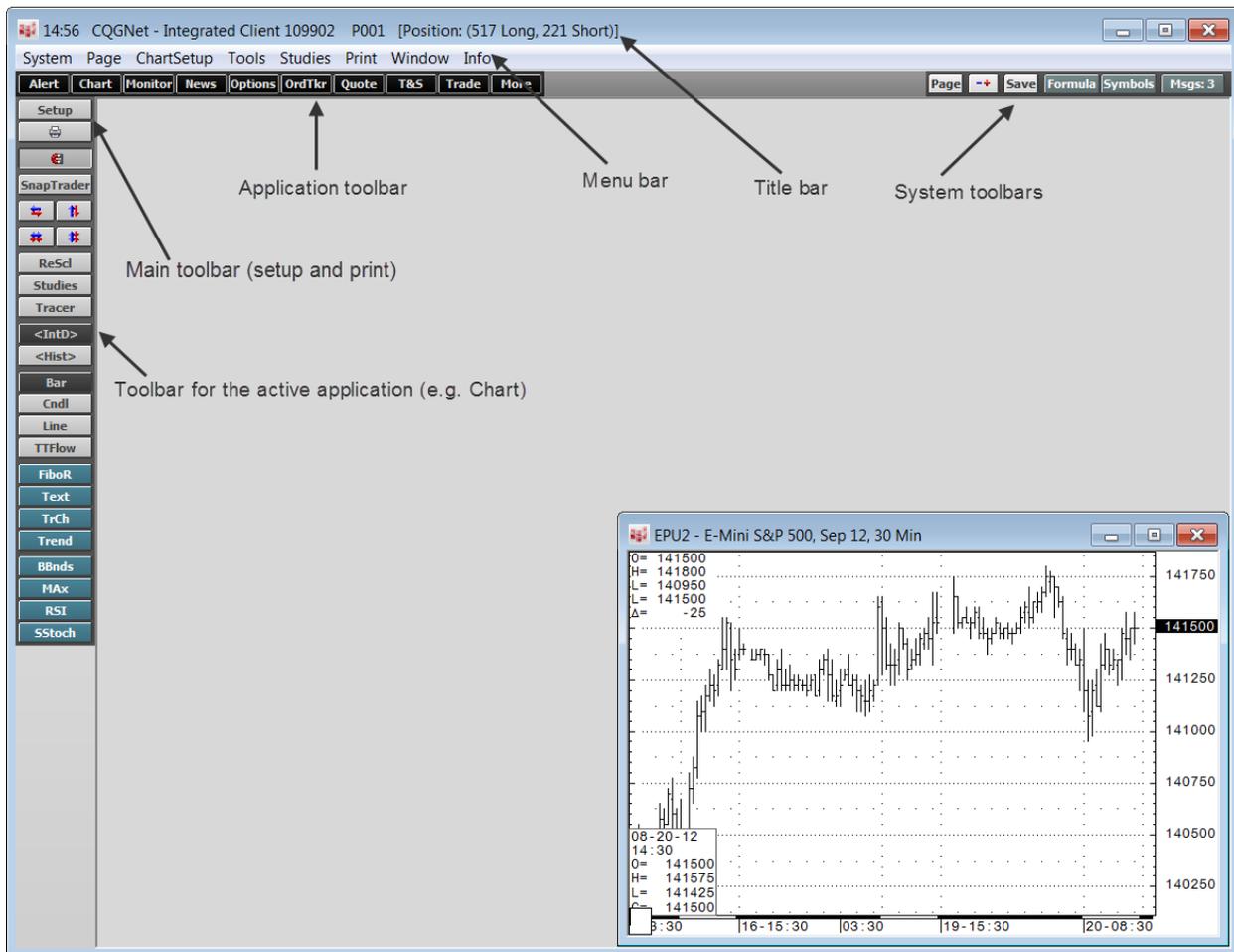
After you have successfully logged on, the Main window opens. Think of the Main window as your workspace, a place to arrange various windows, such as charts, quote boards, and trading applications.

If you are a new user, the Main window has a gray background and a white grid, as seen here:

If you have pages saved, your Main window likely includes application windows, such as DOMTrader, News, Quote SpreadSheet, Time & Sales, and charts.

Main Window Components

Application toolbar buttons are located at the top-left of the window. System toolbar buttons are on the top-right of the window. You [decide which toolbars and buttons you want displayed](#).



Title bar

The title bar includes the CQG IC program icon; the time of day; the system number; the current page number; position, if applicable; and minimize, maximize, and close buttons.

Menu bar

If the **System** toolbar is hidden, then this menu will be displayed under the title bar.

Toolbars

The application toolbar at the top of the **Main** window is displayed no matter what application windows are open and is static as you move from application to application. You can, however, customize it using the **Toolbar Manager**.

The toolbar on the left of the **Main** window is related to the application window that is in use and changes based on each application.

For the **Main** window, the application toolbar includes a **Setup** button and a **Print** button.

Working with Toolbars

There are several types of toolbars in CQG IC:

- **Main window toolbar:** includes Setup and print
- **System toolbars:** includes Utility, Communications, System, System Monitor, Pages, and Macros. These toolbars are non-application specific and are displayed no matter what applications (windows) are open or active.
- **Application toolbar:** includes buttons for CQG IC applications, such as Chart, News, and Trade.
- **Active window toolbar:** includes buttons specific to the active window.

This topic begins with a comprehensive list of system toolbars followed by procedures for how to manage toolbars. Application toolbars are discussed in topics related to those applications. For example, for details about the chart toolbar, please go to the Chart help topic.

Main Window Toolbar

The Main window toolbar includes the **Setup** and **Print** buttons. These buttons are always displayed.

Setup button

The **Setup** button is included on the Main window toolbar and all application toolbars. The Setup menu differs for each application.

In the **Main** window, click this button to access **System Preferences**, **Customize Toolbar**, and **System Status** windows.

If this button is part of an application toolbar, then other options will be included, such as Trading Preferences for DOMTrader.

Print button

Click the **Print** button  to print the selected window, for example, a chart.

Right-click this button to access [other print options](#).

Chart, Quote, News Toolbar (Application Toolbar)

Not to be confused with application-specific toolbars, such as the chart toolbar, this toolbar lists the applications and windows that you can open, such as a chart, News, or Order Ticket.



This is the application toolbar that displays buttons that open CQG features, such as a Time & Sales window, a DOMTrader, and a Quote SpreadSheet.

Click a button to open that window. To open another window of the same type, right-click the button and click **Add [window]**.

Some of the buttons display a menu of options instead of a window, such as the Quote button that displays a list of the quote windows that you can choose from.

[Managing Toolbars](#)

More button

Buttons that you have not included in the display are listed when you click the **More** button.

Welcome button

This button opens the CQG welcome page.

Function keys

Function keys can also be used to access application toolbar buttons.

The F5, F6, F7, and F8 keys activate the first through fourth buttons (from left to right), respectively, on the application toolbar.

SHIFT + F5, SHIFT + F6, SHIFT + F7, and SHIFT + F8 activate the fifth through eighth application toolbar buttons.

CTRL + F5, CTRL + F6, CTRL + F7, and CTRL + F8 activate the next four application toolbar buttons.

Utility Toolbar

The Utility toolbar is available from all applications and includes these buttons:



Formula button

Opens the Define User Formulas window.

Symbols button

Opens the Symbol Search window.

Refresh button

Clears the data cached in memory and re-retrieves it. Re-establishes your connection to the server.

RefrWnd button

Clears the bar data saved in memory. It does not clear the bar data saved locally.

Export Pac button

This button opens the Export Pages & Components window, so that you can export your system pages and components.

WndRpl button

This replicate button is used to create another instance of the window.

WndOut button

The place in page button is used to move a window either into or out of a page. By moving the window out of the page, you can minimize CQG IC without minimizing that window.

Communications Toolbar



The Communications Toolbar includes these buttons:

IM button

Opens an IM window.

LiveChat button

Initiates a Live Chat conversation with CQG Customer Support.

Save Image button

Saves an image to your PC. Right-click the button to use Save As to choose the file name.

Send Image button

Sends an image using IM (click button) or e-mail (right-click button).

MSG Cntr button

Opens the [Message Center](#).

System Toolbar

The System Toolbar is visible only when the menu bar is turned off. It includes these buttons:

System button

Displays a menu of options:

- **Display System Status:** Opens the [System Status window](#), which shows information regarding the software version, installation date, and data collection.
- **Display System Log:** Opens the [Message Center](#).
- **Display Real-Time Data Status:** Opens the [Real-Time Data Status](#) window.
- **Define User Formulas:** Opens the Define User Formulas window to create individual formulas, studies, and conditions.
- **Define Portfolios:** Opens the Define Portfolios window to create individual portfolios of stocks, bonds, futures, or options.
- **Components:** Lists a sub-menu with tasks that allow you to view or change component information: Component Pac Management, View/Change Component Information, Add Component Passwords, and Remove Component Passwords. See [Managing Pacs](#) for more information.
- **Data:** Clear data from the cache and master table. See [Clearing Data](#) for more information.
- **Data Host:** Lists the servers that you can receive data from and allows you to change servers. You must have an enablement to see this menu.
- **System Preferences:** Opens [System Preferences](#).
- **Auto Backup User Setups:** Opens the [Auto Backup window](#) that displays the backup schedule and location to automatically backup CQG data. You can also restore using this window.
- **Import/Export Pages and Components:** Opens the [Import/Export Pages & Components window](#).
- **Live Chat with CSP representative:** Opens [Live Chat](#).
- **Exit CQG**
- **Restart CQG**

Right-click this button to open a menu of status windows. For descriptions of these windows, see "[The Status Windows](#)" on page 93.

Window button

Displays menu with options to maximize, snap to grid, and change display preferences. Also lists active windows. Select a window to go to it.

Right-click this button to open an extensive menu of window options, including arranging windows.

Exit button

Closes CQG.

Maximize/Minimize button

Toggles the application window between a minimized size and a maximized size that fills the whole CQG Main window.

Advisor button

Changes the cursor to access [online Help](#).

System Monitor Toolbar

The System Monitor Toolbar includes these buttons:

CPU button

Displays the Windows Task Manager window to help diagnose system problems.

Data button

Displays information about the CQG dataline.

Pages Toolbar

Based on your settings, the Page Toolbar includes number buttons for pages.

At the bottom of the Customize Page Toolbar window, you can also select check boxes to display a page number box, a save page button, a previous page button and a next page button, and a combined previous and next button.

Page button

Lists the pages that you have created and that CQG has provided to you.

Page number box

Type a page number in this box to go to that page.

Increment button

Click to move behind one page.

Right-click to move forward one page.

Save button

Saves the page.

Page number buttons

Opens the page associated with the number you click.

Previous button

Moves back one page.

Next button

Moves ahead one page.

Macros Toolbar

This toolbar includes buttons for any macros you have created.

For the Active Window Toolbars

The toolbars in this area of the Toolbar Manager apply to the chart and options windows.

Chart Control: Seven buttons used to adjust charts and add features. Those buttons are described in the Charting and Studies help and user guide.

Chart Type: Displays buttons for chart types. Those buttons are described in the Charting and Studies help and user guide.

Pointer Tools: Displays buttons for all CQG pointer tools. Those buttons are described in the Charting and Studies help and user guide.

Studies: Displays buttons for all CQG studies. Those buttons are described in the Charting and Studies help and user guide.

Zoom: Adds Zoom, UnZoom, and ReZoom for chart data. Those buttons are described in the Charting and Studies help and user guide.

Options: Provides one-click access to the CQG options displays. Those buttons are described in the Options help and user guide.

Options Graph: Provides one-click access to the CQG Options Graph windows. Those buttons are described in the Options help and user guide.

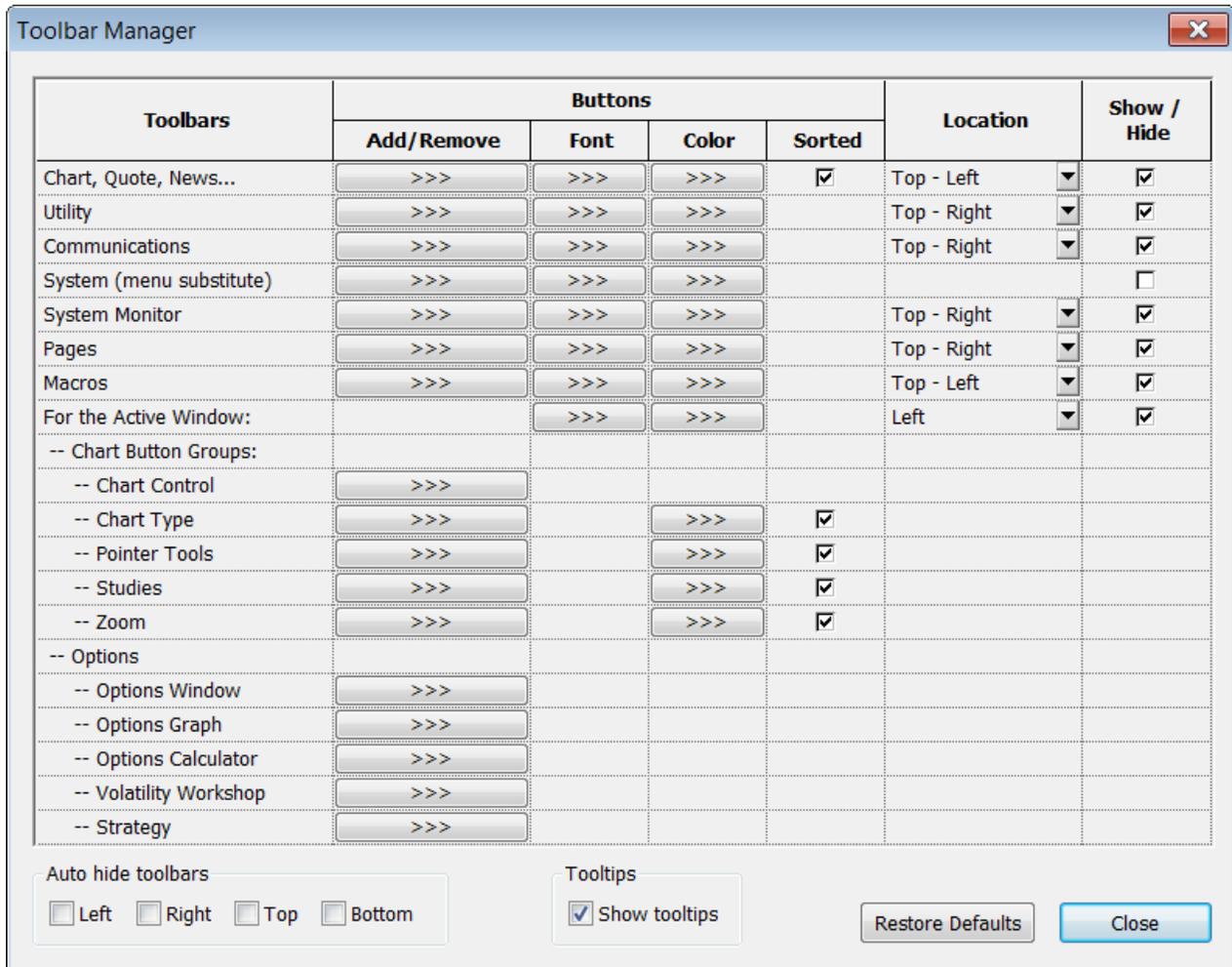
Options Calculator: Provides one-click access to the CQG Options Calculator windows. Those buttons are described in the Options help and user guide.

Volatility Workshop: Provides one-click access to the CQG Volatility Workshop Graph windows. Those buttons are described in the Options help and user guide.

Options Strategy: Provides one-click access to the CQG Options Strategy windows. Those buttons are described in the Options help and user guide.

Managing Toolbars

You can choose which toolbars are displayed on the Main window and which buttons to include on each toolbar using the **Toolbar Manager**.



To add and remove toolbars

1. Click **Setup** and then click **Customize Toolbar**. You can also right-click an empty area on the toolbar.
2. On the Toolbar Manager window, select the **Show/Hide** check box to include the toolbar on the Main window. Clear it to hide the toolbar.

Toolbars	Buttons				Location	Show / Hide
	Add/Remove	Font	Color	Sorted		
Chart, Quote, News...	>>>	>>>	>>>	<input checked="" type="checkbox"/>	Top - Left	<input checked="" type="checkbox"/>
Utility	>>>	>>>	>>>		Top - Right	<input checked="" type="checkbox"/>
Communications	>>>	>>>	>>>		Top - Right	<input checked="" type="checkbox"/>

To move toolbars

Toolbars can be moved to the top-left, top-right, bottom-left, and bottom-right. You can also change the horizontal toolbar to a vertical toolbar that is located either on the left or right of the **Main** window.

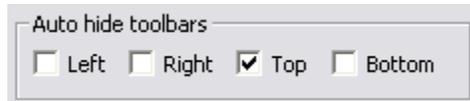
1. Click **Setup** and then click **Customize Toolbar**. You can also right-click an empty area on the toolbar.
2. On the Toolbar Manager window, click the **Location** arrow.
3. Select the location for the toolbar from the menu.

Toolbars	Buttons				Location	Show / Hide
	Add/Remove	Font	Color	Sorted		
Chart, Quote, News...	>>>	>>>	>>>	<input checked="" type="checkbox"/>	Top - Left	<input checked="" type="checkbox"/>
Utility	>>>	>>>	>>>		Top - Left	<input checked="" type="checkbox"/>
Communications	>>>	>>>	>>>		Top - Right	<input checked="" type="checkbox"/>
System (menu substitute)	>>>	>>>	>>>		Bottom - Left	<input type="checkbox"/>
System Monitor	>>>	>>>	>>>		Bottom - Right	<input type="checkbox"/>
Pages	>>>	>>>	>>>		Left	<input checked="" type="checkbox"/>
					Right	<input type="checkbox"/>
					Top - Right	<input checked="" type="checkbox"/>

To turn on auto-hide toolbars

The COG IC toolbars can be configured to hide when you're not using them and to reappear when you place the mouse cursor in the toolbar area. This configuration is set individually for each page.

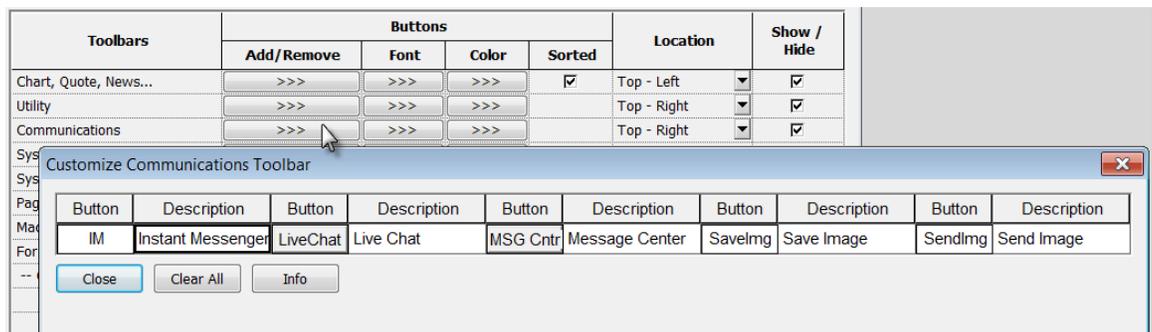
1. Right-click a toolbar. The **Toolbar Manager** window opens.
2. In the **Auto hide toolbars** area, select the location of the toolbars you wish to hide. For example, if you select **Top**, then the system toolbars are hidden.



3. Click **Close**. Notice that the toolbars appear when you place the mouse cursor in their location.

To add and remove toolbar buttons

1. Right-click a toolbar. The **Toolbar Manager** window opens.
2. Click the >>> button in the **Add/Remove** column for the toolbar you want to change.
3. Click each button you want to add to that toolbar.



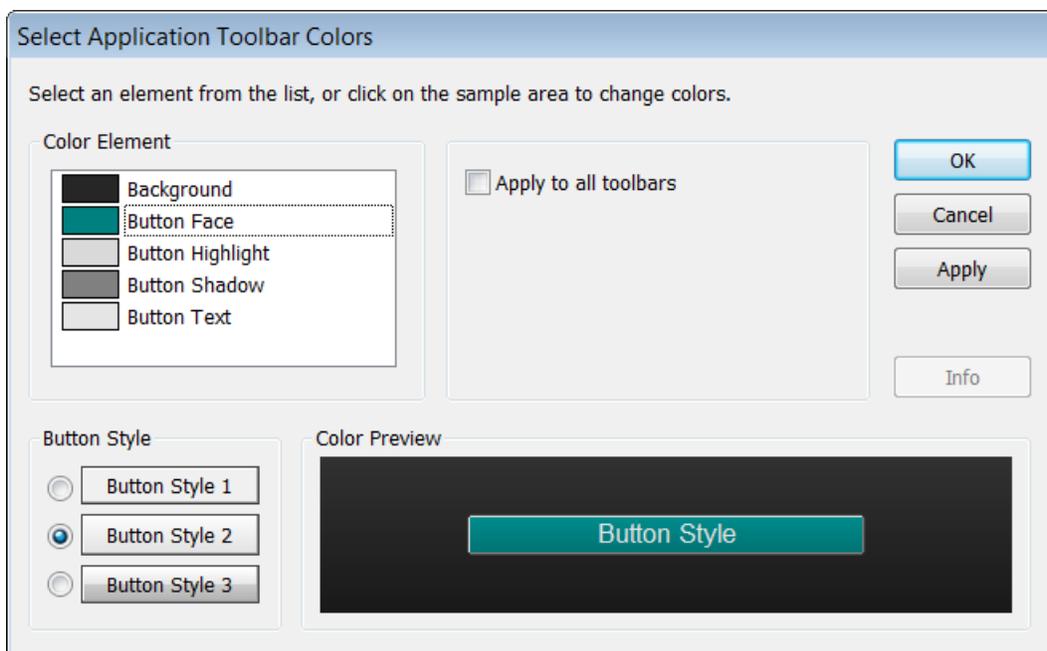
Notice that buttons that are selected are gray.

4. Click **Close**.

To change the font of toolbar buttons

1. Right-click a toolbar. The **Toolbar Manager** window opens.
2. Click the >>> button in the **Font** column for the toolbar you want to change. The Font window opens.
3. If you want your changes to apply to all toolbars, then select the check box.
4. Select the font, style, and size or click the **Restore Default** button to clear custom settings and return to the system default.
5. Click **Close**.

To change the color and style of buttons



1. Right-click a toolbar. The **Toolbar Manager** window opens.
2. Click the **Color** arrow for a toolbar. The **Select Application Toolbar Colors** window opens.
3. Change the colors for various elements by clicking on the colored square to open the palette. You can also click in the **Color Preview** area.
4. To change button style, select one of the check boxes.
5. To apply the changes to all toolbars, select the check box.
6. Click **OK**.

To sort buttons on a toolbar

Several toolbars can be sorted alphabetically by selecting the **Sorted** check box.

Otherwise, buttons are arranged on the toolbar in the order in which they are selected.

Toolbars	Buttons				Location	Show / Hide
	Add/Remove	Font	Color	Sorted		
Chart, Quote, News...	>>>	>>>	>>>	<input checked="" type="checkbox"/>	Top - Left	<input checked="" type="checkbox"/>

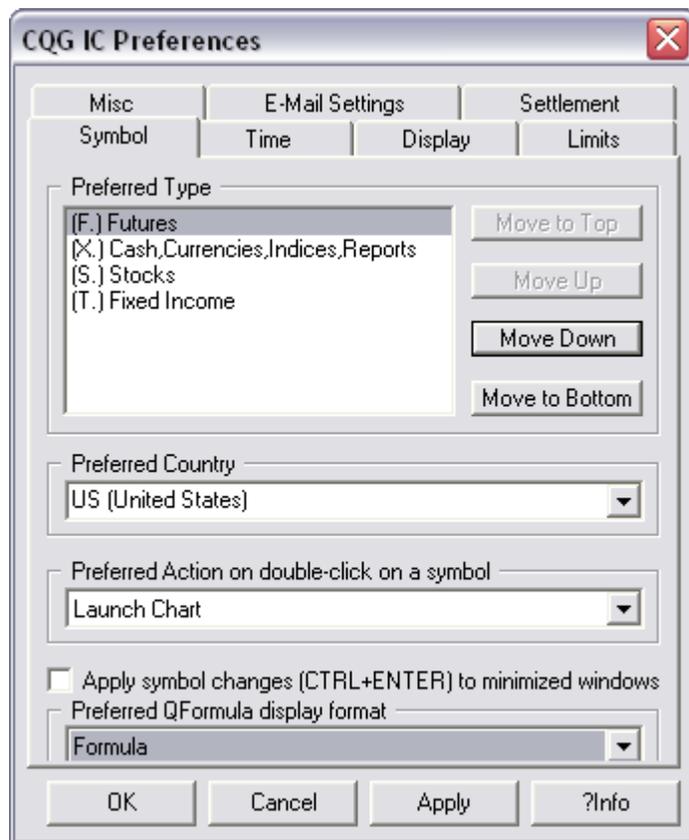
Setting System Preferences

System preferences apply system-wide and not only to one application or feature.

The symbol, time, display, limits, miscellaneous, and e-mail settings are included in system preferences. Click on either the **Setup** or the **System** button, and then click **System Preferences**.

Other preferences are set using the **System** menu.

Setting Symbol Preferences



Your **Preferred Type** selection sets the default symbol type that will be used in CQG IC. If you enter a symbol without a preceding F., X., S., or T., then the system will use the symbol type at the top of this list. The Preferred Type list also indicates the priority of symbols.

The **Preferred Country** selection sets the preferred country, in the event different instruments with the same symbol trade in more than one country.

When you double-click a symbol in one of the CQG IC windows, either a chart or a trading window opens. Choose chart or trading window here. The preferred trading window is selected on the **Misc** tab.

If you would like to change symbols in minimized windows as well as maximized windows when you press **CTRL+ENTER**, then select the **Apply symbol changes** check box. If this box is not selected, then symbols in minimized windows do not change when you press **CTRL+ENTER**.

The **Preferred QFormula** selection indicates how QFormulas should be named throughout CQG IC. QFormulas can be identified by Q Name (default), Q Number, and Formula on the windows and menus in CQG IC. For example, consider this QFormula (Define User Formulas window):

Q Num	Name	Description
Q1	FOB	Five-year T-note v. T-bonds

If Q Name is selected, then the QFormula is identified as "FOB."

If Q Number is selected, then the QFormula is identified as "Q1."

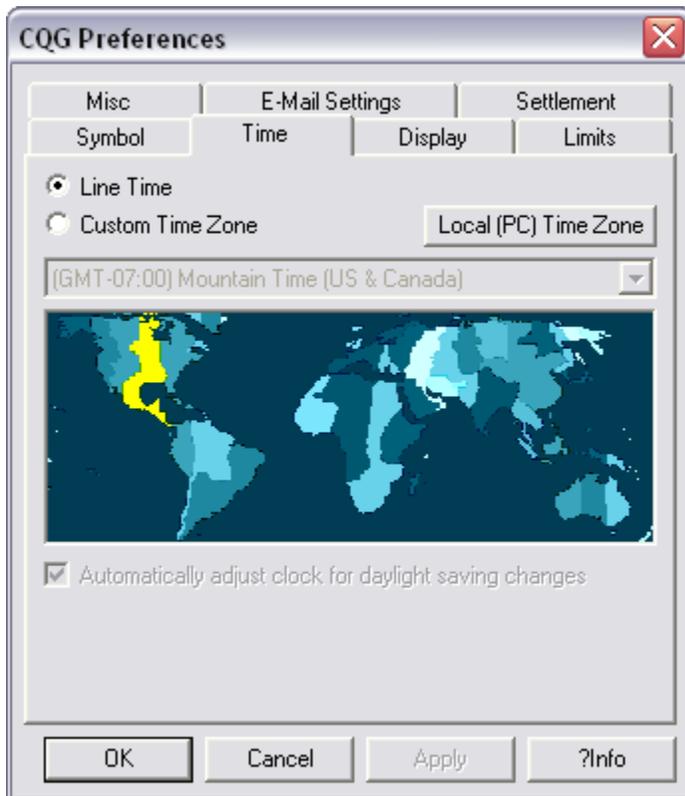
If Formula is selected, then the QFormula is identified as "SPREAD(2.5*FVA-USA,,,5:2)."

If you select QNumber and no number is available, then the QName is used.

If you select Formula and the formula has multiple lines, then QName is used.

If you select Formula and the formula is marked as "Deny Copy" and "Hide Formula when Deny Copy is set," then QName is used. For such formulas, the extended tooltip information will not include the formula.

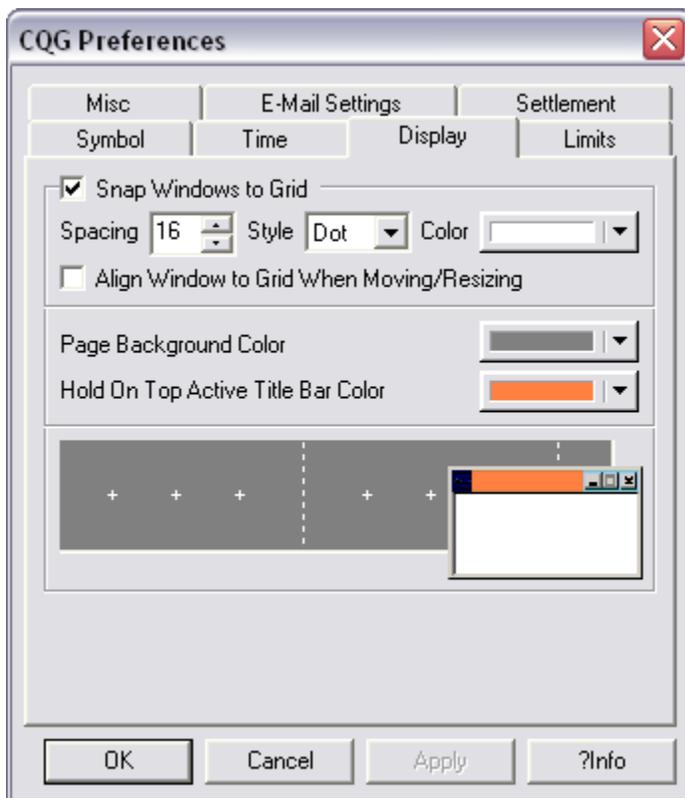
Setting Time Preferences



Please note that you need local administrator privileges to change the time.

Preference	Description
Line Time	Tells the system to use US Central time, which is CQG Line Time.
Custom Time Zone	Allows you to choose your time zone.
Local (PC) Time Zone	Forces the title bar time to agree with your PC's time.
Adjust for daylight saving	Select this check box to have the system automatically adjust the time for you.

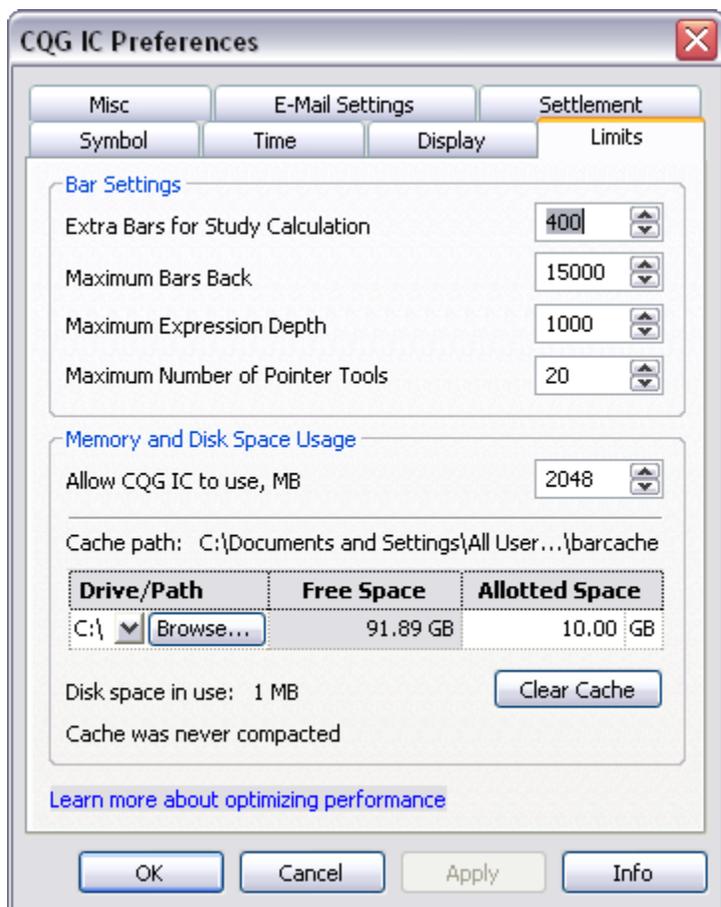
Selecting Display Preferences



Preference	Description
Snap Window to Grid check box	Aligns the current window along the application gridlines.
Spacing indicator	Sets the spacing (in pixels) between each snap-to-grid point.
Style indicator	Allows you to select the style for background window gridlines. Choices are: Solid, Dash or Dot.
Color indicator	Displays the color palette, allowing you to select the grid indicator color for the CQG background window. Note: This does not affect the active CQG window color, which is set from the color window associated with the active window.
Align Window to Grid when Moving/Resizing	Snaps window to the grid when it is moved or resized.

Preference	Description
Page Background Color	Displays the color palette, allowing you to select the background color for the CQG background window. Note: This does not affect the active CQG window color, which is set from the color window associated with the active window.
Hold On Top Active Title Bar Color indicator	Displays the color palette, allowing you to select the title bar color for hold on top windows.

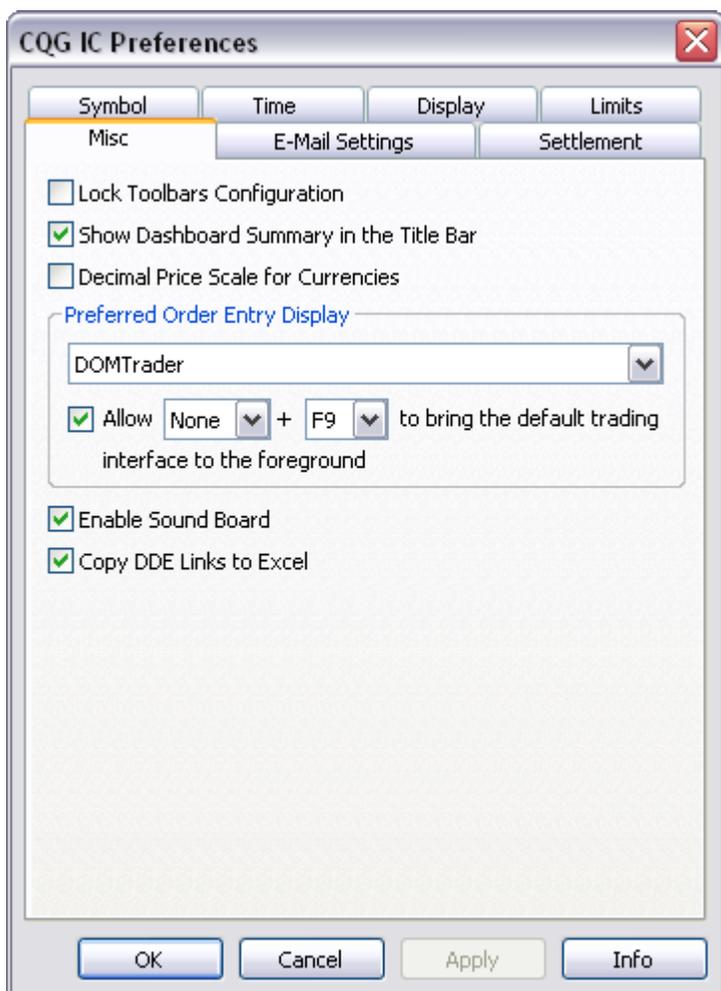
Setting Limits Preferences



Preference	Description
Bar Settings	
Extra Bars for Study Calculation	Allows you to indicate how many bars, prior to the first bar appearing on the chart, should be considered. This is especially important for some studies such as exponential moving average and some operators, such as the WHEN operator which have a theoretically unlimited range of history. Specifying this number also precludes unnecessary tie-ups when an invalid period is specified in the formula. You should be aware of the principle tradeoff: a higher number of extra bars will mean slightly more accurate values. However, this will come at the expense of system performance.
Maximum Bars Back	Indicates the maximum number of prior bars that can be requested from the server from within formulas or studies. Regardless of the value entered in a formula, this limit

Preference	Description
	cannot be exceeded once it is set in System Preferences. If the specified value is too high, these formulas may take too long to execute, or may cause the server to backup, which could cause data delays and/or slow down other processes on the pc.
Maximum Expression Depth	Used for endless nesting protection, which could pose a threat to server operation.
Maximum Number of Pointer Tools	Indicates the maximum number of pointer tools you can add to a chart. If you exceed this number, then you will be prompted to delete some. You can turn the warning message off.
Memory and Disk Space Usage	
Allow CQG to use, MB	Specifies a maximum memory amount that CQG IC can use. When this limit is reached, CQG IC flushes any cached data that is currently not in use. CQG IC is not restricted in any way by this value; it simply tells the system at what point unused data can be removed from memory. Default = 2048.
Cache path	Select the location of the disk cache file. The disk cache file is used to store chart bar data locally.
Allotted Space	Select how much space to dedicate to the disk cache file.
Clear Cache	Click this button to clear the disk cache of saved bar data.

Setting Miscellaneous Settings



Preference	Description
Lock Toolbars Configuration	Makes the Toolbar Manager window inaccessible, forcing you to keep your current toolbar configurations and characteristics.
Show Dashboard Summary in the Title Bar	Select this check box to display order and position information on the application title bar.
Decimal Price Scale for Currencies	When selected, the vertical price scale on a chart will be shown with a decimal; otherwise it is omitted. Note: This feature is valid only for the cross currencies.
Preferred Order Entry Display	Choose whether you would like the system to open the DOMTrader, Order Ticket, or Order Desk when you open a trading application from other applications, e.g. clicking Place an Order from a chart. You can change this setting

Preference	Description
	by clicking the Trade button on the main toolbar and clicking Configure Default Trading Application .
Allow shortcut to bring the default trading interface to the foreground	Set a keyboard shortcut that when used brings your Preferred Order Entry Display to the foreground of your screen.
Enable Sound Board	The Sound Board is used to manage sounds that indicate new trades, changes to the best bid and ask, and changes to the DOM book on DOMTrader, Order Ticket, Order Ticker, Time and Sales, Portfolio Time and Sales, and Quote Board. Each of these applications includes a Sound Board button on the title bar. To remove this button, clear this check box.
Copy DDE Links to Excel	Select this check box to use DDE rather than RTD when copying links to Excel from the Quote SpreadSheet.

Defining E-Mail Settings

Your system administrator can help you set your e-mail values. Here's an example of a [Gmail account setup](#).

CQG IC Preferences

Symbol | Time | Display | Limits

Misc | **E-Mail Settings** | Settlement

E-Mail Server:

Server Port:

SMTP server username:

SMTP server mailbox:

SMTP server password:

This server requires encrypted connection (SSL)

Use default e-mail client

If you do not know where to find this, ask your System Administrator or ISP.

OK Cancel Apply ?Info

Preference	Description
E-Mail Server	Address of mail server that supports SMTP connection.
Server Port	SMTP server port number.
SMTP server username	User name registered on the server.
SMTP server mailbox	Mailbox on behalf of which mail will be sent.
SMTP server password	User password.
This servers requires encrypted connection	If the server requires SSL, then check this box.
Use default e-mail client	If you want e-mails sent using your own e-mail application, then check this box. Please note that automatically sent e-mails, such as alerts and auto-run market scans, will always be sent via CQG because of anti-spam limitations.

To set preferences for Gmail accounts

Use these settings for Gmail accounts:

Preference	Value to enter
E-Mail Server	smtp.gmail.com
Server Port	465
SMTP server username	your Gmail user name (i.e. the name that comes before "@gmail.com")
SMTP server mailbox	Full e-mail address with domain.
SMTP server password	Password for your Gmail account.
This servers requires encrypted connection	Select this check box.
Use default e-mail client	Clear this check box.

Settings for other Web-based e-mail providers

Yahoo

Preference	Value to enter
E-Mail Server	smtp.mail.yahoo.com
Server Port	25
SMTP server username	Your Yahoo user name
SMTP server mailbox	Full e-mail address with domain
SMTP server password	Password for your Yahoo account
This servers requires encrypted connection	Select this check box
Use default e-mail client	Clear this check box

Earthlink

Preference	Value to enter
E-Mail Server	smtpauth.earthlink.net
Server Port	587
SMTP server username	Full e-mail address with domain
SMTP server mailbox	Full e-mail address with domain
SMTP server password	Password for your Earthlink account
This servers requires encrypted connection	Clear this check box

Use default e-mail client	Clear this check box
---------------------------	----------------------

AOL

Preference	Value to enter
E-Mail Server	smtp.aol.com
Server Port	25
SMTP server username	Your AOL user name
SMTP server mailbox	Full e-mail address with domain
SMTP server password	Password for your AOL account
This servers requires encrypted connection	Select this check box
Use default e-mail client	Clear this check box

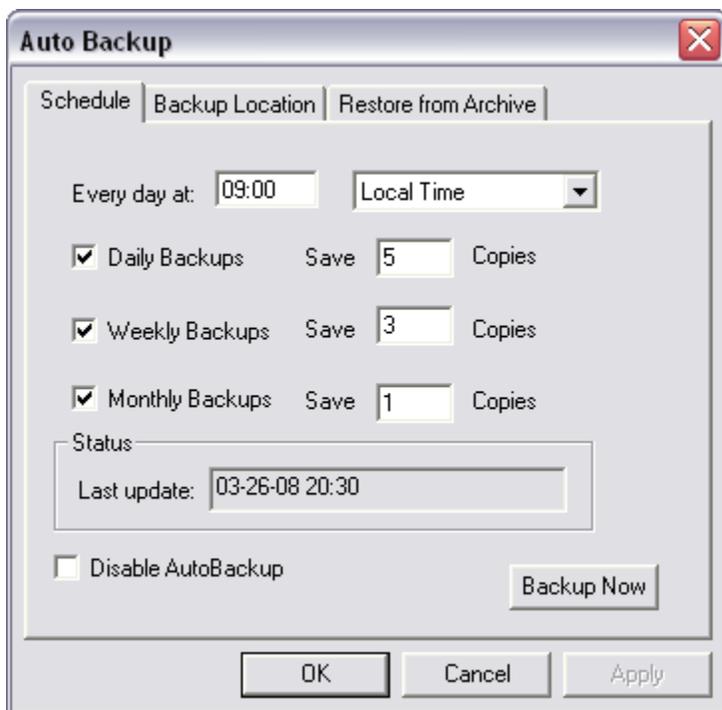
Setting Settlement Preferences

Select the **Use Settlement** check box to use the settlement price instead of the session close price to calculate net change.

Setting an Automatic CQG IC Backup

The Auto Backup feature allows you to specify when and how often the system will back up your saved pages, toolbar settings, custom studies, text history, study modifications, and alerts. Additionally, you can specify how many copies to keep.

To schedule a backup



1. Click the **System** button.
2. Click **Auto Backup User Setups**.
3. On the **Schedule** tab, specify the time, frequency, and number of backup copies that will be saved.

To disable a backup

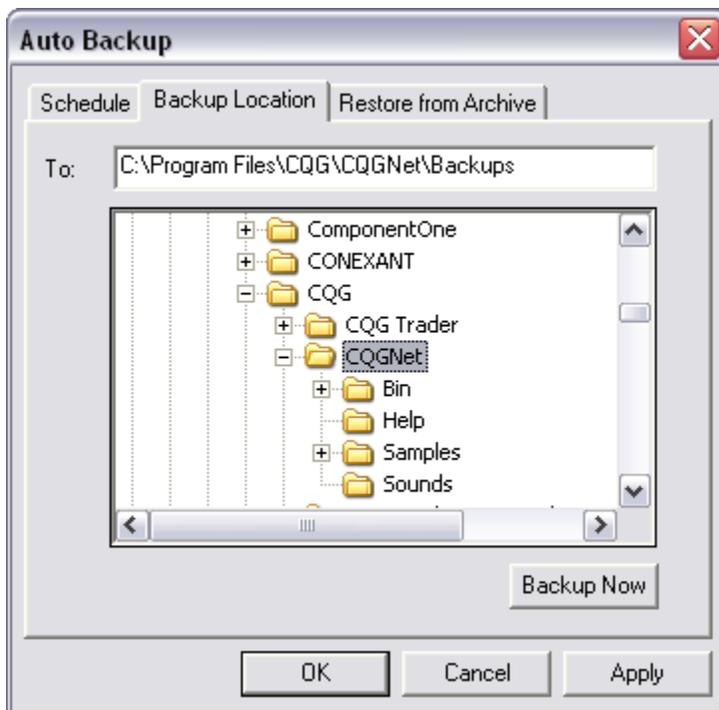
1. Click the **System** button.
2. Click **Auto Backup User Setups**.
3. On the **Schedule** tab, select the **Disable AutoBackup** check box.

To back up immediately

1. Click the **System** button.
2. Click **Auto Backup User Setups**.
3. On the **Schedule** tab, click the **Backup Now** button.

You can also click the **Backup Now** button on the **Backup Location** tab. This is helpful when you want to save the backup to removable storage. Simply change the location, back up, and then change the location back.

To select a backup location



1. Click the **System** button.
2. Click **Auto Backup User Setups**.
3. On the **Backup Location** tab, specify the folder where the backups will be saved.

You can also save the backup to removable storage. Simply change the location, back up, and then change the location back.

To restore the system to a prior state

1. Click the **System** button.
2. Click **Auto Backup User Setups**.
3. On the **Restore from Archive** tab, click the backup you want to use.
4. Click the **Restore Now** button.

Selecting a Recalculation Mode

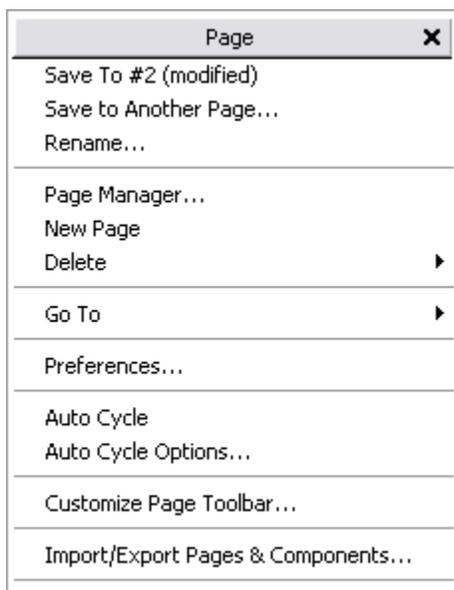
When a version of CQG is first started, the **Study Recalculation Mode** window opens. On this window, select the recalculation mode: on every tick, at the end of each bar, or at the first tick of each bar and periodically.

The recalculation mode can be changed in **Chart Preferences**.

Working with Pages

The [Pages toolbar](#) provides several buttons to help you manage and navigate pages.

The right-click menu of the **Page** button provides these options:



The page toolbar is discussed in "[Pages](#)" on page 25.

See Also: [Importing and Exporting Component Pacs](#).

Saving Pages

Once you have a page set up just the way you like it, can save the current page with its current page number by clicking the **Save** button.

You can also save a page to a specified page number. Right-click the **Page** button, and then click **Save to #** or **Save to Another Page**. You can designate a number up to 99999.

Setting Save Page Preferences

Right-click the **Page** button, and then click **Preferences**.

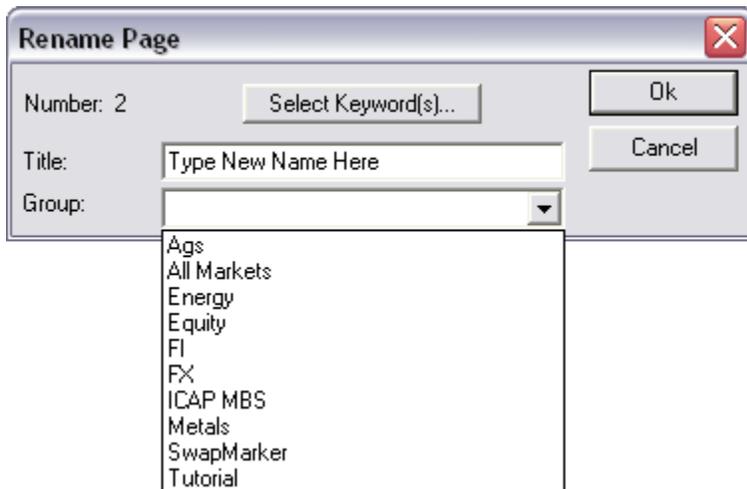
- Always Save** COG automatically saves all changes to any page.
- Confirm** Displays the Switching Pages: Confirm Save window, which allows you to save or not save any changes made to the page, or to cancel moving to another page.
- Manual Save** You must save any permanent changes made to a page by:
Right clicking on the Page button.
Selecting Save Changes to (current page number).

If the quote cell check box is selected, all charts on the next page selected reflect the instrument selected from the quote cell.

Renaming a Page

Naming pages provides an easy way to remember a page's contents. If the contents of a page change, you might also want change the page name.

Right-click the **Page** button, and then click **Rename**.



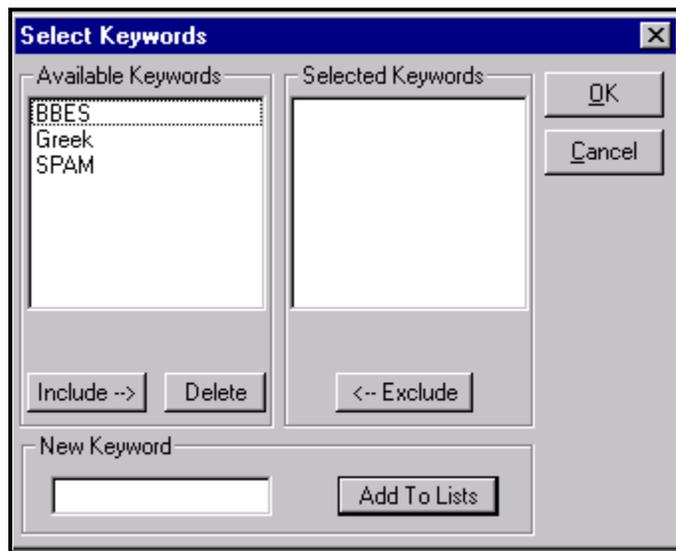
You can also add the page to a group and [select keywords](#).

You can also rename a page from the [Page Manager](#).

Keywords

Keywords help you as you search for pages.

1. Right-click the **Page** button, and then click **Rename**.
2. Click the **Select Keyword(s)** button:

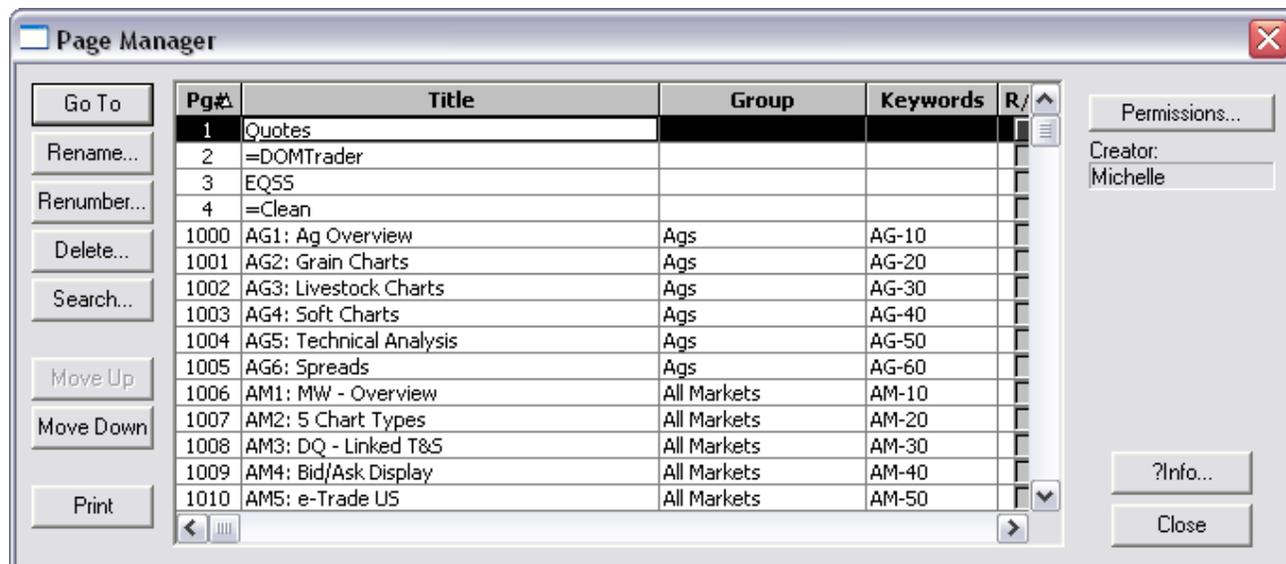


Here you can add a new keyword to the list, delete an existing keyword, and add and remove keywords for this page.

You can also enter a keyword directly in the Keywords column on the [Page Manager](#).

Managing Pages

Right click the **Page** button, and then click **Page Manager**.



Your saved pages are listed here along with their page numbers, groups, and keywords. Sort columns by clicking on the column heading.

To protect the page from being changed, make it read-only by selecting the **R/O** check box. When there is a check mark in this column, it means the component can only be changed or deleted if the user knows the password.

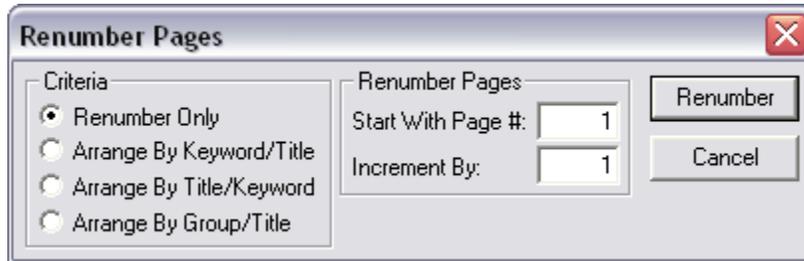
To assign a page to a group

1. On the **Page Manager**, click on a page.
2. Click the **Rename** button
3. Select a group from the list. For a new group name, type that name in the **Group** field. Please note that group names are case-sensitive.

You can have up to 100 page groups.

To renumber a page

1. On the **Page Manager**, click on a page.
2. Click the **Renumber** button.



3. Select a criteria for renumbering.

Renumber Only	Changes the numbering scheme only without changing the order of the pages.
Arrange by Keyword/Title	Sorts the page list by keyword and Title and renumber the list after the sort has been done.
Arrange By Title/Keyword	Sorts the page list by title and then by keyword and renumbers the list after the sort has been done.
Arrange by Group/Title	Sorts by group and then by the title and renumbers the list after the sort has been done.

4. Type a number in the **Start With Page** box for the first page number.
5. Type a number in the **Increment By** box to set the amount by which each page number will be incremented.
6. Click the **Renumber** button.

Read-only pages cannot be renumbered.

To move pages

Click the **Move Up** or **Move Down** button on the **Page Manager** to re-order pages.

To print a list of your pages

Click the Print button on the **Page Manager**.

Creating a New Page

1. Right-click on the **Page** button.
2. Click **New Page**. You may be asked to save the current page.

Deleting a Page

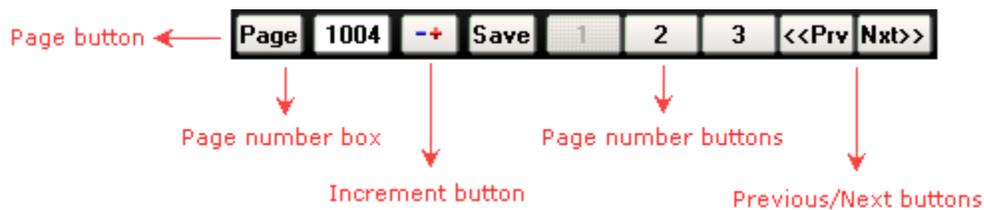
1. Right-click on the **Page** button.
2. Point to **Delete**, and then select either **Current Page** or **Selected Pages**.
If you select **Current Page**, the page that is currently displayed is immediately deleted.
If you select **Selected Pages**, the **Page Manager** window opens.
3. Click **Delete**.

Moving to Another Page

There are several ways to move between pages. You can use several of the buttons on the Page toolbar or the keyboard.

Page toolbar

These buttons can be [added and removed](#) using the Toolbar Manager.



Page button

Click this button and then click a page. You can also point to groups and then click a page. If a page “cannot display,” then it is already displayed on another monitor.

Right-click the **Page** button, and point to Go To. Return to the last page, go to the previous page, go to the next page, or go to another page that you select.

Page number box

Type a page number.

Keyboard shortcut: CTRL + ALT + P

Increment button

Click to move behind one page.

Right-click to move forward one page.

Page number buttons

Click a button to move to that page.

Add buttons to using the Toolbar Manager for the Pages toolbar.

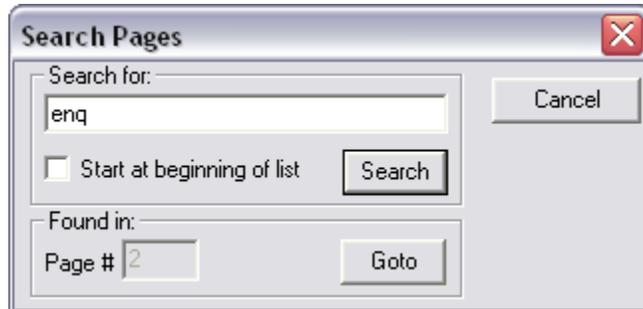
Previous/Next buttons

Click the <<**Prv** button to move back one page.

Click the **Nxt**>> button to move ahead one page.

Search

1. Right-click the **Page** button, and click **Page Manager**.
2. Click **Search**.



3. Enter a character, word, or phrase in the **Search** box. If you click the **Start at beginning of list** check box, then pages will be searched in numerical order.
4. Click the **Search** button. Results will be displayed in the **Found** box.
5. Click **Goto** to move to that page. To continue searching, make sure the check box is cleared and click **Search** again.

If there are no search results, then the **Found** box will contain a zero.

Pages must be saved for you to search what is currently on the page.

Keyboard

Press CTRL + [+] to move forward one page.

Press CTRL + [-] to move back one page.

Using Auto Cycle to View Pages

The Auto Cycle feature displays each selected page for a specified interval and then displays the next page in the cycle. You can select the pages to display and how long each displays using the Auto Cycle Setup window.

To turn on Auto Cycle

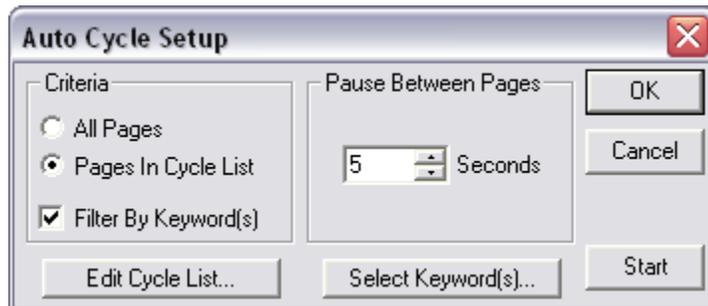
1. Right click on the **Page** button.
2. Select **Auto Cycle**.

To run Auto Cycle

1. Right-click the **Page** button.
2. Select **Auto Cycle Options**.
3. Click **Start**.

To configure Auto Cycle

1. Right-click the **Page** button.
2. Select **Auto Cycle Options**.



3. Choose which pages you want included in the cycle: **All Pages** or **Pages in Cycle List**.
4. If you want to filter by keyword, select the **Filter by Keyword(s)** check box.
5. Select how many seconds you want each page to be displayed.
6. Click **OK** to save the settings without running the cycle.

To edit the cycle List

1. Click the **Edit Cycle List** button.
2. Use the **Exclude** button to move pages you do not want to see in the cycle to the Available Pages list.
3. Use the **Include** button to move pages you do want to see in the cycle to the Selected Pages list.
4. Click **OK**.

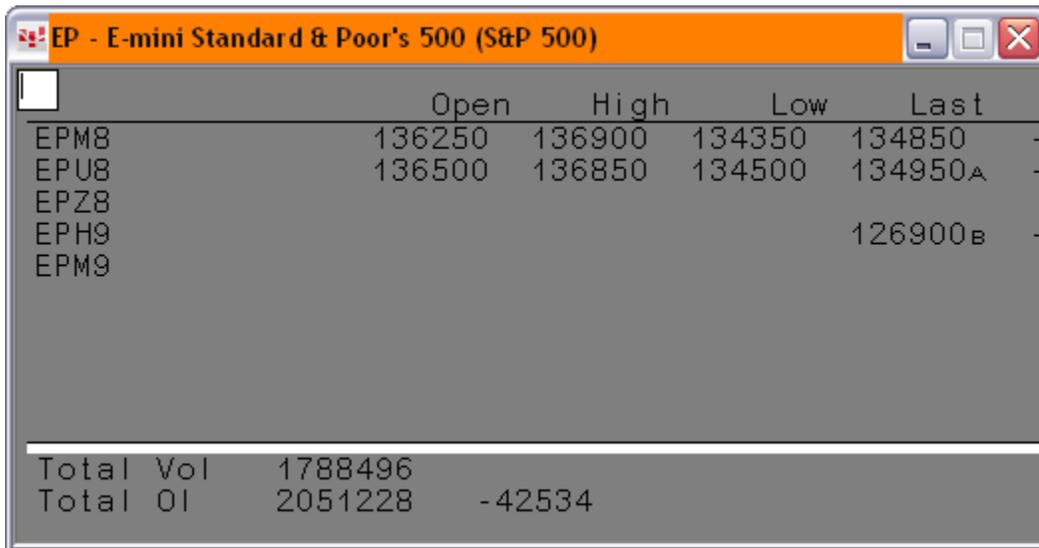
To select keywords

1. Click the **Select Keyword(s)** button.
2. Use the **Exclude** button to move keywords you do not want in the search to the Available Keywords list.
3. Use the **Include** button to move keywords you do want in the search to the Selected Keywords list.
4. Click **OK**.

Working with Application Windows

Placing a Window in a Page

Some application windows are not placed in the current page when they are opened. You will know immediately if that is the case, as the title bars on these windows [are colored](#) as such, like this All Contracts window:



	Open	High	Low	Last
EPM8	136250	136900	134350	134850
EPU8	136500	136850	134500	134950 _A
EPZ8				
EPH9				126900 _B
EPM9				
<hr/>				
Total Vol	1788496			
Total OI	2051228	-42534		

Application windows can be placed in the current page or taken out of a page. Those options are on the [control button menu](#).

Taking a window out of a page will remove its [toolbar](#) from the **Main** window.

Placing a Window on Top

When a window is out of a page, the control button menu will include:

- ✓ Window on Top of CQG/PC
- Window on Top of All Applications

With **Window on Top of CQG/PC** selected, the window not in a page will be displayed over any CQG IC window allowing you to move it between pages on different monitors.

With **Window on Top of All Applications** selected, the window will continue to be displayed even with CQG IC minimized. For example, you could display a chart while you peruse the business headlines on the Internet:



The Control Button Menu

Each window has a control button in the top left corner. If the application window is maximized, that is if it fills the entire **Main** window, then the control bar menu is the same as the **Main** window:



Main Window Control Button Menu

You will be familiar with several of these options, as they are common to most software and not only CQG IC:

Restore	Restores a window to the size it was before being maximized or minimized.
Move	Changes the mouse cursor, so that the window can be dragged. You can do this with many windows without having to select this menu item.
Size	Changes the mouse cursor, so that the window can be resized. You can do this with many windows without having to select this menu item.
Minimize	Minimizes the window to the task bar.
Maximize	Maximizes the window so that it fills the screen.

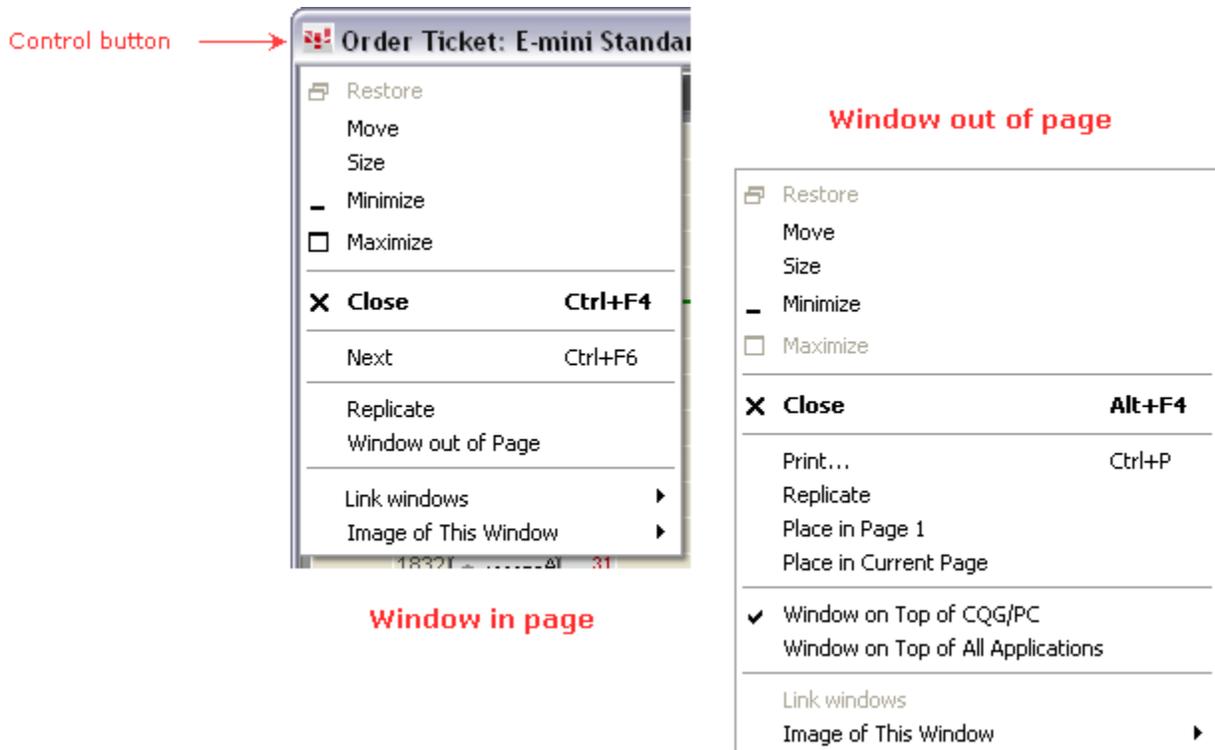
Other options are CQG-specific:

Exit CQG	Closes CQG.
Restart CQG	Closes CQG and starts it again.
Show Menu	Displays a menu above the toolbar.
Hide ToolBar	Removes the toolbars from the Main window.
Hide StatusBar	Removes the status bar from the Main window.
Full Screen	Removes all toolbars and menus, so that the application window fills the entire computer screen.

You can also press ALT + SPACEBAR to open this menu.

Application Window Control Button Menu

If the application window is not maximized, the menus are:



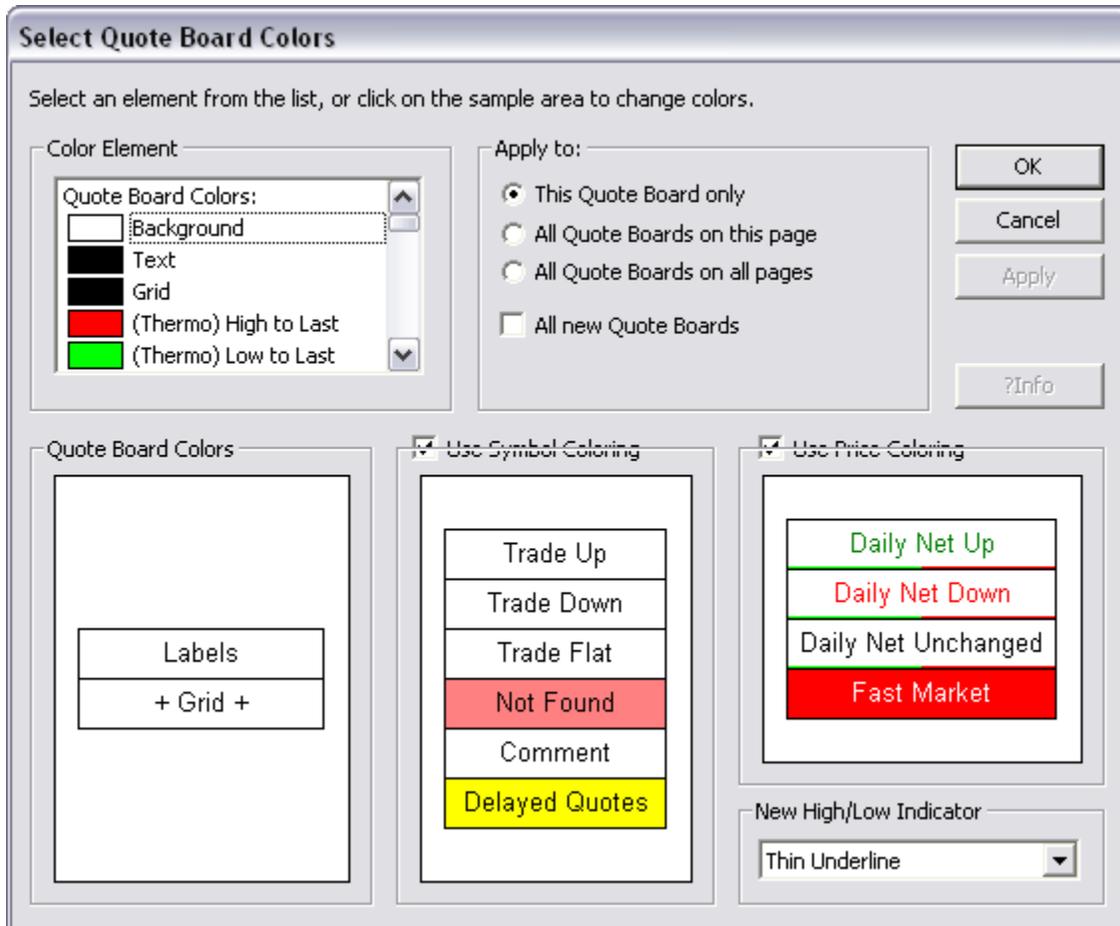
Next	Moves to the next window on the page based on the order the windows were added to the page.
Replicate	Creates another instance of the window.
Window out of Page	See " Placing a Window in a Page " on page 63.
Link windows	See " Linking and Grouping Windows " on page 73.
Image of This Window	See Working with Images .
Print	See " Printing " on page 71.
Place in Page 1	See " Placing a Window in a Page " on page 63.
Place in Current Page	See " Placing a Window in a Page " on page 63.
Window on Top of CQG/PC	See " Placing a Window in a Page " on page 63.
Window on Top of All Applications	Please see " Placing a Window in a Page " on page 63.

Changing Colors

You can change the colors in many CQG applications. The menu option is displayed when you click the **Setup** button. The name of the menu option depends on the application. For example, you can change quote window colors by clicking **Quote Colors**.

The content of the **Select Colors** window also depends upon the application.

Here are the options for quote windows:



Each of the components that can be changed are listed here. Please note that some components are system-wide. Changing them changes them in all applications.

Some applications may have additional options available. For example, you can change the line style for the new high/low indicator in quote windows.

Your changes are previewed in the Colors area of the window. You can also click in the area to change the colors.

Changes can be applied to this application window, all of these application windows on this page, all of these application windows on all pages, and all new instances of this application window. For example, if you choose **All Quote Boards on all pages**, then every quote board on every page will have these new settings.

To change colors

1. Click the colored box near the component you wish to change.
2. Click on the desired color. You can also click the ... button to access additional colors.

Changing Fonts

You can change the font in many of the CQG applications. The menu option is displayed when you click the **Setup** button. The name of the menu option depends on the application. For example, you can change quote window font by clicking **Quote Fonts**.

The font window works like any standard font window. Select the font name, style, and size.

Changes can be applied to this application on this page, all of these application windows on this page, all of these application windows on all pages, and all new instances of this application window.

For example, if you choose **Apply to ALL QB's on THIS page**, then every quote board on this page only will have this font setting.

Click the **Restore Defaults** button to return to CQG Swiss.

Printing

Click the **Print** button to print the selected application window, for example, a chart. You can also click **Print** on the menu bar.



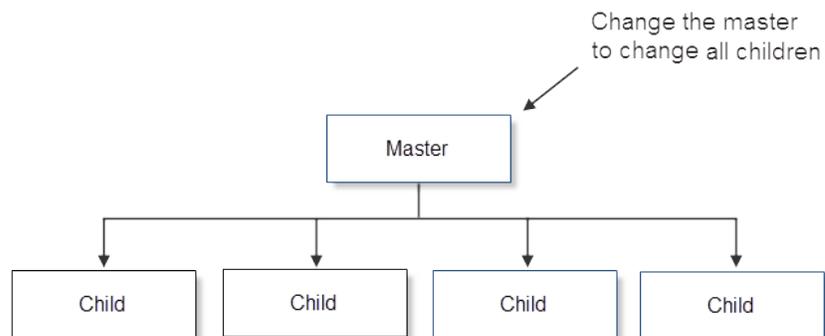
Right-click the **Print** button or choose a menu item to access other print options:

- **Print Setup:** Opens the **Print Setup** window.
- **Print Preview:** Provides a preview of what the window will look like when printed.
- **Print Preview for Selection:** Provides a preview of what the selection will look like when printed. Typically used when part of a news story is selected.
- **Print:** Prints the window that is selected.
- **Print Selection:** Prints the selection. Typically used when part of a news story is selected.
- **Print Page:** Prints the page.
- **Copy Window Image to Clipboard:** Copies an image of the window to your clipboard.
- **Copy Page Image to Clipboard:** Copies a picture of the page to your clipboard.
- **Black On White Printing:** Prints black and white and not in color.
- **Hi Resolution Print:** Prints in high resolution.
- **Tabular Display:** Changes the chart display to a tabular view.
- **Fit on Page:** Ensures that your image will print on one page.

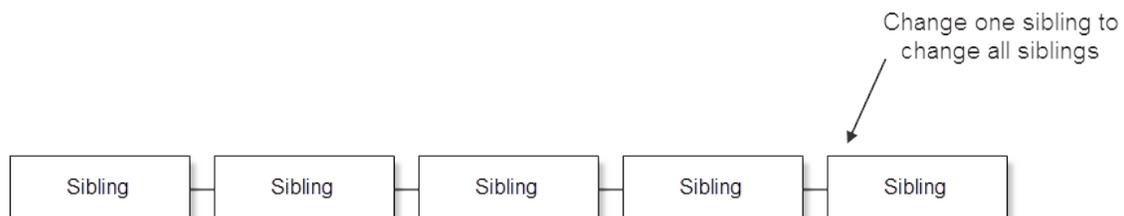
Please note that these options may differ from window to window.

Linking and Grouping Windows

Linking windows results in one master window and at least one child window. When you change a symbol, price, or account on the master window, the same change is made on child windows.



Grouping windows results in sibling windows. When you change a symbol, price, or account on any sibling window, the same change is made on all of the other sibling windows.



Linking and grouping are mutually exclusive; you cannot both link and group a window.

Grouped windows are indicated by a triangle icon on the title bar, a master window is indicated by a square, and a child window is indicated by a circle.

Linking icon colors must be unique, and grouping colors must be unique. (A group and a link can share the same color.) The system assigns a color, but you can change it.

You can link and group windows across pages, and you can link and group windows that are not [placed in a page](#).

- If you close a page, all in-page links are saved.
- If you load a page, all in-page links are restored.
- If you delete page, then all in-page links are deleted.

- If a child loses its link to the master, then its icon is changed, and the only action you can take is to remove the link.

Links are replicated when you [save to another page](#). If the existing link is in a single page, then a new link is created on the new page. So, a linked DOMTrader and chart on page one become a separately linked DOMTrader and chart on the new page (confirmed by a change in link color). If that DOMTrader were out of page and linked to a chart on page one, then after saving to another page, the new chart is linked to the same out-of-page DOMTrader.

Linking and grouping is available for these windows:

- All Contracts
- Chart
- Custom QuoteBoard
- DOM Display
- DOMTrader
- Enhanced Quote SpreadSheet
- Last/Net Change
- Market Scan
- Market Watch
- Options Calculator
- Options Graph
- Options Window
- Order Desk
- Order Ticker
- Order Ticket
- Place Order
- Quote Board
- Quote SpreadSheet
- Signal Evaluator
- Simple Order Ticket
- SnapQuote
- Spread Matrix
- Time & Sales
- Trader System Optimizer
- Volatility Workshop
- What If

Behavior

On an Options window, changing the underlying contract results in the put option for the active month, which is in the money, being applied to associated windows. Moving the price cursor applies the active month and selected strike price to associated windows.

On a chart, changing the price changes the price on the Order Ticket. This is true only for chart types with a price scale equal to the symbol price scale. If the price is not aligned with the symbol tick size, then if the price is above the adjusted market price, it is rounded down to the nearest visible price, and if the price is below, it is rounded up to the nearest visible price.

On a Quote Board, clicking a cell changes the symbol in associated windows.

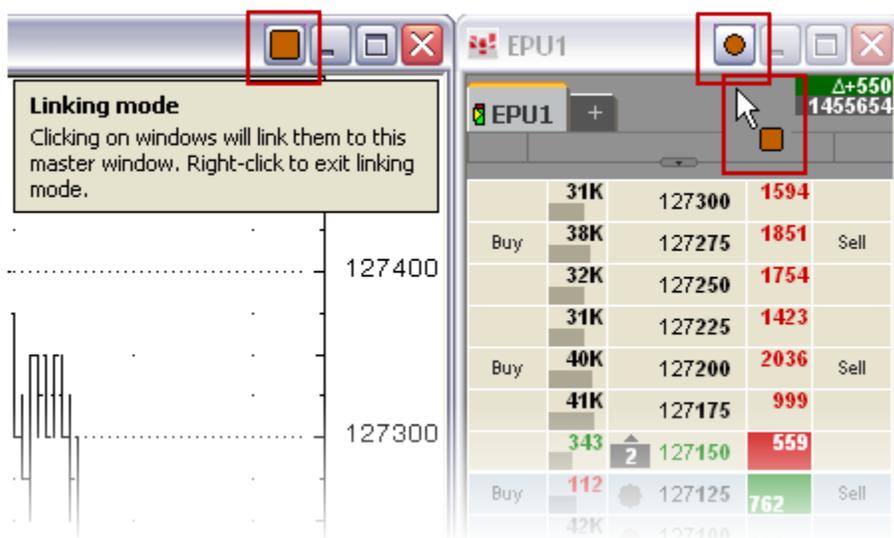
On the QSS and EQSS, changing the account changes it on associated trading windows. Please note that you must be in trading mode.

On the Orders and Positions window, changing the account changes it on associated trading windows. You can change the symbol too if a particular symbol is selected in the filter panel.

To link windows

1. Click the CQG logo button on the top left corner of the window you want to link. This window becomes the master window.
2. Click **Link Windows Mode**.
A message lets you know that you are in linking mode. A colored square appears on the top right corner of the master window and the cursor changes.
3. Click the window you want linked to the master. Windows to be linked must be open before you are in linking mode; you cannot select **Link windows** and then open a window to link.

A colored circle appears on the top right corner of the window indicating that it has been linked to the master window.



4. When you are finished linking windows, right-click to exit linking mode.

If you change your mind about which window you'd like to be the master, you can [change it](#).

To link additional windows

1. Click the colored square on the master window.
2. Click **Link More Windows**. The cursor changes.
3. Click the windows you wish to link.
4. When you are finished creating links, right-click.

You can also click the CQG logo on a window, and then click **Add to Existing Set**.

To unlink windows

You can choose to unlink one, some, or all windows.

To unlink all child windows and the master

1. Click the colored square on the master window.
2. Click **Unlink associated windows**.
3. The colored square and circles are removed.

To unlink a child and the master

1. Click the colored circle on the child window.
2. Click **Unlink this window**.

To change a child to a master

1. Click the colored circle on the child window.
2. Click **Change to a Master**.

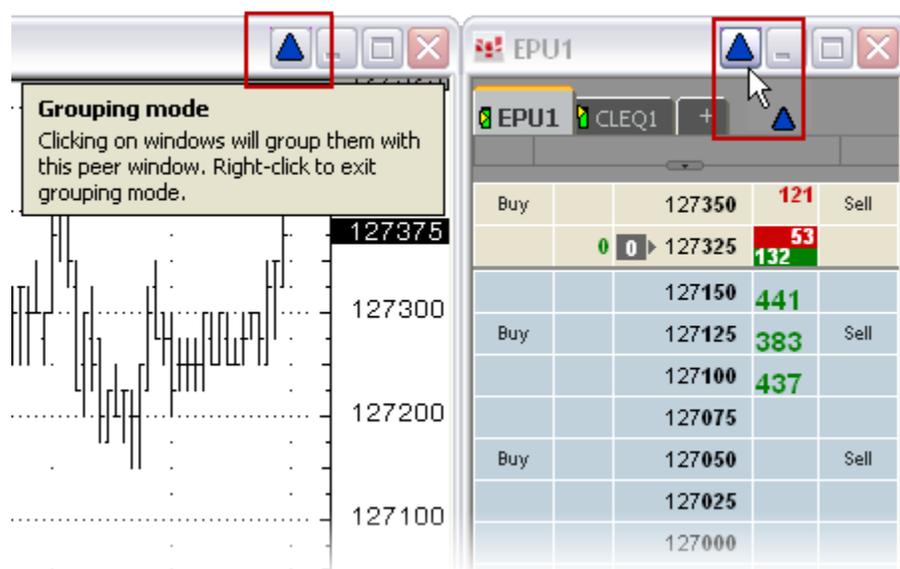
To group windows

1. Click the CQG logo button on the top left corner of the window you want to link. This window becomes the master window.
2. Click **Group Windows Mode**.

A message lets you know that you are in grouping mode. A colored triangle appears on the top right corner of the master window and the cursor changes.

3. Click the window you want grouped. Windows to group must be open before you are in grouping mode.

A colored triangle appears on the top right corner of the window indicating that it has been grouped.



4. When you are finished group windows, right-click to exit grouping mode.

To group additional windows

1. Click any colored triangle.
2. Click **Group More Windows**. The cursor changes.
3. Click the windows you wish to add.
4. When you are finished grouping, right-click.

You can also click the CQG logo on a window, and then click **Add to Existing Set**.

To ungroup windows

1. Click any colored triangle.
2. Click **Ungroup Associated Windows**.

To move between linking and grouping

To change a master and children to a group

1. Click either the colored square on the master window or circle on the child window.
2. Click **Change this Set to a Group**.

To change a group to a master and children

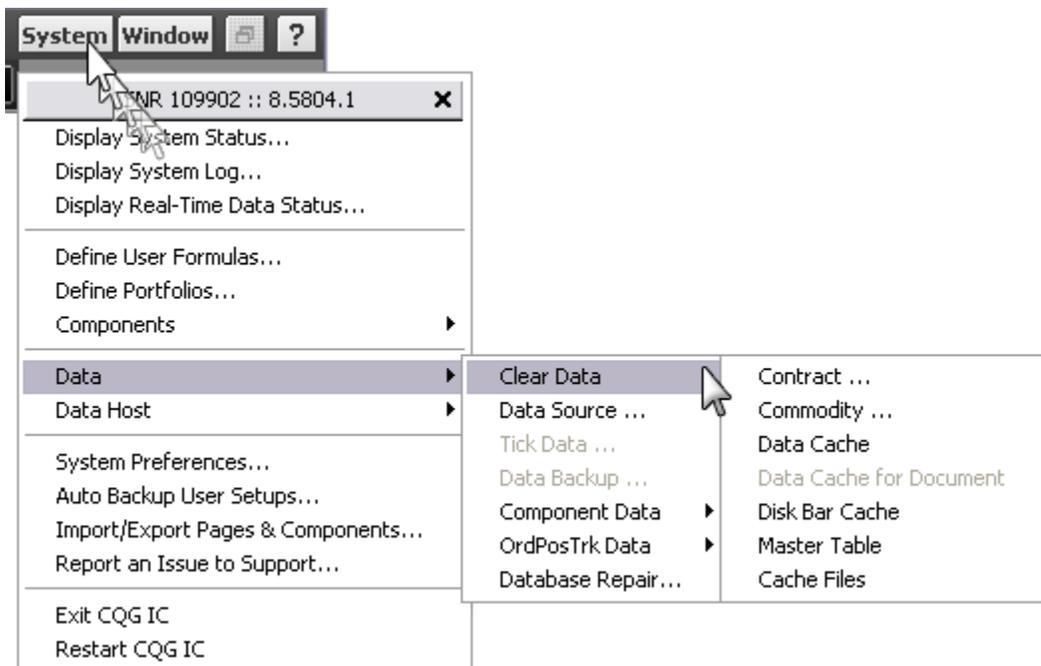
1. Click the colored triangle on the grouped window that you want to become the master.
2. Click **Change to a Master Window**. The associated siblings become children.

To change the color of linked or grouped windows

1. Click the colored square on a master window or click a triangle on a sibling.
2. Click **Change color**.
3. Click a color on the palette.

Clearing Data

The system menu provides options for you to clear data from the cache and the master table.



There are four menu items that may be useful to advanced users:

- **Clear Data > Cache Files**

What it does: Deletes all files in temp folder (c:\Documents and Settings\All Users\Documents\CQGNNet\temp), which are the caches of corresponding server files. This forces the system to re-request the data that was stored there from the server on an “as needed” basis.

When to use it: When problems such as unsuccessful symbol resolution, incorrect names in the title of charts, incorrect session information (boundaries, holidays), and wrong scale occur.

- **Clear Data > Master Table**

What it does: Deletes the internal objects that correspond to contracts and commodities and forces the system to re-request from the server the contracts and commodities that are in use.

When to use it: When issues with symbol resolution or options contracts occur.

- **Clear Data > Data Cache**

What it does: Clears in-memory cache (bars in particular) causing data to be re-requested from the server.

When to use it: When you want to remove and re-request in-memory cached data only for a specific chart or any other application that has only one entity displayed.

- **Clear Data > Disk Bar Cache**

What it does: Clears the saved chart bar data from the local disk cache.

When to use it: When you want to remove all stored bar data. Bar data is saved again when you log off of CQG IC.

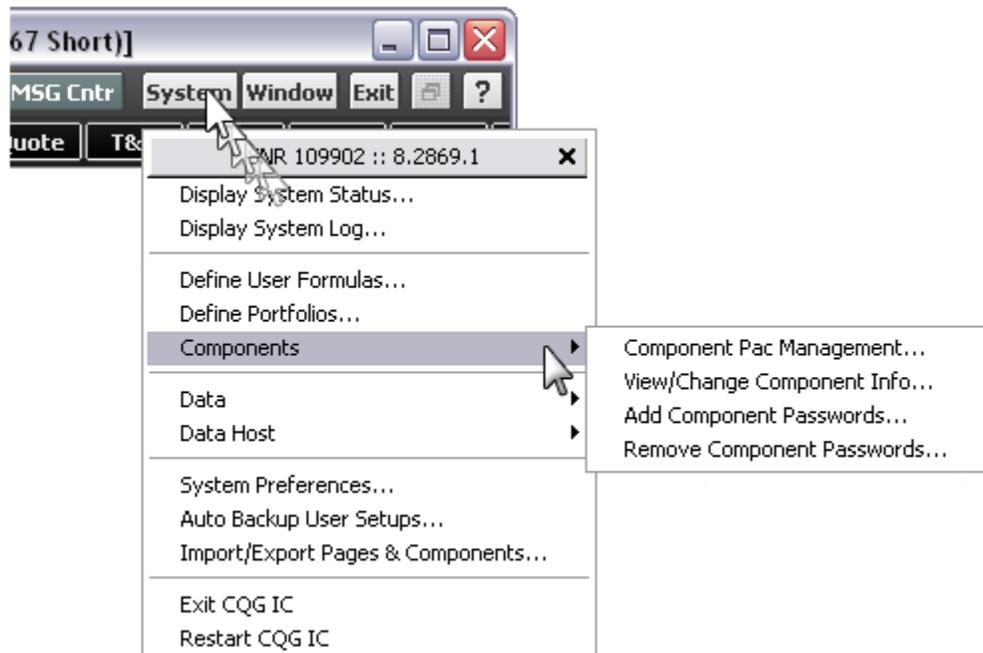
Managing Pacs and Components

A pac is a file that contains a set of components and settings. A component is one element of the CQG IC system, such as a condition, a page, a portfolio, a user value, or a QFormula. Some components may be dependent on other components, such as a condition being dependent on a user value.

To protect your information, components have security features, including setting a password, saving the component as read-only, disabling copying and exporting, and requiring an enablement.

Several pacs are delivered with your system, for example, pacs for pre-set pages. CQG product and support specialists may also provide pacs specific to the topic they are addressing with you. In CQG IC, you can import and export various elements of your system by using pacs. You can export a pac to back up your system, move data from an old system to a new system, or share your setup with another CQG IC user. That CQG IC user would then import that pac. Please note that the Alert, Market Scan, Signal Evaluator, and Strategy windows cannot be exported. You can also import and export all of your settings by creating a zip file.

Pacs and components can be managed through the **System** menu. Click the **System** button, and then point to **Components**.



Importing, Exporting, and Deleting Pacs Using the Wizard

CQG IC includes a wizard that walks you through each step in importing and exporting pacs.



This wizard include four tasks:

- importing settings
- exporting settings
- importing pages and components
- exporting pages and components

The **All Settings** export/import allows you to save every aspect of your CQG system, including color schemes, toolbar buttons, and all configuration settings. The All Settings zip file is usually quite large. You must save it to a removable media device to export it to another system. The **Select Pages & Components** export/import allows you to specify selected elements of your system, such as a page or series of pages or some other individual component of the system. A Component Pac file is much smaller than the All Settings file and is often small enough to be e-mailed.

To export settings using the wizard

1. Click the **System** button.
2. Click **Import/Export Pages & Components**, which opens the **Import/Export Settings & Components** wizard.
3. Click the **Export All Settings** button. Click **Next**.
4. Select the location you want to save the file to.
5. Click **Save**. The exported data is saved to a .zip file in the selected folder. This file can be shared with another CQG user and imported.
6. Click **Finish** on the confirmation window.

To import settings using the wizard

This is one way to revert to your previous settings.

1. In the case of importing someone else's settings, make sure the settings file is saved to your computer.
2. Click the **System** button.
3. Click **Import/Export Pages & Components**, which opens the **Import/Export Settings & Components** wizard.
4. Click the **Import All Settings** button. Click **Next**.
5. Find and select the file.
6. Click **Open**, and then click **OK** to confirm your action. CQG replaces the settings.
7. Click **Finish** on the confirmation window.

To export pacs using the wizard

1. Click the **System** button.
2. Click **Import/Export Pages & Components**, which opens the **Import/Export Settings & Components** wizard.
3. Click the **Export Select Pages & Components** button. Click **Next**.
4. Choose a file location, make any relevant notes, and decide password requirements. You can also change the name of the pac in the file path. Click **Next**.
5. Using the component menu, select **Page**, **Portfolio**, **QFormula**, **Session**, **Study**, **Trade System**, **TSO Setup**, or **User Value** to lists the available components for that category. If you select a component that is prohibited from being exported, you receive notification that not all components were selected.
6. Select **All** to export all of the components in that category, or select each component individually.
7. For each component, set passwords and permissions. Click **Next**.

8. In cases where dependencies cannot be exported, a dependencies window is part of the wizard.
9. Click **Next**, and then click **Finish** on the success message. The file can now be transported to another system via removable media or e-mail and imported. To send the file immediately, click the **E-mail This File** link on the confirmation window.

To import pacs using the wizard

1. Verify that the .pac file is saved to your computer.
2. Click the **System** button.
3. Click **Import/Export Pages & Components**, which opens the **Import/Export Settings & Components** wizard.
4. Click the **Import Select Pages & Components** button. Click **Next**.
5. Browse to find the file, and then click **Next**.
6. The pac details are provided for your reference. Click **Next**.
7. The pac components are listed. Click **Next**.
8. Confirmation that all dependencies have been found is indicated. Click **Next**.
9. If components of this pac were previously installed on your computer, then they will be listed on the **Overwrite Components** window. Click **Next**.
10. Click **Finish** on the confirmation window.

To delete a pac using the wizard

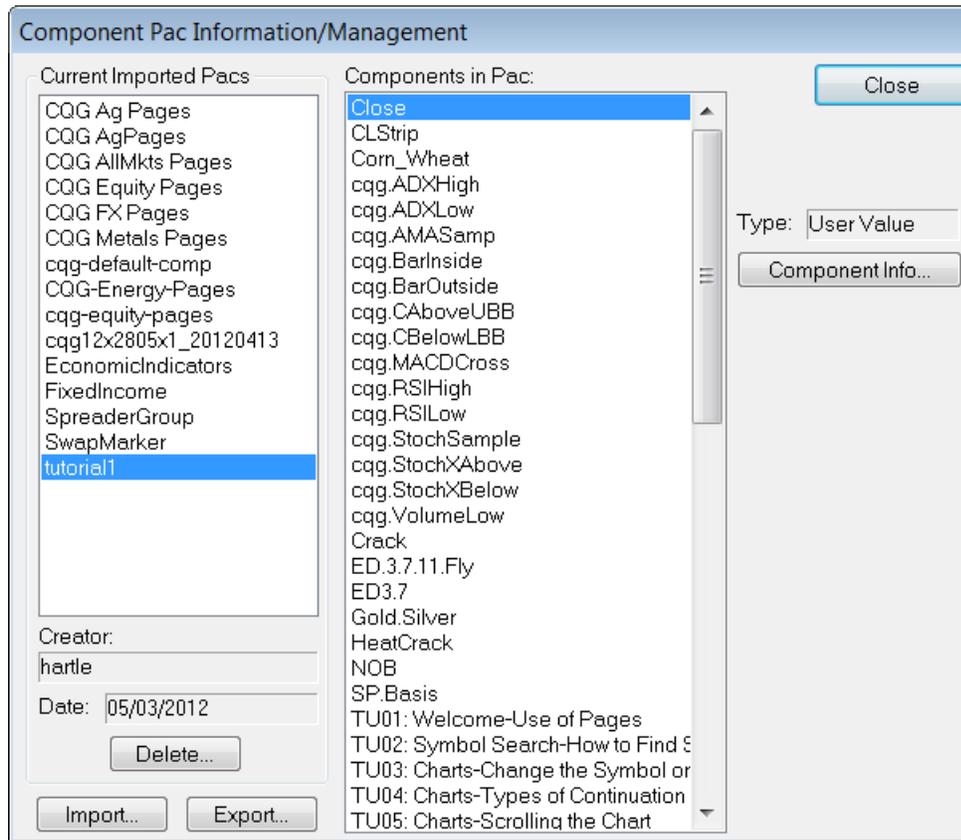
Deleting a pac may have implications for other elements of your system. For example, a chart may be using a custom study from a pac. A page may be dependent on a pac.

1. Click the **System** button.
2. Point to **Components**.
3. Click **Component Pac Management**.
4. Click the pac you want to remove from your system.
5. Click the **Delete** button.

Importing, Exporting, and Deleting Pacs

In addition to using the wizard, you can import, export, and delete pac on the pac management window.

Click the **System** button, point to **Components**, then click **Component Pac Management** to open the **Component Pac Information/Management** window:



- To import a pac, click the **Import** button to start the import process.
- To export a pac, click the **Export** button to start the export process.
- To delete a pac, click the **Delete** button, which opens the **Confirm Deletion of Loaded Pac** window. You are notified of components that are dependent on that pac. Click the **Delete Pac** button to confirm.

Managing Components

Components can be viewed, changed, and deleted.

View and change components using the **System** button. The information available for components includes: type, creator, last updated, security settings, and other components that it depends on or components that depend on it. You can also see if the component was imported from a pac and which one. Changing the component includes setting security features.

Delete components on **the Define User Formulas** window.

To view component information

1. Click the **System** button, point to **Components**, then click **View/Change Component Info** to open the **View Component Information** window. Use this window to select the component and view the details.

2. Click a button to see by existing or deleted pacs:

Existing Components = all available components.

Deleted but used Components = components that have been deleted but are still referenced by another component.

New Components = sets the Component's Information section as the default, so that these values are used each time a new component is created. When you select this option, all other options are unavailable. Click **Close** to complete this action.

- Using the Type menu, select what sort of component you're looking for, such as a condition, portfolio, or QFormula.
- Using the Name menu, select the pac. Component details are displayed in the information areas.

Dependencies = components that this component uses

Used By = components that use this component

View Component Information

Specify which Components to look at, then the Type and Name as needed. All information associated to the selected Component will be shown. Close

Component info to be viewed

Existing Components
 New Components
 Deleted but used Components

Type: Study

Name: BAVolCross^

Component's Information

Type:	Study
Creator:	CQG
Last Updated:	03/30/2012
Passworded:	No
Read Only:	No
Denied Copy:	No
Denied Export:	No
Enablement Required:	No

Change Component Info...

Imported from Pac(s):
FixedIncome

Component's References

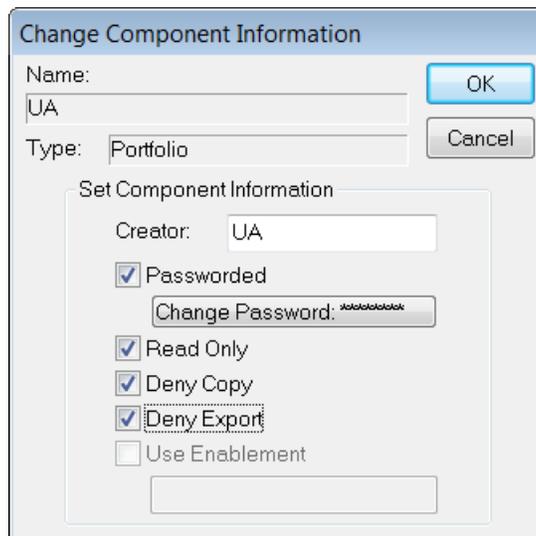
Dependencies:
BAVolCr.AskVol^
BAVolCr.BidVol^

Type:

Used By:
1065.BGCantor 10-year Intraday Chart
1072.BrokerTec 10-year Intraday Chart

To change component information, including password

1. Click the **System** button, point to **Components**, then click **View/Change Component Info**.
2. Select the component to change.
3. Click the **Change Component Info** button to open the **Change Component Information** window.



The "Change Component Information" dialog box is shown. It has a title bar with the text "Change Component Information". Below the title bar, there are two input fields: "Name:" with the value "UA" and "Type:" with the value "Portfolio". To the right of these fields are "OK" and "Cancel" buttons. Below these is a section titled "Set Component Information" which contains several options: "Creator:" with the value "UA", a checked checkbox for "Passworded" with a "Change Password:" button next to it, checked checkboxes for "Read Only", "Deny Copy", and "Deny Export", and an unchecked checkbox for "Use Enablement". There is also an empty input field at the bottom of this section.

4. The component is password-protected, you'll need to enter the password first.



The "Specify Component Password" dialog box is shown. It has a title bar with the text "Specify Component Password". Below the title bar, there is a text box containing the message: "The information that you've requested to modify is password protected. Please specify the password." To the right of this text box are "OK" and "Cancel" buttons. Below the text box is a "Password:" label followed by an empty input field. At the bottom, there is an unchecked checkbox labeled "Add password to list of known Component passwords".

- To set a password, select **Passworded** to open the **Set Password** window, and type the password.



The image shows a 'Set Password' dialog box. It has a title bar 'Set Password'. Inside, there is a text box with the message: 'You've requested to set a password. Please type in the new password twice.' To the right of this text box are 'OK' and 'Cancel' buttons. Below this is a warning box: 'WARNING: Please be careful not to lose your password. CQG support can not unlock passworded items.' At the bottom, there are two password input fields. The first is labeled 'New Password:' and the second is labeled 'New Password Again:'. Both fields contain ten black dots representing masked characters.

Remove the password requirement by clearing the **Passworded** check box.

Change the password by clicking the **Change Password** button:



The image shows a 'Passworded' checkbox with a checkmark, and a 'Change Password' button with a masked password field.

- Select **Read Only** to limit others to viewing the component only. **Passworded** must be selected for this option to be available.
- Select **Deny Copy** to prohibit others from copying the component. **Read Only** must be selected for this option to be available. When this option is selected, you can hide the formula on the Define User Formulas window.
- Select **Deny Export** to prohibit others from exporting the component to another system. **Read Only** must be selected for this option to be available.
- Select **Use Enablement** to force others to be enabled for access to the component. Contact CQG customer support for more information about this option.

To store component passwords

Several components in CQG can be protected with passwords. You must enter the password every time you want to edit or delete these password-protected components. The passwords added here are stored, so that you don't have to enter them as you work.

1. Click the **System** button, point to **Components**, then click **Add Component Passwords**.
2. Type a password in the field.
3. Either click the **Add** button or **ENTER**.
4. When you are finished adding passwords, click **Close**.

This image shows that three passwords have been added and a fourth has just been typed:



To clear stored component passwords

Please see "[To store component passwords](#)" on page 91 to understand the passwords that are included in the count of this window.

1. Click the **System** button, point to **Components**, then click **Remove Component Passwords**.



2. Click the **Remove Passwords** button. All passwords are removed.

The Status Windows

The Status windows provide a way for you to view the status of your CQG IC system, real-time data status, resources, enablements, and standard and optional services. You can see which news services you are subscribed to, which quotes you received delayed, and which North American and world exchanges you receive data from.

Opening Status Windows

Click the **Status** button on the toolbar and then select the window you want to open. Click **Other** to expand the list to include North American Exchanges, World Exchanges, News enablements, and Delayed Quotes.

If the button is not displayed, then click the **More** button, and then click **System Status**.

You can also click the **System** button and then click either **Display System Status** or **Display Real-Time Data Status**.

You can also press **ALT + CTRL + S**.

To add the **Status** button to the toolbar:

1. Click the **Setup** button.
2. Select **Customize Toolbar**. This displays the Toolbar Manager window.
3. Click the >>> button in the **Add/Remove** column in the **Chart, Quote, News...** row.
4. Click **Status** in the button column.
5. Click the **Close** buttons on the Customize Application Toolbar and Toolbar Manager windows.

The Status Toolbar

The Status toolbar buttons make it easy for you to move from one status window to another. You can also right-click the **System Status** window title bar or right-click the **System** button to choose the status window from the list of available windows.

Sys button

Changes the status window to a System Status window.

Res button

Changes the status window to a Resource Status window.

Enable button

Changes the status window to a Enablements window.

NoChSe button

Changes the status window to a No Charge Services window.

OptSer button

Changes the status window to a Optional Services window.

ExNoAm button

Changes the status window to a North American Exchanges window.

WorExc button

Changes the status window to a World Exchanges window.

News button

Changes the status window to a News enablements window.

DelQuo button

Changes the status window to a Delayed Quotes window.

Status Windows

System Status

This window displays all relevant system information.

The **Serial Number** is also referred to as your system number. This number is important, as CQG Customer Support will need it to assist you with questions about your system status.

The **Software Version** indicates which release of CQG IC software you are currently using along with the date it was made available (**Revision Date**) and the date it was installed (**Installation Date**). The **Server Version** is listed also.

If data was missed, it will be indicated on this window (**Data Line Packets Missed**).

The **Server Response Time** indicates how long it takes for the system to send a message to the bar server and receive a response.

Real-Time Data Status

This window displays data status in real-time.

Resources Status

This window displays data regarding your version of CQG and system utilization factors.

Item	Description
Serial Number	Your system number.
Software Version	CQG IC version currently running.
Bytes Allocated	Primary number of bytes allocated for CQG.
OS Bytes Allocated	Total number of bytes allocated for CQG including a buffer of excess bytes.
Free % GDI Resources	The resources used to draw on the screen. If this number falls below 20, you should reboot your system.
Free % User Resources	The resources used to draw on the screen. If this number falls below 20, you should reboot your system.
System Performance	The time it takes to process a quote (in milliseconds)
Free % Physical Memory	The percentage of memory not being used.
Total Physical Memory	The total amount of RAM in the system.

Item	Description
News Database	Bytes used to store the News database.
News Cache	Bytes used to store the News cache.
Time & Sales Cache	Bytes used to store the Time & Sales cache.
Time & Sales	Bytes used to store the Time & Sales data.
Fixed Services	Bytes used to store the fixed services.
Master Table	Bytes used to store the master table data.
Commodities	Total number of commodities on the system.
Contracts	Number of contracts displayed since the system was restarted.
Lead Options	Total number of lead options. Represents one lead option per month per commodity for each optionable month.
Sessions	The total number of sessions for each entity below.

Enablenents

This list of CQG enablements indicates the features your system is enabled for with an X.

No Charge Services

This list of CQG gratis services indicates the services your system is enabled for with an X.

Optional Services

This list of CQG optional services indicates the services your system is enabled for with an X.

North American Exchanges

This list of North American exchanges offered in CQG IC indicates the exchanges your system is enabled for with an X.

World Exchanges

This list of world exchanges offered in CQG IC indicates the exchanges your system is enabled for with an X.

News Services

This list of CQG news services indicates the services your system is enabled for with an X.

Delayed Quotes

If your need for up-to-the-minute quotes is not imperative, CQG offers delayed quotes.

This list of delayed data indicates the data your system receives with an X.

Missing Services Report

If you are on a network, you can view the services you have recently acquired or lost.

Right-click the title bar of a status window, and then click **Missing Services Report**.

The **Your Services Changed** window shows the state of any pooled services. It will be empty if there are no pooled services.

This window is updated only when you add or delete services.

Message Center

CQG offers a Message Center for reading and managing messages from CQG.

The screenshot shows the CQG Message Center window with the following components:

- Window Title:** Message Center (1 unread)
- Navigation:** Urgent, All (1), CQG Log (1), CQG Messages, Archived Messages.
- Actions:** Delete All, Delete, Live Chat, Mark as Unread, Actions.
- Message List:**

Type	Subject	Received
	Re: Broadcast Messaging Server connection error	3/10/2009 11:03 ...
	Broadcast Messaging Server connection error	3/10/2009 11:02 AM
	Only one Volume Profile study can be applied.	3/10/2009 10:32 AM
	Your New Screen Resolution is 1280x770. The Layout May ...	3/10/2009 9:46 AM
	Your Pages Were Saved at a Screen Resolution of 1280x994.	3/10/2009 9:46 AM
- Notification:**

Connection to broadcast messaging server is reestablished. Broadcast messages are accessible.

These error, warning, and information messages communicate important system information, including technical issues, scheduled maintenance, connection problems, data delays, updates, and problem resolution. The message will indicate what, if any, action is required.

Two indicators let you know that you have messages waiting:

- The [MSG Cntr](#) button on the [Communications Toolbar](#) blinks: 
- An icon is displayed on the status bar. Hover your mouse over the icon to see the message in the balloon:



Messages are also displayed as pop up windows like this:



Non-urgent messages will close automatically.

You will not receive messages that expired prior to your logging on to the system. Messages that have been read and not saved will not be displayed the next time you log on to CQG IC.

Drag the window borders to re-size the Message Center. You can also drag the columns.

Reading Messages

The Message Center button is on the **Communications** toolbar. The button changes based on whether you have unread messages waiting for you.

When you have unread messages, the button looks like this: . Otherwise, it looks like this: .

To read a message

1. Click the **Msgs** or **MSG Cntr** button.
2. Click the message you want to read.

The complete message is displayed at the bottom of the window.

You can also click the icon on the status bar when you have an unread message.



To filter messages

To view a subset of messages, such as archived messages, click the menu item on the left of the window.

- Click **Urgent** to display only urgent messages.
- Click **All** to hide and show **System Log** and **System Messages** menu items.
- Click **System Log** to display only system log messages.
- Click **System Messages** to display only broadcast messages.
- Click **Archived Messages** to display only archived messages.

To sort messages

Click the **Type**, **Subject**, or **Received** column header to sort by that column. Click once for ascending order and click again for descending order.

Managing Messages

To mark messages as read

1. Select the message or messages that you want to change. Messages that have not been read are bold.
2. Click the **Mark as Read** button at the top of the Message Center window.

In the same way, you can also mark messages as not read.

To delete messages

1. Select the message or messages you wish to delete.
Pressing **SHIFT** as you select message allows you to select consecutive messages. Pressing **CTRL** allows you to select any multiple messages. To select all messages, press **CTRL+A**.
2. Click **Delete** or **Delete All** at the top of the Message Center window.
3. Click **Delete** again on the confirmation window. In order to delete all messages at one time, you must select the **Don't ask me again** check box.

To turn off the confirmation, click **Actions**, then **click Delete All Confirmation** to remove the checkmark.

You can also use the **Delete** button on your keyboard. Once deleted, messages cannot be recovered.

To save messages

1. Select the message or messages you wish to save.
2. Click the **Actions** button at the top of the Message Center window.
3. Click **Archive**.

The messages that you save can be viewed by clicking **Archived Messages** in the message list on the left of the Message Center window.

Sending and Printing Messages

To send a message via IM

1. Click the message you want to send. You can IM only one message at a time, but you can e-mail multiple messages.
2. Click the **Actions** button at the top of the Message Center window.
3. Click **Send via IM**.
4. Click a contact name. The IM message automatically includes the message text. You can also add additional text to the IM.
5. Click **Send**.

To send a message via e-mail

1. Click the message or messages you want to send.
2. Click the **Actions** button at the top of the Message Center window.
3. Click **Send via Email**. An e-mail message that includes the message text opens. You can edit that e-mail before sending it.

To print messages

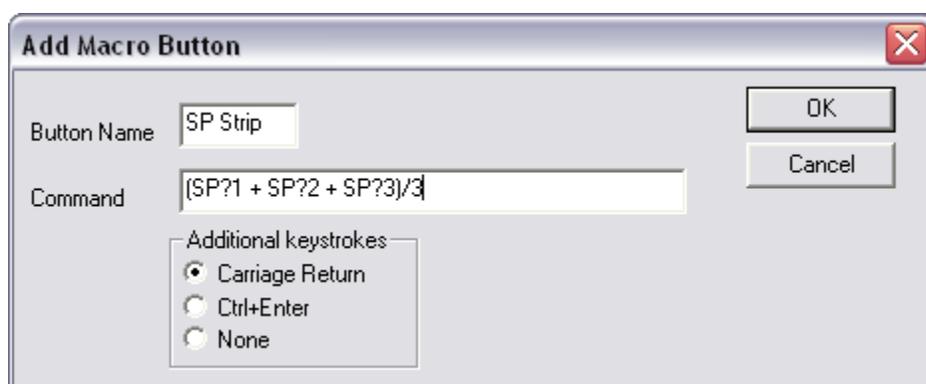
1. Click the message or messages that you want to print.
2. Click the **Actions** button at the top of the Message Center window.
3. Click **Print**. The default print manager opens.
4. Choose the print settings and click **OK**.

Creating Macros

Macros save commands to a named location so you can reuse the commands later, without re-entering them. If you have a repetitive task to perform, a macro might be a good way to perform that task.

For example, to facilitate viewing a chart on a strip consisting of the 3 near-term S&P 500 futures contracts, you could create a macro.

To create a macro



1. Click the **Setup** button.
2. Select **Customize Toolbar**.
3. Select **Add/Remove** button in the Macros row.
4. Click **New**.
5. Enter a button name in the Button Name box.
6. Enter the command represented by the button.
7. Select any additional keystrokes: **Carriage Return**, **Ctrl + Enter** (for entering data in a quote spreadsheet), or **None**.

Entering Symbols in CQG

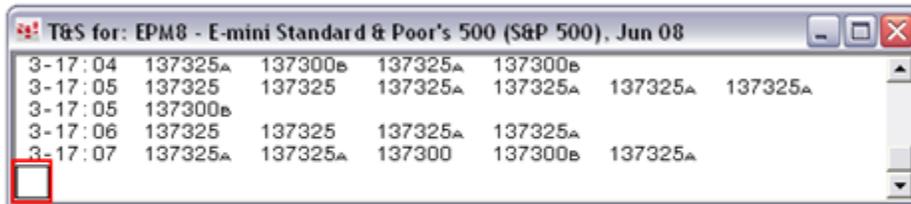
The following sections explain the how to enter symbols in CQG IC applications and detail the format of symbols for particular commodities. Based on your symbol settings in System Preferences|tag=Setting Symbol Preferences, you may be able to omit the type indicator (F., X., S., and T.) from the symbol.

Entering any symbol in lower case letters displays the inverse (1/instrument value) value.

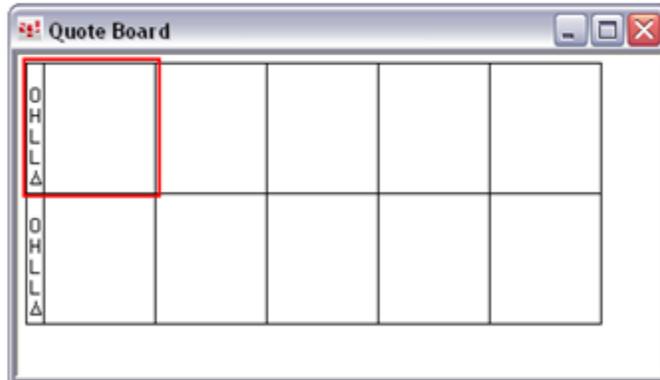
Entry Fields

Symbols are entered either in the entry field at the top or bottom of a window or directly into a field.

Entry field at top of options window



Entry field at bottom of Time & Sales



Direct entry field on Quote Board

Entering Futures

The format for futures is: **F.<symbol><month code><year>**

Month codes:

F	January	N	July
G	February	Q	August
H	March	U	September
J	April	V	October
K	May	X	November
M	June	Z	December

For currently traded (non-expired) contracts, the lead digit of the year can be omitted, e.g. USAZ9.

Example: SPU09 = September 2009 S&P 500 futures contract

For the most active futures contract, type the symbol and ?.

For the first non-expired futures contract, type the symbol and ?1. For the second non-expired futures contract, type the symbol followed by ?2. For the seventh non-expired futures contract, type the symbol followed by ?7. Follow this pattern for all numbers

Symbol entry connects with commodity symbols before contracts. Therefore, entering SF will display the lead month for Swiss Francs, rather than January soybeans. To get the soybean chart, you would need to type in the year (SF9, for example).

Entering Synthetic Spreads

Spreads can be entered in either extended or common notation. For example:

- common notation: EP-ENQ
- extended notation: SPREAD(EP-ENQ,L1)
- common notation: EP-ENQ*2
- extended notation: SPREAD(EP-ENQ*2, CUR, 2.5)

Both formats can be used for QFormulas.

Spread extended notation format: **SPREAD (<CQG expression>, <calculation mode>, <tick size>, <trading ratio>, <BAT filter>, <rollover>)**

Parentheses should include everything in the spread equation that follows SPREAD.

Each component should be separated by a comma. If a component is not included in your spread equation, but the following component is, you should include a comma for the first component.

Spaces are optional.

CQG expression

The CQG expression names the symbols and the optional multipliers for the spread. Each element of the expression can consist of one symbol and one multiplier. The expression is required.

Calculation mode

The calculation mode identifies how you would like the spread calculated, either by currency or by legs.

The best ask and best bid quotes are converted into currency values by multiplying the contract size. Currency mode is indicated by "CUR" in the spread equation.

For example: S-SM

S

Size: 5000 bushels

Quoted in: cent per bushel

Tick size: 0.25

Tick val: 12.50 USD

SM

Size: 100 ton

Quoted in: USD per ton

Tick size: 0.10

Tick val: 10.00 USD

S	USD	SM	USD
565.75	28287.50	169.9	16990.00
565.50	28275.00	169.8	16980.00

Legs are indicated by "L" plus the leg number. L1 is the default value.

For example:

SPREAD (SMA * 0.022 + ZLE * 11 - ZSE, L3)

The spread is quoted in \$/bushel.

Assume Soybean Meal is trading at \$297.20/ton, Soybean Oil at \$.3340/pound, and Soybeans at \$9.565/bushel.

The spread is calculated as $(297.20 \times .022) + (.3340 \times 11) - 9.565 = \$.6474/\text{bushel}$.

Tick size

The tick size specifies the spread tick size. If all legs either have an equal tick size or are for the same contract, then the tick size is the spread tick size. If the tick size is not specified, then the spread tick size for leg mode is equal to the leg tick size.

Specify tick size in binary format as well as decimal format. These tick sizes are allowed:

1/2

1/4

1/8

1/16

1/32

1/64

1/128

1/256

1/512

1/1024

1/2048

1/2 1/64

1/8 1/32

1/4 1/32

1/2 1/32

For example, SPREAD (USA*2 - ENQ,, 1/4 1/32). Some of the smallest tick sizes must be entered manually, as they are not available in the tick size menu.

For currency mode, the tick size is the maximum common denominator of leg tick values or the minimum tick value if the maximum common denominator is not applicable. For example, for SPREAD (S-SM, CUR), the tick size is the maximum common denominator of 12.

Trading ratio

The trading ratio specifies the order quantity for each leg in this format: leg one : leg two : leg three. The default value is 1:1.

For example:

SPREAD (EP*2-ENQ,,,2:1)

SPREAD (SMA*0.022+ZLE*11-ZSE, L3,,10:11:9)

BAT Filter

Each leg has a BAT (Bid/Ask and Trade) filter. Select BA or T.

BA = specifies that bids and asks of the given leg are used for synthetic quotes calculation (default)

T = specifies that trades of the given leg are used for synthetic quotes calculation

Separate the filter for each leg with a colon.

If the leg has no bid/ask info, trades are used regardless of the BAT filter setting.

Rollover

If turned on, when one leg expires, all legs roll over to the same month. Select 0 or 1.

0 = same month rollover is turned off (default)

1 = same month rollover is turned on

Entering Cash, Currencies, Indices, Reports

The format for cash, currencies, indices, and reports is: **X.<symbol>**

Example: X.TPC5 = S&P/Toronto 60 Index

Entering Rolling Strips

The format is: **(SP?1 + SP?2 + SP?3)/3**

A rolling strip is the average price for a series of contracts where the composition of the series is adjusted as contracts expire. For example, in February ?1, ?2, and ?3 would indicate the months of March, June, and September. In April, ?1, ?2, and ?3 would indicate the months of the June, September and December.

You can average as many contracts as you want.

Rolling strips are typically used with futures and cash.

Entering Stocks

The format for stocks is: **S.<symbol>**

Example: S.MSFT = Microsoft

Entering Fixed Income

The format for fixed income is: **T.<symbol>**

Example: T.BUSP02 = BrokerTec Benchmarks

Entering Options

The format for options on futures is: **C.<symbol><month code><year><strike price>** for calls and or **P.<symbol><month code><year><strike price>** for puts.

The strike price is 2-5 digits.

Example: C.SPZ081500 = December 2008 1500 call on the S&P 500 futures contract.

An alternate format is C.<symbol>_<month code><year>.<strike price> for calls and with P. for puts.

Example: C.SP_U8.1500 = September 2008 1500 call on the S&P 500 futures contract.

For **at the money for the nearby month**, type **C.** or **P.**, the symbol, and **?**.

For **at the money for some other month**, type **C.** or **P.**, the symbol, the month, the year, and **?** and then press CTRL+ENTER.

For **strikes for the most active month**, type **C.** or **P.** and the symbol and **?** and then press CTRL+ENTER.

On Options windows, you can enter the symbol only.

On the Quote SpreadSheet, you can enter C.<symbol><month code><year> for calls and with a P. for puts, and then press CTRL+ENTER to view data for a series of one option class.

Example: C.SPUZ = All September S&P 500 futures contracts.

Entering Bonds

The format for bonds is: **T.<country code>.<data source><interest rate or price><P(rice) or Y(ield)><maturity date>**

Data sources include:

C = BGCantor

B = BrokerTec

BW = Breakwater

G = GovPx (drop the first 0 in the interest rate)

T = Tullett

Example: T.US.B044P0412

In the Quote Spreadsheet only, pressing ENTER after the symbol entry will give you the current bond or swap. Pressing CTRL+ENTER will give you the full list for that maturity.

To find the most active or nth most active bond contract, use the ? wildcard followed by a number (n).

?0 returns to the most active contract. Subsequent contracts (?1, ?2, ?9) all expand in reverse order from the contract that preceded the most active contract to the top of the bond list (the oldest and least active contract).

Negative indexes, for example ?(-1), expand to show the contracts following the most active.

Bond Lists

Bond lists, lists of bond contracts with different maturity dates, are organized in reverse activity order, which means the most active contracts are at the bottom of the list, and the least active contracts are at the top.

Bond Alias

An alias is a short name for a bond contract. Normally, each bond list has one contract with an alias. The most active bond contract in CQG is the one that has an alias.

BrokerTec	Data Source	B	GovPx	Data Source	GPX
	Country Code	US		Maturity Year	5Y
	Maturity Year	20	GovPx	Country Code	US
Breakwater	Data Source	BW		Price	P
	Country Code	US		Maturity year	5Y
	Maturity Year	5			
BGCantor	Data Source	C			
	Country Code	DE			
	Maturity Year	20			

Always use P for aliases (not interchangeable with Y).

Swaps

Tullett	Data Source	T
	Country Code	DE
	Maturity Year	20
Tullett with BGCantor	Data Source	TC
	Country Code	DE
	Maturity Year	20

Entering Eurobond

The format for Eurobonds is: **<country code><interest rate>< P(rice) or Y(ield)><maturity date>**

Example: CA084P1208 = Canadian bond with an 8 ½% coupon that matures in December 2008 quoted in price data

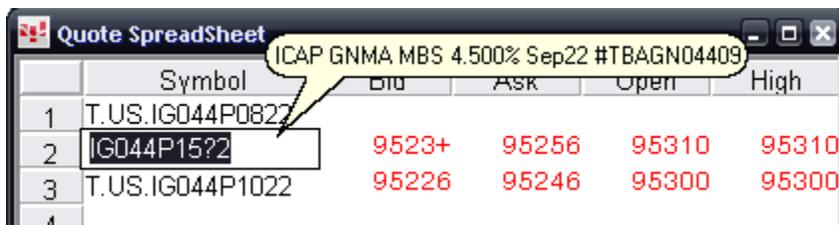
Entering Mortgage-Backed Securities (MBS)

COG's wildcard notation allows you to enter MBS symbols that are calculated and updated automatically each month. You are not required to enter the Fixed Income type parameter (T.) or the country abbreviation for MBS symbols.

Asterisk notation tells the system to provide MBS data for the current month.

Question mark notation tells the system to provide MBS data for the current, second, and third delivery months. For example, entering IF054P30?2 in August will give you the FNMA 5.5% TBA for 9/37. In September, that will automatically roll to the October offering.

Here, we want to see data for the GNMA 4.5% TBA for maturities for 8/22, 9/22, and 10/22.



	Symbol	Bid	Ask	Open	High
1	T.US.IG044P0822				
2	IG044P15?2	9523+	95256	95310	95310
3	T.US.IG044P1022	95226	95246	95300	95300
4					

Asterisk Notation

Asterisk notation looks like this:

T.US.<agency MBS><coupon rate><price or yield><maturity date>*

The Fixed Income type parameter (T.) and the country abbreviation (US) are optional.

Examples:

IG044P15* = IG044P0722

IG044P30* = IG044P0737

Agency MBS	Enter IM, IF, or IG. IM = FHMLC IF = FNMA IG = GNMA
Coupon rate	Enter a three digit number that ends with 0 for whole percents or 4 for half percents. For example, 040 = 4.0% 044 = 4.5%
Price or yield	Enter P or Y. P = price Y = yield
Maturity date	Enter 15 or 30 for the maturity date. 15 = 15-year 30 = 30-year

Question Mark Notation

Question mark notation looks like this:

T.US.< agency MBS >< coupon rate >< price or yield >< maturity date >?<N>

The Fixed Income type parameter (T.) and the country abbreviation (US) are optional.

Examples:

IG044P15?1 = IG044P0722

IG044P15?3 = IG044P0922

IG044P30?1 = IG044P0737

Agency MBS	Enter IM, IF, or IG. IM = FHMLC IF = FNMA IG = GNMA
Coupon rate	Enter a three digit number that ends with 0 for whole percents or 4 for half percents. For example, 040 = 4.0% 044 = 4.5%
Price or yield	Enter P or Y. P = price Y = yield
Maturity date	Enter 15 or 30 for the maturity date. 15 = 15-year 30 = 30-year
N	Enter a number (1-3) for the delivery month. 1 = current month 2 = current month plus one 3 = current month plus two

Supporting Documentation

CQG's [Customer Education](#) Web page offers these symbology documents:

Tradable Symbols

<http://www.cqg.com/Docs/Symbols.pdf>

Symbology for Exchange-Traded Strategies

<http://www.cqg.com/Docs/ExchangeTradedStrategies.pdf>

Symbol Search

Symbol Search provides a way for you to search for commodities and filter results by exchange, country, type (cash, currencies, futures, indices, options, stocks), and index.

An additional benefit of this updated tool is the ability to look up the exchange symbol (listed as source symbol).

This image shows the **Symbol Search** window with search at the top, filters on the left, and results on the right.

The screenshot shows the Symbol Search window with the search term 'eurodollar' entered. The search results table is as follows:

Symbol	Description	Exchange	Type	Source symbol	Volume
C.US.E01	Eurodollar Mid-Curve(1 year)(weekly)	CME on GLOBEX	Options	E01	0
C.US.E02	Eurodollar Mid-Curve(1 year)(weekly)	CME on GLOBEX	Options	E02	0
C.US.E03	Eurodollar Mid-Curve(1 year)(weekly)	CME on GLOBEX	Options	E03	0
C.US.E04	Eurodollar Mid-Curve(1 year)(weekly)	CME on GLOBEX	Options	E04	0
C.US.E05	Eurodollar Mid-Curve(1 year)(weekly)	CME on GLOBEX	Options	E05	0
C.US.E0T	Eurodollar TOMMI (Pit)	Chicago Mercantile Exchange	Options	E0T	0
C.US.ED	3 mo Eurodollar	Chicago Mercantile Exchange	Options	CE	333785
C.US.EDA	Eurodollar Mid-Curve (2 year)	Chicago Mercantile Exchange	Options	E2	40600
C.US.EDF	Eurodollar Mid-Curve (5 Year)	Chicago Mercantile Exchange	Options	E5	0
C.US.EDO	Eurodollar Mid-Curve (1 year)	Chicago Mercantile Exchange	Options	E0	161352
C.US.G1K	Eurodollar Mid-Curve(1 year)(weekly)	Chicago Mercantile Exchange	Options	1K	0
C.US.G2K	Eurodollar Mid-Curve(1 year)(weekly)	Chicago Mercantile Exchange	Options	2K	0
C.US.G4K	Eurodollar Mid-Curve(1 year)(weekly)	Chicago Mercantile Exchange	Options	G4K	0
C.US.GE	Eurodollar (Globex)	CME on GLOBEX	Options	GE	26318
C.US.GE0	EuroDollar Mid-Curve 1 year (Globex)	CME on GLOBEX	Options	GE0	5400
C.US.GE2	Eurodollar Mid-Curve 2 Year (Globex)	CME on GLOBEX	Options	GE2	0
C.US.GE5	Eurodollar Mid-Curve 5 Year (Globex)	CME on GLOBEX	Options	GE5	0
C.US.LFED	Three Month Eurodollar (CONNECT)	LIFFE Interest Rate Futures	Options	ED_	0
C.US.LFEDO	Eurodollar Midcurve (CONNECT)	LIFFE Interest Rate Futures	Options	EM_	0
C.US.TE0	Eurodollar TOMMI (Globex)	Chicago Mercantile Exchange	Options	TE0	0
F.US.E5B	Eurodollar 5-Year E-mini Bundle Futures	CME E Mini	Futures	E5B	0
F.US.ED	Eurodollar -Settlement	Chicago Mercantile Exchange	Futures	ED	3506287
F.US.EDA	Eurodollar (Globex)	CME on GLOBEX	Futures	GE	2385536
F.US.EDAA	Eurodollar -All sessions	Chicago Mercantile Exchange	Futures	ed	3245517
F.US.EDAB2	Eurodollar 2 Year Bundle	CME on GLOBEX	Futures	GE:FB_02Y_	14602
F.US.EDAB3	Eurodollar 3 Year Bundle	CME on GLOBEX	Futures	GE:FB_03Y_	4883
F.US.EDAB4	Eurodollar 4 Year Bundle	CME on GLOBEX	Futures	GE:FB_04Y_	546
F.US.EDAB5	Eurodollar 5 Year Bundle	CME on GLOBEX	Futures	GE:FB_05Y_	328
F.US.EDAC12	Eurodollar Condor Spread 12	CME on GLOBEX	Futures	GE:CF H9H0H1	0
F.US.EDAC3	Eurodollar Condor Spread 3	CME on GLOBEX	Futures	GE:CF H9M9U9	300
F.US.EDAC6	Eurodollar Condor Spread 6	CME on GLOBEX	Futures	GE:CF H9U9H0	44
F.US.EDAC9	Eurodollar Condor Spread 9	CME on GLOBEX	Futures	GE:CF H9Z9U0	0
F.US.EDAD12	Eurodollar Double Butterfly Spread 12	CME on GLOBEX	Futures	GE:DF H90H0H1	22
F.US.EDAD3	Eurodollar Double Butterfly Spread 3	CME on GLOBEX	Futures	GE:DF H9M9U9	2418

To open Symbol Search, click the **Symbols** button on the Utility toolbar. You can also right-click the **?** button and then click **Find a Symbol**.

Searching for Commodities

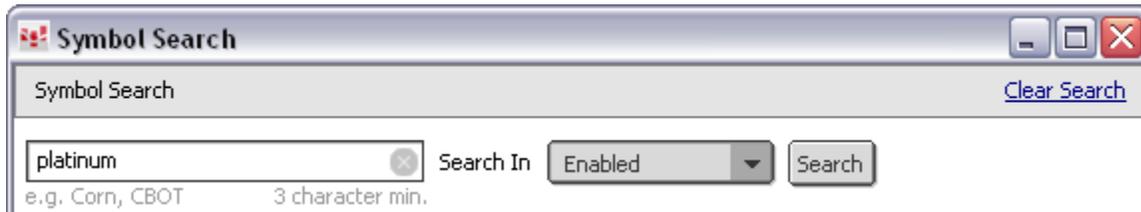
You can search for a commodity by entering the symbol, part of the description, the exchange, the type, or the exchange symbol.

In this image, notice that a search for RTS produces symbol, description, exchange, and source symbol results. The source symbol is the exchange symbol (as opposed to the CQG symbol).

Symbol	Description ▲	Exchange	Type	Source symbol
S.AU.QFXRA	QUICKFLIX RTS 21APR	Australian Stock Exchange	Stocks	QFXRA
F.US.FRN	ROSNEFT	RTS - FORTS	Futures	RN
X.US.ROSNS	Rosneft - Standard	RTS Equities	Cash	ROSN
C.US.FRNM	Rosneft Future-Style Options	RTS - FORTS	Options	
F.US.FRT	Rostelcom	RTS - FORTS	Futures	RT
S.RU.RTKM	RosTelecom	RTS Equities	Stocks	JK
S.RU.RTKMP	Rostelecom pref	RTS Equities	Stocks	JL
X.RU. RTSCR	RTS - Consumer products	RTS Equities	Indices	RCY
X.RU. RTSEU	RTS - ElectroEnergy	RTS Equities	Indices	REY
X.RU. RTSFN	RTS - Finance	RTS Equities	Indices	RFY
X.RU. RTSIN	RTS - Industry	RTS Equities	Indices	RNY
X.RU. RTSMM	RTS - Metals	RTS Equities	Indices	RMY
X.RU. RTSOG	RTS - Oil&Gas	RTS Equities	Indices	ROY
X.RU. RTSTL	RTS - Telecommunication	RTS Equities	Indices	RTY
F.US.FRI	RTS Index	RTS - FORTS	Futures	RI
C.US.FRI	RTS Index	RTS - FORTS	Options	RIM
X.RU. RTSI	RTS Index	RTS Equities	Indices	RIY
F.US.FRIOPT	RTS Index (IV Opt)	RTS - FORTS	Futures	friopt
X.RU. RTS...	RTS Standard Index	RTS Equities	Indices	RTS STD
F.US.FR5	RTS Standard Index Future	RTS - FORTS	Futures	RS
X.RU. RTSTIS	RTS Technical Index	RTS Equities	Cash	RTSTIS
X.RU. RTS2	RTS -2 Index	RTS Equities		RTS2

Please note that entering a full CQG symbol, such as F.US.EDA, results in a time out notice because the system interprets the period separator as a space. The system searches for "F" or "US" or "EDA," which results in too many records.

To search for symbols



1. Type the word or symbol you want to search for. (Do not enter a complete CQG symbol, such as F.US.EDA.)
2. Select **All** or **Enabled** in the **Search In** field. If you select **Enabled**, then only those exchanges you are enabled for are included in the results.
3. Click **Search**.

To clear the search results, click the **Clear Search** link at the top-right of the window.

Filtering Search Results

Search results can be filtered by exchange, country, type, or index.

Available filters [category: type (sub-type)]:

- **Exchange:** Over a hundred data sources.
- **Country:** Americas (North America, South America), Asia/Australia (Australia/Oceania, Central/South Asia, East/Pacific Asia, Middle East), and Europe (Austria, Belgium, Finland, France, Germany, Great Britain, Greece, Ireland, Italy, Netherlands, Portugal, Russia, Spain, Sweden, Switzerland, Turkey, and Ukraine).
- **Type:** Cash (Agriculture, Energy, Metals, Other), Currencies (Forwards, Other, Spot), Fixed Income (Caps, Debt, Floors, Interest Rate Swaps, Money Markets, Other), Futures (Agriculture, Currencies, Energy, Fixed Income, Indices, Metals, Other, Stocks), Indices (Commodity, Equity, Fixed Income, Other), Options (Agriculture, Currencies, Energy, Interest Rates, Metals, Other, Stocks), Reports (Agricultural, Economic, Other, Petroleum), and Stocks (Equities, Other).

"Other" is best defined by example: Other Eurodollar Cash results in bpciv, bppiv, caciv, capiv, etc. Other Corn Reports results in NTKC81D1, NTKC80D1, NTKC87D4, etc.
- **Index:** Commodity Indices, Economic Releases and Other Statistics, and Equity Indices.

To filter search results

Browse [Clear Filter](#)

Exchange Country Type Index

Exchange x

- Brazil BM&F
- CBOT on Globex
- Chicago Board of Trade
- Dow & Key Indices
- Euronext Cash Last Price
- LIFFE Commodities
- Minneapolis Grain Exchange
- Need to Know News
- New York Stock Exchange
- NYSE Amex
- Standard & Poor's Indexes
- Tokyo Grain Exchange

Display All

1. Click the **Exchange**, **Country**, **Type**, or **Index** tab to display filter options for that category.
2. Select the check boxes for each item to include in the search. On the **Type** window, first click the type, and then select a sub-type. For example, a search for "Eurodollar" results in **Cash**, **Futures**, and **Options** (type), then **Currencies**, **Fixed Income**, and **Other** (sub-type of futures).

By default, only available filters are displayed. For example, you could not filter "Eurodollar" by "Stocks," so that option is not listed. To list all filter options, including those that are unavailable, select the **Display All** check box.

To clear the current filters, click the **Clear Filter** link above the filter categories.

Browsing for Symbols

You can also look for symbols without entering a search value.

For example, selecting Australia/Oceania (Country) lists all of the symbols for AFMA, ASX Futures, Australian Stock Exchange, NZ Futures & Options, and Sydney Futures Exchange.

Selecting Baltic (Exchange) lists all of the symbols on the Baltic Exchange.

Used in conjunction with the [export](#) function, browsing in this way is a quick and easy method for building portfolios.

Viewing Symbol Search Results

The symbol, description, exchange, type, source symbol (exchange symbol), and volume are displayed for each search term match.

Results						353 results
Symbol	Description	Exchange ▲	Type	Source symbol	Volume	▲
S.AU.TRG	Treasury Group Limited	Australian Stock Exchange	Stocks	TRG	77	
T.US.CT023P0127	BGCantor US Treasury Bill 22Jun06	BGCantor UST	Fixed Income	912810P51C	0	
F.US.TYA	10 Yr US Treasury Notes (Globex)	CBOT on Globex	Futures	ZN_	1284101	
F.US.FVA	5 Yr US Treasury Notes (Globex)	CBOT on Globex	Futures	ZF_	588144	
F.US.TUA	2 Yr US Treasury Notes (Globex)	CBOT on Globex	Futures	ZT_	334876	
F.US.USA	30 Yr US Treasury Bonds (Globex)	CBOT on Globex	Futures	ZB_	305696	
C.US.TYA	10 Yr US Treasury Notes (Globex)	CBOT on Globex	Options	OZN	50498	
C.US.USA	30 Yr US Treasury Bonds (Globex)	CBOT on Globex	Options	OZB	11998	
F.US.TUAS1	2 Yr US Treasury Notes Calendar Spread	CBOT on Globex	Futures	ZT_E1	3011	
C.US.FVA	5 Yr US Treasury Notes (Globex)	CBOT on Globex	Options	OZF	2308	
C.US.TUA	2 Yr US Treasury Notes (Globex)	CBOT on Globex	Options	OZT	1465	
F.US.Z3N	3 Yr US Treasury Notes (Globex)	CBOT on Globex	Futures	Z3N	0	
F.US.Z3NS1	3 Yr US Treasury Notes Calendar Spread 1	CBOT on Globex	Futures	Z3N_E3	0	
F.US.Z3NS4	3 Yr US Treasury Notes Calendar Spread 4	CBOT on Globex	Futures	Z3N_E12	0	
F.US.Z3NS3	3 Yr US Treasury Note Calendar Spread 3	CBOT on Globex	Futures	Z3N_E9	0	
F.US.Z3NS2	3 Yr US Treasury Notes Calendar Spread 2	CBOT on Globex	Futures	Z3N_E6	0	
> F.US.TY	10 Yr US Treasury Notes - Settlement	Chicago Board of Trade	Futures	TY_	1348842	
F.US.TYAA	10 Yr US Treasury Notes - Combined	Chicago Board of Trade	Futures	ty_	1348842	
F.US.FV	5 Yr US Treasury Notes - Settlement	Chicago Board of Trade	Futures	FV_	606877	
F.US.FVAA	5 Yr US Treasury Notes - Combined	Chicago Board of Trade	Futures	fv	606877	
F.US.TU	2 Yr US Treasury Notes - Settlement	Chicago Board of Trade	Futures	TU_	367245	
F.US.TUAA	2 Yr US Treasury Notes - Combined	Chicago Board of Trade	Futures	tu_	367245	
F.US.US	30 Yr US Treasury Bonds - Settlement	Chicago Board of Trade	Futures	US_	314360	
F.US.USAA	30 Yr US Treasury Bonds - Combined	Chicago Board of Trade	Futures	us_	314360	
C.US.US	Treasury Bond	Chicago Board of Trade	Options	CG_	25438	
C.US.TU	2 Year Treasury Note Options	Chicago Board of Trade	Options	TUC	13733	

Notice that some results are highlighted. In this image, delayed quotes are highlighted yellow, contracts not found (typically because you are not enabled for them) are gray, and the selected row is blue. Colors are selected in [Quote Colors](#).

To size columns



Symbol	Description
US.Z3NS2	3 Yr US Treasury
US.TY	10 Yr US Treasury
US.TYAA	10 Yr US Treasury Notes - Combined

1. Right-click a column heading.
2. Click **Size Column to Fit** to size only that column. Click **Size All Columns to Fit** to size all columns at one time.

To sort columns

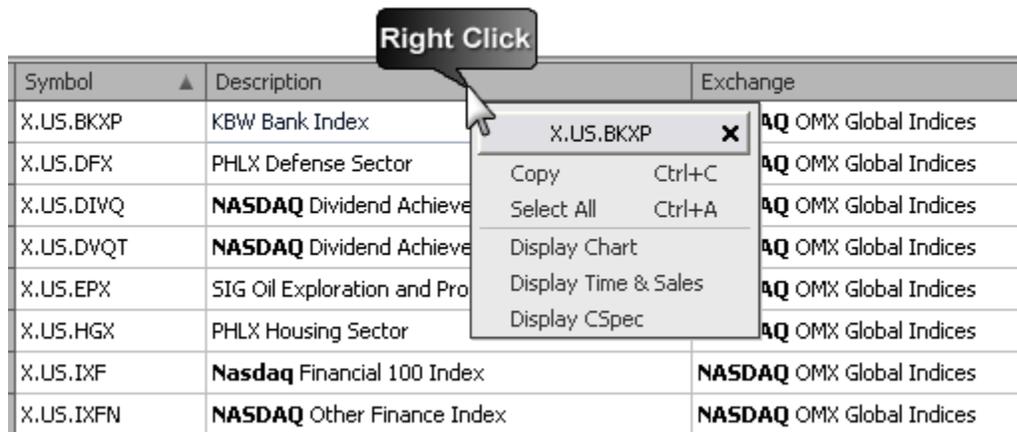
Click a column heading once to sort in ascending order (arrow up). Click it again to sort in descending order (arrow down).

Exchanges in ascending order:

Symbol in descending order:

To export results of a search

Search results can be exported to another application, such as a spreadsheet. This is one way to quickly export a portfolio of symbols, such as all NASDAQ OMX Global Indices.



Symbol	Description	Exchange
X.US.BKXP	KBW Bank Index	NASDAQ OMX Global Indices
X.US.DFX	PHLX Defense Sector	NASDAQ OMX Global Indices
X.US.DIVQ	NASDAQ Dividend Achieve	NASDAQ OMX Global Indices
X.US.DVQT	NASDAQ Dividend Achieve	NASDAQ OMX Global Indices
X.US.EPX	SIG Oil Exploration and Pro	NASDAQ OMX Global Indices
X.US.HGX	PHLX Housing Sector	NASDAQ OMX Global Indices
X.US.IXF	Nasdaq Financial 100 Index	NASDAQ OMX Global Indices
X.US.IXFN	NASDAQ Other Finance Index	NASDAQ OMX Global Indices

1. Right-click anywhere on the results.
2. Click **Select All**.
3. Right-click again.

4. Click **Copy**.
5. Move to the application you want to copy into, such as Microsoft Excel, and paste the results.

You can also use standard shortcuts, such as CTRL+A, CTRL+C, and CTRL+V.

Results look like this in Excel:

	A	B	C	D	E	F
1	X.US.BKXP	KBW Bank Index	NASDAQ OMX Global Indices	Indices	BKX	0
2	X.US.DFX	PHLX Defense Sector	NASDAQ OMX Global Indices	Indices	DFX	0
3	X.US.DIVQ	NASDAQ Dividend Achievers	NASDAQ OMX Global Indices	Indices	DIVQ	0
4	X.US.DVQT	NASDAQ Dividend Achievers Total Return	NASDAQ OMX Global Indices	Indices	DVQT	0
5	X.US.EPX	SIG Oil Exploration and Production Index	NASDAQ OMX Global Indices	Indices	EPX	0
6	X.US.HGX	PHLX Housing Sector	NASDAQ OMX Global Indices	Indices	HGX	0
7	X.US.IXF	Nasdaq Financial 100 Index	NASDAQ OMX Global Indices	Indices	IXF	0
8	X.US.IXFN	NASDAQ Other Finance Index	NASDAQ OMX Global Indices	Indices	IXFN	0
9	X.US.IXIS	NASDAQ Insurance Index	NASDAQ OMX Global Indices	Indices	IXIS	0
10	X.US.IXTC	NASDAQ Telecommunications Index	NASDAQ OMX Global Indices	Indices	IXTC	0
11	X.US.IXTR	NASDAQ Transportation Index	NASDAQ OMX Global Indices	Indices	IXTR	0
12	X.US.MXZ	PHLX Medical Device Sector	NASDAQ OMX Global Indices	Cash	MXZ	0
13	X.US.NBI	NASDAQ Biotechnology	NASDAQ OMX Global Indices	Indices	NBI	0
14	X.US.NDX	NASDAQ-100 Index	NASDAQ OMX Global Indices	Indices	NDX	0
15	X.US.NDXT	NASDAQ 100 Technology Sector Index	NASDAQ OMX Global Indices	Indices	NDXT	0
16	X.US.NDXX	NASDAQ 100 Ex-Tech Sector Index	NASDAQ OMX Global Indices	Indices	NDXX	0
17	X.US.NHC	Nasdaq Health Care Index	NASDAQ OMX Global Indices	Indices	IXHC	0
18	X.US.NQC5	Nasdaq Composite Index	NASDAQ OMX Global Indices	Indices	enc5	0
19	X.US.NQGS	Nasdaq Global Select Market Composite	NASDAQ OMX Global Indices	Indices	NQGS	0
20	X.US.NXTQ	Nasdaq Q 50 Index	NASDAQ OMX Global Indices	Indices	NXTQ	0

To open another application from Symbol Search

Open a chart, a Time & Sales window, or a Contract Specification (CSpec) window from Symbol Search.

1. Right-click on the symbol row for the symbol you want data for.
2. Click **Display Chart**, **Display Time & Sales**, or **Display CSpec**.

You can also double-click a commodity to open a chart for that symbol. Note that if you already have a chart open, the symbol changes, but studies and conditions remain.

Contract Specifications

The Contract Specifications (CSpec) window provides detailed contract information for products in the futures, cash, currencies, indices, government reports, stocks, and fixed income markets.

Description

Exchange

Symbol

Exchange abbreviation

Properties			
Contract Size:	50 X S&P 500 Index	Limit Move:	Overnight: 5% Day: 10% / 20
Quoted In:	Terms of the S&P 500 Stock I	Initial Margin:	4375
Tick Size:	0.25	Maintenance:	3500
Tick Value:	12.5 USD		

Trading Hours For									
05/28/12 - 01/01/13									
		Chicago		New York		London		Tokyo	
Name	Open	Close	Open	Close	Open	Close	Open	Close	
Globex Night	15:30	08:30	16:30	09:30	21:30	14:30	06:30	23:30	
Globex Day	08:30	15:15	09:30	16:15	14:30	21:15	23:30	06:15	

Details

Months: Jun12, Sep12, Dec12

First Notice: []

Expiration: 06/15/12

Notes: CME Globex Nightly Maintenance Period is from 16:30 to 17:00 CT Nightly (excluding Sundays)

The four drop down menus (description, symbol, exchange, and exchange abbreviation) at the top of the window are used [to search for symbols](#). Note that the Stocks window also has an alphabetical search:

Futures Cash Currencies Indices Reports Stocks Fixed Income

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

The exchange menu lists all of the exchanges available through COG IC. The exchange abbreviation menu lists alternate names for those exchanges. For example, exchange Kansas City Board of Trade is abbreviated as KCBOT.

The symbol menu lists all of the symbols associated with that exchange. The description menu lists those symbols by name. For example, symbol DD is the DAX Index.

The four areas below the drop down menus (**Properties**, **Trading Hours For**, **Details**, and **Notes**) provide the [specifications](#) for the selected symbol.

If you drag the borders of the CSpec window, you'll notice that the CSpec itself does not change its size even though the window does. To return the CSpec to its previous state, right-click the **Setup** button, then click **Size to Fit**.

To open CSpec, click the **CSpec** button on the toolbar. If the button is not displayed, click the **More** button, and then click **Contract Spec**.

Contract Specs: Properties, Trading Hours, Details, Notes

These four provide the specifications for the selected symbol. You can hide properties, trading hours, and details in [preferences](#).

Properties

For futures, this area lists:

- Contract Size
- Quoted In (for example, EUR 25 per DAX Index Point for DD)
- Tick Size
- Tick Value (if unavailable, currency defaults to exchange currency)
- Limit Move (maximum daily move)
- Initial Margin (minimum, individual brokers may have different requirements)
- Maintenance (minimum margin, individual brokers may have different requirements)

For fixed income, this area lists:

- Symbol
- Coupon
- Maturity
- Call Month
- Tick Size
- Tick Value

For other markets, this area is not used.

Trading Hours

Hours are listed by range and by date for special situations, such as a holiday or contract expiration. Use the drop down menu to change dates.

Hours include current day and session information (for example, Globex Night and Globex Day for EP).

For stocks, the hours are for the primary exchange.

You can change the time zones in [preferences](#).

Details

For futures, this area lists:

- Months
- First Notice
- Expiration

For all other markets, including currencies, this area is not used.

Notes

Notes are entered on a an as-needed basis by CQG. For example:

EP on CME

Notes

CME Globex Nightly Maintenance Period is from 16:30 to 17:00 CT Nightly (excluding Sundays)

DI1 on Brazil BM&F

Notes

Price Unit = 100,000 BRL x Int Rt. of ID

KOS on Korean Exchange Futures

Notes

Tick Value multiplier is KRW 500,000. eg
 $0.05 * 500,000 = \text{KRW } 25,000$

CSpec Toolbar

The CSpec toolbar has these buttons:

Find button

Click this button to open **Symbol Search**.

Option button

Click this button to switch from underlying futures symbol and options.

Under button

Click this button to switch from options to underlying futures symbol.

<<>> button

Click this button to scroll through the list of symbols for the exchange selected on the CSpec window.

Setting CSpec Preferences

To open the preferences window, right-click the **Setup** button, then click **Preferences**.

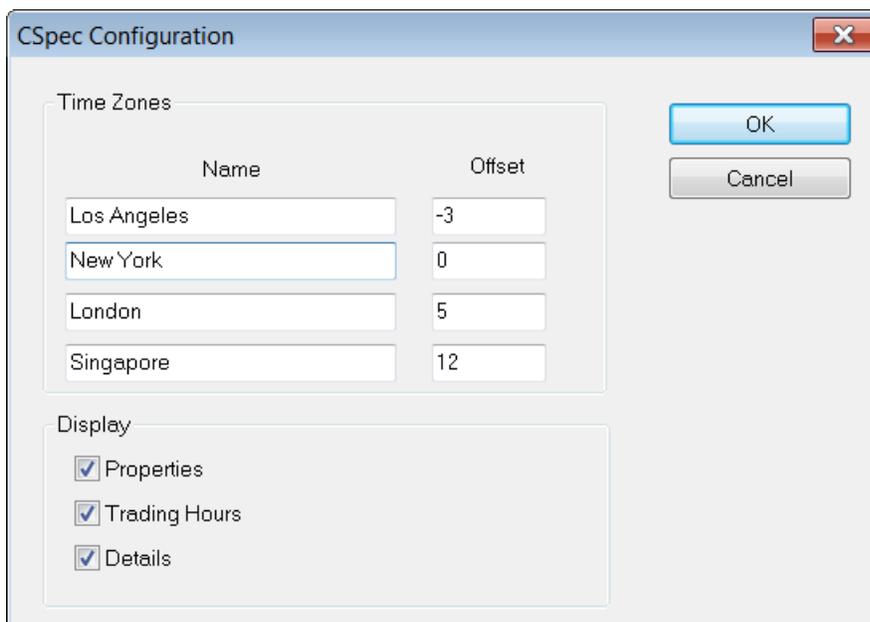
These preferences control the display of time zones and CSpec components.

Time Zones

Default time zones are Chicago, New York, London, and Tokyo.

The offset indicates the difference in time between locations.

Type new city names and offsets to change the locations displayed in the **Trading Hours For** area.



The image shows a dialog box titled "CSpec Configuration" with a close button (X) in the top right corner. The dialog is divided into two main sections: "Time Zones" and "Display".

The "Time Zones" section contains a table with two columns: "Name" and "Offset". There are four rows of input fields:

Name	Offset
Los Angeles	-3
New York	0
London	5
Singapore	12

To the right of the table are two buttons: "OK" (highlighted in blue) and "Cancel".

The "Display" section contains three checked checkboxes:

- Properties
- Trading Hours
- Details

Display

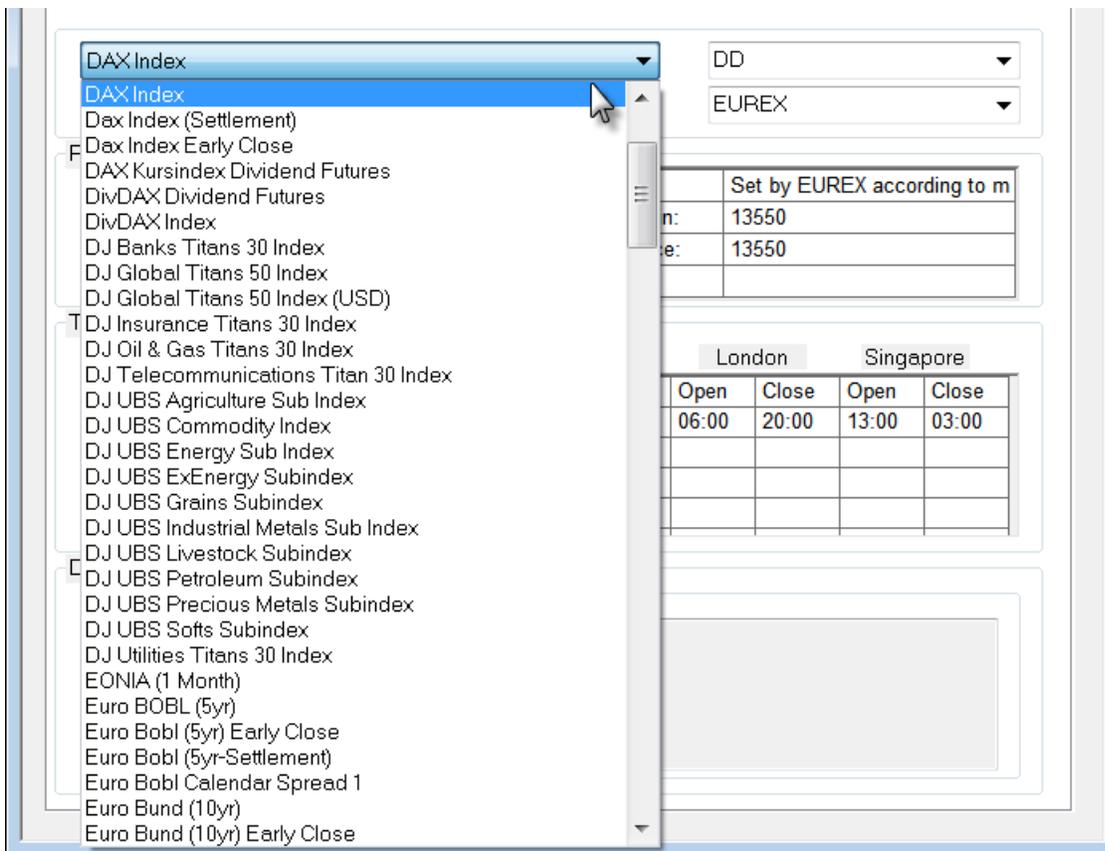
Clear the check boxes to hide the **Properties**, **Trading Hours For**, and **Details** areas on the CSpec window.

Searching for Symbols

Click a tab to move between markets:



Click an arrow to open the description, symbol, exchange, or exchange abbreviation menu, then click a menu item. The CSpec window updates automatically. You can also type a symbol or exchange abbreviation to change the selection. Type the first letter of the description or exchange to move up and down the menu.



Click the arrow to switch the time frame for trading hours.

Trading Hours For

03/25/12 - 01/01/13

Los		New York		London		Singapore	
Open	Close	Open	Close	Open	Close	Open	Close
02:00	12:00	01:00	15:00	06:00	20:00	13:00	03:00

Scroll the list of trading months.

Details

Months

Sep12
Dec12
Mar13

First Notice:

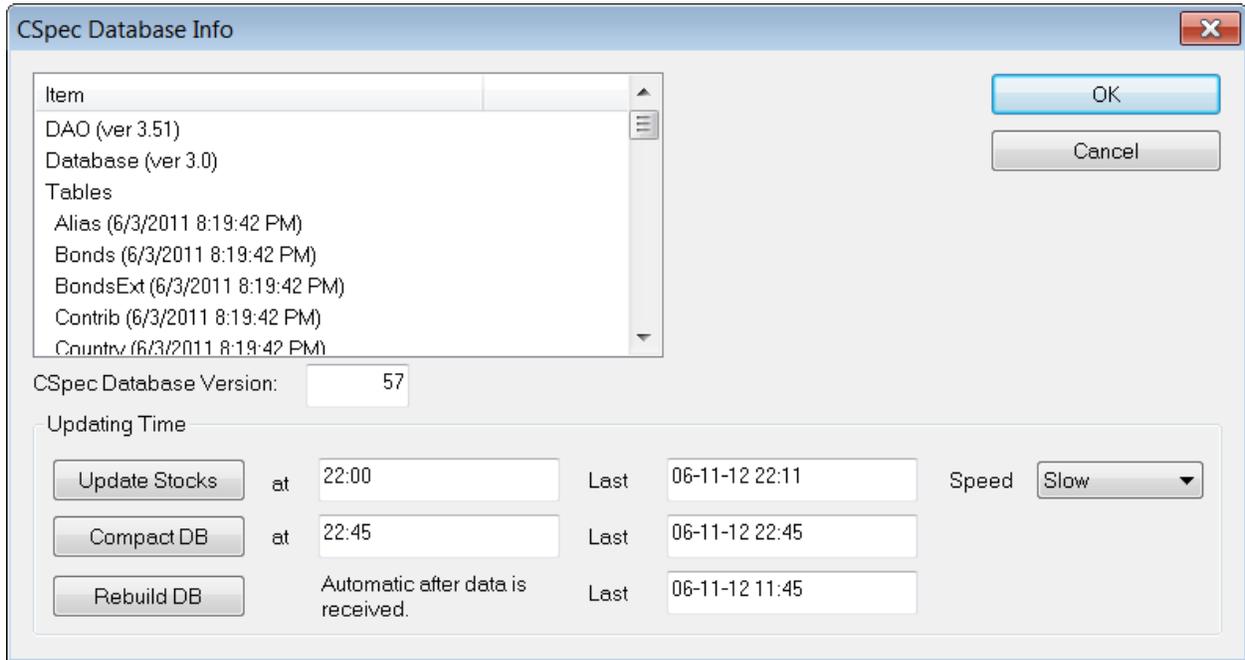
Expiration: 03/15/13

Notes

Refreshing CSpec Data

There may be instances when you wish to refresh the CSpec data. To do so, right-click the **Setup** button, then click **Get Latest Data**.

For a more in depth look at data when you expect that data has become corrupt, right-click the **Setup** button, then click **DB Info**. The CSpec Database Info page opens.



The **Item** window and **CSpec Database Version** provide important contract database information that can be used to help CQG troubleshoot data issues.

For immediate changes:

- click the **Update Stocks** button to update the stock data
- click the **Compact DB** button to compress the database data
- click the **Rebuild DB** button to rebuild the database

Otherwise, enter a time to update or compact the database. This change is helpful if you notice the database refreshing at an inconvenient time for you.

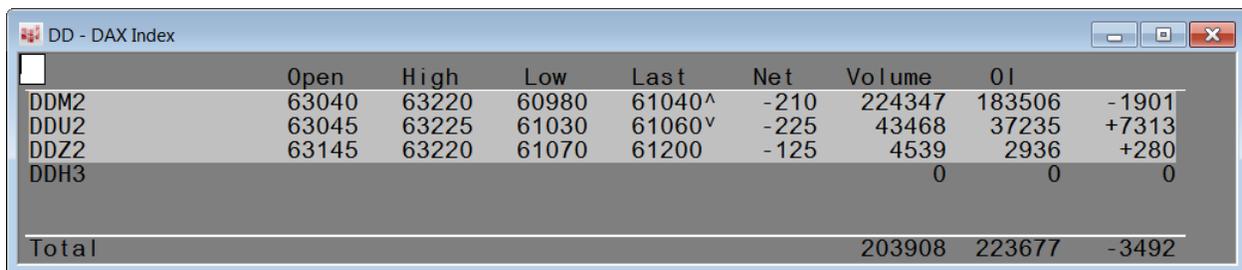
The **Last** field indicates when the database was last updated.

Select **Slow** or **Fast** for the Speed. Please note that choosing **Fast** may interfere with the speed of real-time data.

All Contracts

The All Contracts window provides a concise picture of the activity for one particular commodity.

Data includes: open, high, low, last (trades only), net change, exchange volume, contract open interest from the previous day, and net change of open interest from previous day:



	Open	High	Low	Last	Net	Volume	OI	
DDM2	63040	63220	60980	61040 [^]	-210	224347	183506	-1901
DDU2	63045	63225	61030	61060 ^v	-225	43468	37235	+7313
DDZ2	63145	63220	61070	61200	-125	4539	2936	+280
DDH3						0	0	0
Total						203908	223677	-3492

Total volume and total open interest are optionally displayed at the bottom of the window. To show these values, click the **Setup** button or right-click the window, and then click **Show Total Vol and OI**. Hide them in the same way.

You can search for exchange-traded spreads. (You must be enabled to see spread information.) When native spreads are displayed, the total volume is calculated for the displayed native spread contracts. Open interest is not displayed. Notice that the All Contracts window has a scroll bar when not all contracts are displayed:

	Open	High	Low	Last	Net	Volume	OI		Description
EDAS3M2	52	60	42	57	0	6164	0	0	Jun 12, Sep 12
EDAS3N2						0	0	0	Jul 12, Oct 12
EDAS3Q2						0	0	0	Aug 12, Nov 12
EDAS3U2	35	40	25	30	-5	23014	0	0	Sep 12, Dec 12
EDAS3Z2	10	10	5	5	0	17708	0	0	Dec 12, Mar 13
EDAS3H3	15	15	10	10	+5	5906	0	0	Mar 13, Jun 13
EDAS3M3	10	20	10	10	0	9571	0	0	Jun 13, Sep 13
EDAS3U3	25	30	25	25	0	8964	0	0	Sep 13, Dec 13
EDAS3Z3	30	35	25	30	-5	3498	0	0	Dec 13, Mar 14
EDAS3H4	60	65	55	55	0	8193	0	0	Mar 14, Jun 14
EDAS3M4	75	85	70	70	-10	5873	0	0	Jun 14, Sep 14
EDAS3U4	110	115	95	100	-10	6115	0	0	Sep 14, Dec 14
EDAS3Z4	105	110	95	95	-5	5012	0	0	Dec 14, Mar 15
EDAS3H5	130	140	120	125	-5	4437	0	0	Mar 15, Jun 15
EDAS3M5	140	145	130	130	-5	7613	0	0	Jun 15, Sep 15
EDAS3U5	155	155	140	140	-15	2185	0	0	Sep 15, Dec 15
EDAS3Z5	130	135	120	125	0	731	0	0	Dec 15, Mar 16
EDAS3H6	135	145	135	135	-10	1497	0	0	Mar 16, Jun 16
EDAS3M6	140	140	135	135	0	609	0	0	Jun 16, Sep 16
EDAS3U6	145	145	140	140	0	926	0	0	Sep 16, Dec 16
EDAS3Z6	120	120	110	110	-5	710	0	0	Dec 16, Mar 17
EDAS3H7	115	120	115	120	0	129	0	0	Mar 17, Jun 17
EDAS3M7	110	110	110	110	-5	214	0	0	Jun 17, Sep 17
EDAS3U7	120	120	120	120	-5	96	0	0	Sep 17, Dec 17
EDAS3Z7	85	90	85	85	+5	10	0	0	Dec 17, Mar 18
EDAS3H8					-5	5	0	0	Mar 18, Jun 18
EDAS3M8	80	85	80	85	0	6	0	0	Jun 18, Sep 18
EDAS3U8	85	90	85	90	0	14	0	0	Sep 18, Dec 18
EDAS3Z8	55	55	50	50	0	6	0	0	Dec 18, Mar 19
EDAS3H9					-5	1	0	0	Mar 19, Jun 19
Total						95310			

You can size the window to show all contracts or resize it after moving from a commodity with many contracts to a commodity with few. Click the **Setup** button or right-click the window, and then click **Size to Fit**.

The rows on the All Contracts window are shaded alternating the shade every three rows.

The All Contracts window starts [out of page](#). [Colors](#) and [fonts](#) can be changed.

To rename the window, right-click the title bar, and then select **Rename Window**. The All Contracts window must be in the page for the Rename Window menu item to appear.

The All Contracts window does not have an associated toolbar.

To open the window, click the **AllCon** button on the toolbar. If the button is not displayed, click the **More** button, and then click **All Contracts**.

The Time & Sales Window

The Time & Sales window allows you to follow the trading in a specified contract on a trade-by-trade basis. It displays every trade that occurs. The system shows minute-by-minute activity for active contracts with the earliest ticks within the minute shown on the far left. Additionally, the system reports bids and offers.

Opening Time & Sales

Click the **T&S** button on the toolbar and then click **Time & Sales**. To enter a new commodity, type a symbol in the symbol entry box.

If the button is not displayed, click the **More** button, and then click **Time And Sales**.

To add the **T&S** button to the toolbar:

1. Click the **Setup** button.
2. Select **Customize Toolbar**. This displays the Toolbar Manager window.
3. Click the >>> button in the **Add/Remove** column in the **Chart, Quote, News...** row.
4. Click **T&S** in the button column.
5. Click the **Close** buttons on the Customize Application Toolbar and Toolbar Manager windows.

Time & Sales Components

Time	Price	Price	Price	Price	Price	Price	Price
	135700	135700	135725	135700	135700	135725	135725
	135700	135725	135725	135725	135725	135700	135725
9-14:47	135700	135700					
9-14:48	135700	135700	135700	135700	135700	135700	135725
	135700	135700	135700	135725	135725	135700	135700
	135700	135700	135700	135700	135700	135700	135725
	135700	135700	135725	135700	135700	135700	135700
	135700	135700	135700	135700	135700	135725	135700
	135700	135700	135700	135700	135700	135725	135700
	135700	135700	135700	135700	135700	135700	135700
	135700	135700	135675 _B	135700 _A	135700	135700	135675
	135675	135675	135675	135675	135675	135675	135675
	135675	135675	135650 _B	135675 _A	135650	135650	135650
	135650	135650	135650	135650	135650	135650	135650
	135650	135650	135650	135675	135675	135675	135675
	135675	135650	135675	135650	135650	135675	135650
	135650	135650	135650	135650	135650	135675	135650
	135650	135650	135675	135675	135650	135650	135650
	135650	135675	135675	135650	135675	135675	135675
	135675	135675	135650	135650	135650	135650	135650
	135650	135650	135650	135650	135675	135650	135650
	135675	135675	135675	135675	135675	135675	135675
	135675	135675	135675	135675	135675	135675	135675
	135675	135675	135675	135675	135675	135675	135675
	135675	135675	135675	135675	135675	135675	135675
	135700 _A	135675 _B	135675	135675	135675	135675	135675
	135650 _B	135675 _A	135675	135675	135675	135675	135675
	135700 _A	135675 _B	135700 _A	135700	135700	135700	135700
	135700	135675	135675	135675	135675	135675	135675
	135675	135650 _B	135675 _A	135675	135675	135650	135675
	135675	135675	135675	135700	135700	135700 _A	135675 _B
	135700 _A	135700	135675	135675	135675	135700	135700
	135675	135700	135675	135675	135675	135700	135700
	135700	135675	135700	135675	135700	135675	135700

The time is indicated on the left of the window. It is followed by all trades in the commodity. Bids are marked with a B and offers are marked with an A.

The system reports every trade received from the exchanges. However, occasionally, the exchanges misreport tick data. COG attempts to indicate misreported data by drawing a line through the misreported price.

When the system detects a missing tick, it inserts a price in the Time and Sales window. A box underneath a price indicates an inserted price, like this:

```
9-13:29
9-13:38  [10940✓]
```

For time and sales entries that are longer than one line, COG repeats the time on the last line of the minute.

[Changing Fonts](#)

[Changing Colors](#)

Time & Sales Toolbar

The Time and Sales toolbar includes:

SalesC button

Toggles the quote view to show or hide sales conditions (HIT, TAK, SPR, and GIS) for bond contracts. SPR indicates one leg of a spread. GIS indicates Gi-Se price (Unmatched Quoted Price). These prices, though actual trades, can set daily close values and affect historical prices.

Volume button

Toggles to quote view to show and hide the number of contracts involved in each bid, ask, or trade. This includes contracts traded during a non-primary session as well as contracts that trade electronically only. Not all exchanges report volume.

CumVol button

Toggles the quote view to show and hide the total number of contracts traded. This cumulative value is reported only on trades. This includes contracts traded during a non-primary session as well as contracts that trade electronically only. Not all contracts report cumulative volume.

135850 _A	339	135825 _B	748	135825 _B	740	135825 _B	741	135825	2
135850 _A	343	135850 _A	347	135850 _A	367	135850 _A	369	135850 _A	379
135850 _A	376	135850 _A	379	135850 _A	380	135850 _A	381	135850	8
135850 _A	369	135850	2	135850 _A	363	135850	1	135850 _A	362
135850	1	135825 _B	737	135850 _A	361	135825 _B	738	135825 _B	740
135850 _A	360	135850 _A	361	135825 _B	739	135825 _B	737	135825 _B	735
135850 _A	369	135825 _B	734	135825 _B	732	135850 _A	374	135850 _A	376
135825 _B	782	135850	20	135850 _A	361	135825 _B	787	135825 _B	687
135825 _B	685	135850	5	135850 _A	356	135850 _A	361	135850	1
135825 _B	687	135825	9	135825 _B	678	135850 _A	402	135825 _B	728
135850	5	135850 _A	447	135825 _B	768	135825	1	135825 _B	767

CID button

Toggles the quote view to show and hide the parties involved in the selected transaction. The city code for the branch office for the firm on each side of the quote is also indicated.

	15748A	CCI LB	15744B	GAC NY	15747A	GAC NY	15744B
18-12:25	15744B	SAX CP	15747A	SAX CP	15743B	GAC NY	15746A
18-12:26	15744B	CCI LB	15748A	CCI LB	15744B	GTS NY	15749A
	15747A	ODS LD	15746B	TDF LA	15746A	TDF LA	15744B
	15746B	BFS LD	15748A	BFS LD	15745B	SAX CP	15748A
	15747A	GAC NY	15746B	TDF LA	15747A	TDF LA	15745B
	15741B	COM HK	15749A	COM HK	15745B	ALI DB	15747A
	15747A	TDF LA	15746A	TDF LA	15744B	ODS LD	15746A
	15746A	GAC NY	15745B	TDF LA	15746A	TDF LA	15744B
	15746B	ZKB ZR	15750A	ZKB ZR	15743B	LFH HK	15748A
	15748A	FXD NY	15746B	TDF LA	15746A	TDF LA	15744B

Trades button

Toggles the quote view to show only trades or bids, asks, and trades.

Corrections button

Changes the view, so that only inserted and deleted entries are displayed.

Compress button

Toggles the quote view between compressed data (only the minutes with activity) and uncompressed data (all minutes even without activity).

Setting Time & Sales Preferences

To set preferences, click the **Setup** button and then click **T&S Preferences**.

Changing the display

(Image altered to highlight these preferences.)

Select the check box for each item you wish to add to the display:

- Sales Condition
- Volume
- Cumulative Volume
- Contributor ID
- Minutes without activity
- Month on price line
- Intra-minute underlying

Choose how many characters you want displayed for each data type.

When intra-minute underlining is selected, the system places a solid line under the first entry and a dashed line after every third line within each minute, as long as there is at least one additional entry after the dashed line.

```

9-10:14
9-15:30
9-15:31 135975B 136000A 136000A 136000A 135975
         135975B 135975B 135975B 135975B 135975B
         136000A 135975B 135975 135975B 135975B
         ---135975---135975B---136000---136000A---135975B---
         136000 136000 136000A 135975B 136000A
         135975B 135975B 136000A 136000 136000
         ---136000B---136025A---136025A---136025A---136025A---
         136000B 136000B 136000B 136000B 136000B
         136000B 136025A 136000B 136000B 136025
         ---136000B---136000---136000---136000B---136000B---
         136000B 136000B 136000B 136000B 136000B
         136000A 135975B 135975B 136000A 135975B
         .....

```

Insert lines break



Insert New Line:

Before Bid After Ask

Before Trade After Trade

Select the check box for each instance you would like the system to start a new line: before the bid, before the ask, before a trade, or after a trade.

Resequencing inserted prices



Resequence Inserted Prices

If this check box is selected, CQG will determine the placement of exchange-inserted price, rather than placing the inserted prices at the end.

The following rules are applied to inserted prices:

- An insert is moved within the minute to the point where the difference between the insert and the price before it is minimized or to where the insert fits between two prices.
- Deletions and other inserts are excluded from the price comparison.
- If the preceding price is a delete, then the resequencing is done using the price before the delete, and the insert is placed after the delete.
- Inserted settlements are not reordered.
- If the insert is the last price in a minute and is not preceded by a delete, it is moved to an earlier position in the minute. This rule overrides any other rules. It will not resequence inserts labeled **update last**.
- Inserts replace any exact matching deleted prices overriding other rules.

These changes affect only bars built from Time and Sales data not currently transmitted bars.

Coloring buys and sells

Color Buys & Sells
(configure colors in TS Colors)

Select this check box if you want buys and sells to be colored. To change the color, go to **Setup > T&S Colors > Color Element**.

22-15:07	223650	223650
	223650	223625
	223625	223600
	223600	223600
	223600	223600
	223600	223600
	223600	223625
22-15:07	223625	223625
22-15:08	223625	223650
	223650	223650
	223650	223675
	223675	223650
	223675	223675
	223675	223675
	223675	223700
	223700	223700
	223700	223700

Add Sound Board button

Enable Sound Board icon
on header bar

Select this check box to display the **Sound Board** button on the Time and Sales title bar. This setting applies to all Time and Sales windows.

In order to play sounds, they must also be configured. To configure sounds, right-click the **Sound Board** button.

The Sound Board plays sounds to indicate new trades and changes to best bid and ask.

Navigating the Time & Sales Window

To go to a specific time

1. Right-click the **Time & Sales** window.
2. Click **Goto**.
3. Choose a date and time.
4. Click **OK**.

To return to current time

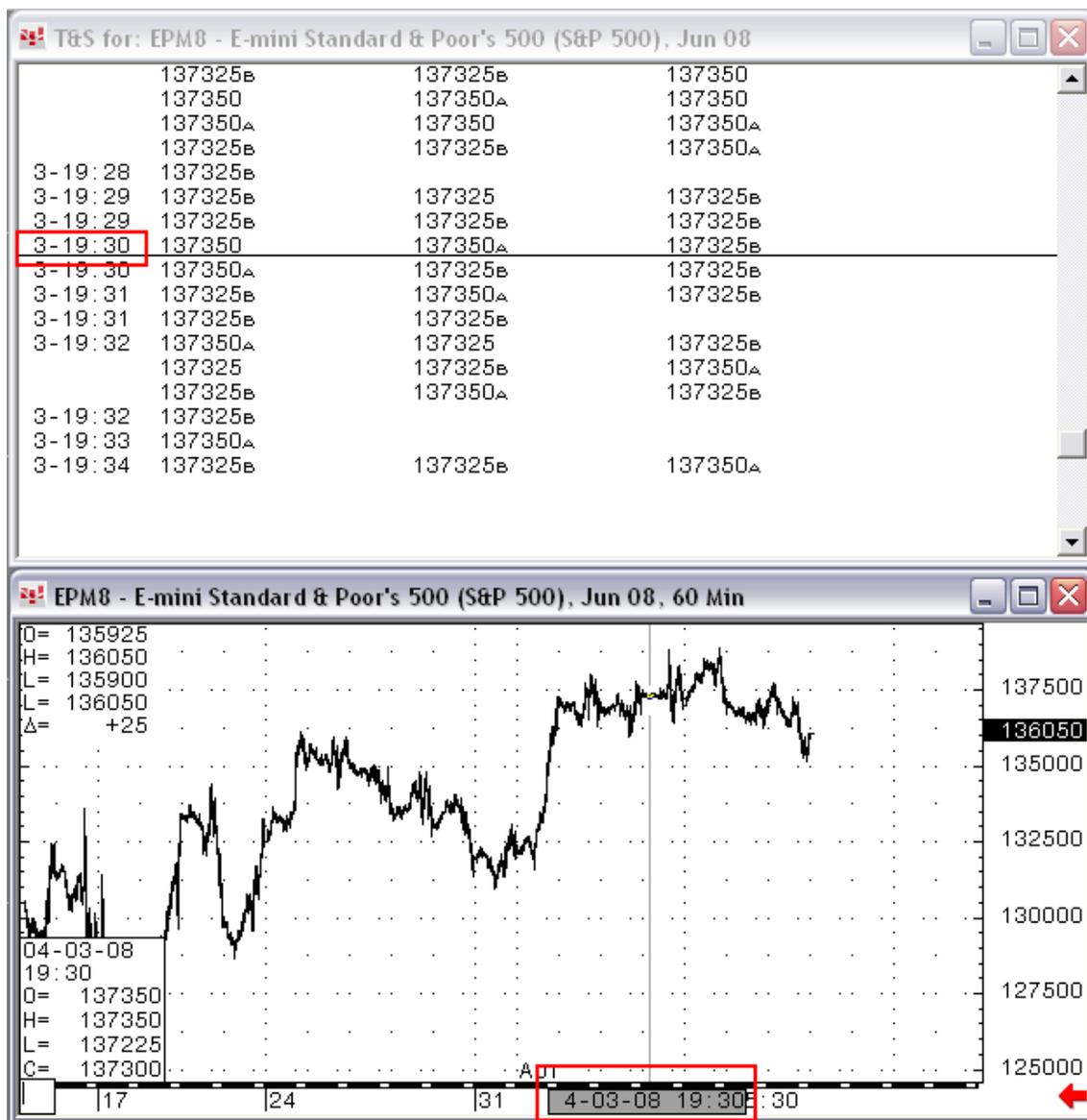
1. Right-click the **Time & Sales** window.
2. Click **Goto Current Time**.

Synchronizing Time & Sales to a Chart

The Time and Sales display can be synchronized with a chart, so that as a vertical cursor moves on a chart, the Time and Sales moves also.

1. Right-click on the time scale of a 60-min or less chart.
2. Click **Global Cursors** unless it is checked already.
3. Right-click the **Time and Sales** window.
4. Click **Sync to Chart Cursor**.

The time represented by the location of the vertical cursor will be underline in the **Time and Sales** window, like this:



Indicating the Amount of Tick Data to Save

For servers only. Click the **System** button, point to **Data**, and then click **Tick Data**.

Indicate the number of days of data to save and the minimum free disk space (in megabytes).

The minimum free disk space number tells the system the point to start deleting the oldest tick data. In other words, if the system has not saved 29 days of tick data, and the total free disk space is less the designated number (200 MB), it should start deleting the oldest ticks.

Portfolio Time & Sales

The Portfolio Time & Sales window allows you to monitor tick information for multiple contracts or markets at once based on the trade volume threshold you set. Multiple Portfolio Time & Sales windows can be opened at one time.

The window displays trade volume, price, and time for the selected contracts. The aggressor side is indicated by red (best ask) and green (best bid) highlights of trade volume.

Portfolio Time & Sales requires an enablement.

Opening Portfolio Time & Sales

You can choose to display one of several default portfolios or your own custom portfolios. Any previously created custom portfolios will be displayed in the portfolio list, even if you are using Portfolio Time & Sales for the first time.

1. Click the **T&S** button on the toolbar.
2. Click **Portfolio Time & Sales**. The first time the window opens, it will display the first portfolio in the default list. Subsequently, it will display the last selected portfolio.
3. Right-click the **Portfolio Time & Sales** title bar.
4. Click the portfolio you wish to display.

Portfolio Time & Sales Components

TVol	Symbol	Price	Time
10	F.US.ZCEZ7	3596	10:38
1	F.US.ZWAZ7	7384	10:37
4	F.US.ZSEX7	8600	10:37
2	F.US.ZSEX7	8600	10:37
1	F.US.ZCEZ7	3596	10:37
1	F.US.ZCEU7	3426	10:37
1	F.US.ZWAZ7	7384	10:37
1	F.US.ZCEZ7	3596	10:37
1	F.US.ZCEU7	3426	10:37
4	F.US.ZWAH8	7376	10:37
2	F.US.ZWAZ7	7384	10:37
1	F.US.ZSEF8	8746	10:37
1	F.US.ZSEF8	8746	10:37
3	F.US.ZSEU7	8440	10:37
1	F.US.ZCEZ7	3596	10:37
7	F.US.ZSEU7	8440	10:37
1	F.US.ZWAZ7	7382	10:37
1	F.US.ZSEX7	8600	10:37
1	F.US.ZCEZ7	3596	10:37
1	F.US.ZWAZ7	7382	10:37
1	F.US.ZCEZ8	4000	10:37
1	F.US.ZCEZ7	3600	10:37
10	F.US.ZCEZ7	3596	10:37
1	F.US.ZWAZ7	7384	10:37
2	F.US.ZWAZ7	7384	10:37
2	F.US.ZWAZ7	7384	10:37
1	F.US.ZWAH8	7380	10:37

The Portfolio Time & Sales Window

The trade volume threshold is displayed on the title bar. A numeral preceded by < indicates the minimum threshold value. A numeral preceded by > indicates the maximum threshold value.

TVol	Symbol			
		cqg.CAC40.Oct05		
6	F.US.FV	cqg.Commodities		
5	F.US.FV	cqg.DAX.Oct05		
4	F.US.FV	cqg.DJI.Oct05		
1	F.US.FF	cqg.DJT.Oct05		
1	F.US.TU	cqg.DJU.Oct05		
20	F.US.FV	cqg.FTSE100.Oct05		
1	F.US.FV	cqg.NASDAQ100.Oct05		
2	F.US.TU	cqg.NIKKEI225.Oct05		
19	F.US.TU	cqg.SP400.Oct05		
21	F.US.TU	cqg.SP500.Oct05		
79	F.US.TU	cqg.SP600.Oct05		
22	F.US.TU	cqg.US Futures		
		Grain		
		Metals		
28	F.US.TU	Treasury		
100	F.US.TU			
20	F.US.TU	Create New...		
50	F.US.TU	Edit...		
95	F.US.TU			
55	F.US.TUAU7	102272	10:41	
30	F.US.FVAU7	106085	10:41	
18	F.US.FVAU7	106085	10:41	
6	F.US.FVAU7	106085	10:41	
100	F.US.TUAU7	102272	10:41	
1	F.US.FVAU7	106085	10:41	
10	F.US.FFAU7	95080	10:41	
1	F.US.FFAU7	95080	10:41	
1	F.US.TUAU7	102272	10:41	
122	F.US.TUAU7	102272	10:41	

The Portfolio Time & Sales Right-Click Menu

Default and custom portfolios are listed here. You can also edit and create a new portfolio from this menu.



The Symbol Groups Window

Open this window by right-clicking on the Portfolio Time & Sales window and clicking **Create New**.

Setting Portfolio Time & Sales Preferences

To set preferences, click the **Setup** button and then click **Portfolio T&S Preferences**.

Applying preferences restarts the Portfolio Time & Sales window.

Add Sound Board button

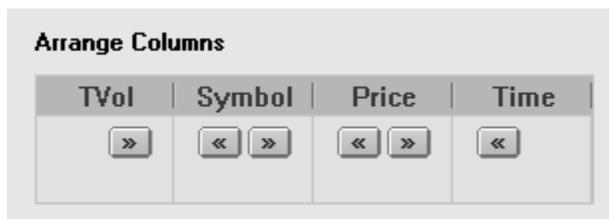
Enable Sound Board icon on header bar for all windows.

Select this check box to display the **Sound Board** button on the Portfolio Time and Sales title bar. This setting applies to all Portfolio Time and Sales windows.

In order to play sounds, they must also be configured. To configure sounds, right-click the **Sound Board** button.

The Sound Board plays sounds to indicate new trades and changes to best bid and ask.

Arrange Columns



Click the arrow buttons to move columns.

Filter Trader Volume

Filter Trade Volume Displayed

Threshold volume for trades:

Greater than or equal to

Less than or equal to

Select a check box and set a value to display trade volume according to a particular threshold.

The trade volume threshold is displayed on the title bar. A numeral preceded by < is the minimum threshold value. A numeral preceded by > is the maximum threshold value.

Creating a Custom Portfolio

1. Right-click the Portfolio Time & Sales title bar.
2. Select **Create New**. The Symbol Groups window opens.
3. Enter a name for the portfolio.
4. Enter a symbol to include in the portfolio.
5. Click the **Add** button. The symbol will be displayed in a list.
6. Continue to add all of the symbols you want included in the portfolio.
7. When you are finished adding symbols, click **OK**.

You can also select **New** in the **Symbol Groups Name** list.

Adding Symbols to a Custom Portfolio

Adding symbols to a portfolio will refresh the open Portfolio Time & Sales window. You cannot add symbols to default portfolios.

1. Right-click on the Portfolio Time & Sales title bar.
2. Click **Edit**. The Symbols Group window will open the currently displayed portfolio.
3. To change portfolio, click the down arrow on the **Name** field.
4. Select a portfolio.
5. Enter a symbol.
6. Click the **Add** button. The symbol will be displayed in a list.
7. Continue to add all of the symbols you want included in the portfolio.
8. When you are finished adding symbols, click **OK**.

Deleting Symbols from a Custom Portfolio

Deleting symbols from a portfolio will refresh the open Portfolio Time & Sales window. You cannot delete symbols from default portfolios.

1. Right-click on the Portfolio Time & Sales title bar.
2. Click **Edit**. The Symbols Group window will open the currently displayed portfolio.
3. To change portfolio, click the down arrow on the Name field.
4. Select a portfolio.
5. Click on the symbol.
6. Click the **Add** button. The symbol will be displayed in a list.

To delete more than one symbol, select the symbols while holding down the Ctrl key.

Deleting a Custom Portfolio

1. Right-click on the Portfolio Time & Sales title bar.
2. Click **Edit**. The Symbols Group window will open the currently displayed portfolio.
3. To change portfolio, click the down arrow on the **Name** field.
4. Select the portfolio you wish to delete.
5. Click the **Name** down arrow again.
6. Click **Delete current group**.

Sorting Columns

Click a column header to sort the columns. An arrow will indicate which column is being used to sort the data and whether it's sorted ascending or descending.

Quotes in CQG

CQG offers different ways of looking at quote data. Eight windows are included in the Quote menu:

- [Quote Board](#)
- [Last/Net Change](#)
- [Market Watch](#)
- [Custom QuoteBoard](#)
- [Quote SpreadSheet](#)
- [Enhanced Quote SpreadSheet](#)
- [Spread Matrix](#)
- [Spread Pyramid](#)

The Quote Board, Last/Net Change, and Market Watch contain pre-defined data, while the other quote boards can be customized.

[Snap Quote](#), another quote view, is accessed directly.

Key to price markings

97291✓	Settlement price
6128 _A	Last ask price
133700 _B	Last bid price
6216 ^v	Down from previous trade or quote
5906 ^A	Up from previous trade or quote
<u>8997^A</u>	New high
<u>180550_B</u>	New low

On the quote windows, symbols highlighted in red are not recognized by CQG. Symbols highlighted in yellow indicate delayed data.

Symbol	Symbol
ENQH8	Crude
ENQJ	CLAG8
	CLAH8
	CLAJ8

[Changing Fonts](#)

[Changing Colors](#)

Opening Quote Windows

Click the **Quote** button on the toolbar, and then click the name of the quote window you want to open.

If the button is not displayed, click the **More** button, and then click **Quote**.

To add the **Quote** button to the toolbar:

1. Click the **Setup** button.
2. Select **Customize Toolbar**. This displays the Toolbar Manager window.
3. Click the >>> button in the **Add/Remove** column in the **Chart, Quote, News...** row.
4. Click **Quote** in the button column.
5. Click the **Close** buttons on the Customize Application Toolbar and Toolbar Manager windows.

Moving Between Quote Windows

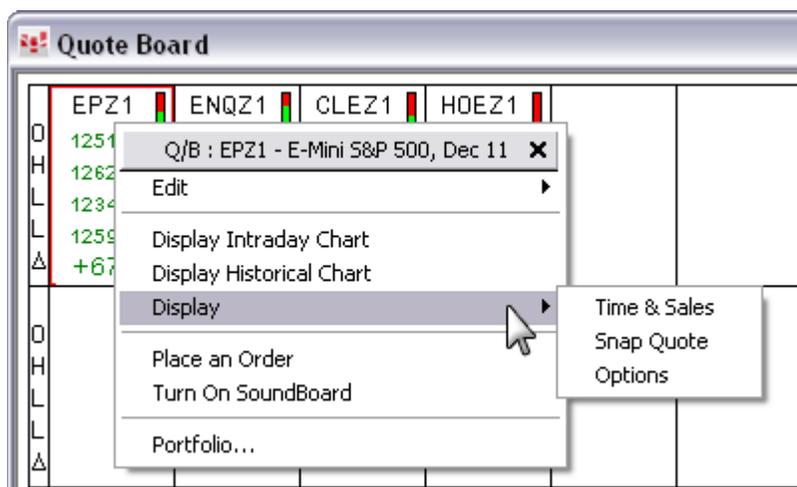
Use the quote window [toolbars](#) to move from a Quote Board to a Last/Net Change or from a Custom QuoteBoard to a Quote SpreadSheet. You can also right-click on the quote window title bar.

Renaming Quote Windows

Renaming the window can help to easily identify the contents of a quote window. For example, when working with portfolios or when using the QSS and EQSS to trade.

1. Right-click on the title bar of the quote window.
2. Click **Rename Window**.
3. Enter a new name in the **To** field.
4. Click **OK**.

Opening Other Applications from Quote Windows



Chart

Right-click a quote cell and then click **Display Intraday Chart** or **Display Historical Chart**.

For a Custom QuoteBoard, where the quote cell has study values, the studies will also appear in the chart window.

Depending on your [System Preferences](#), you may also double-click a cell to open a chart.

Time & Sales

Right-click a quote cell, point to **Display**, and click **Time & Sales**.

Snap Quote

Right-click a quote cell, point to **Display**, and click **Snap Quote**.

Options

Right-click a quote cell, point to **Display**, and click **Options**.

Placing Orders from a Quote Window

Right-click a quote cell and then click Place an Order. An order entry application will open according to your [Symbol System Preferences](#).

You may also double-click a cell to open a trading application based on your [Misc System Settings](#).

Both the [Quote SpreadSheet](#) and [Enhanced Quote SpreadSheet](#) offer comprehensive trading capabilities.

Synthetic Spreads

You can enter a spread equation in a quote window to obtain bid/ask quote data for that spread. Only bid/ask quotes are displayed. Trades and traded volumes are not. Only the Enhanced Quote SpreadSheet does not support synthetic spreads.

Bid/ask quotes are displayed when the Value Preference in Quote Preferences is set to Quote.

The best ask is calculated as the difference between best asks of components from the buy perspective and the best bids of components from the sell perspective. The best bid is calculated as a difference between best bids of components from the buy perspective and best asks of components from the sell perspective.

For example, ENQ-EP:

ENQ	EP	ENQ-EP
1639.25	1339.50	300.50
1639.00	1339.25	300.25
1638.75 A	1339.00 A	300.00 A
1638.50 B	1338.75 B	299.75
1638.25	1338.50	299.50 B
1638.00	1338.25	299.25

In addition to entering symbols for the spread, users can set multipliers that are used as order ratios for trading. Spread entries can also include a calculation mode, tick size, and trading ratio.

Implied Order Data

CQG displays combined quantities, which are the sum of outright and implied quantities. You can view implied quantities by adding Implied Ask, Volume Implied Ask, Implied Bid, Volume Implied Bid, Outright Ask, Volume Outright Ask, Outright Bid, Volume Outright Bid, Implied Volume Best Ask, Implied Volume Best Bid columns to your quote displays.

This data will be displayed if it is available from the exchange. Implied quantities are based on spread orders, while outright quantities are based on futures orders.

Data Definitions for Current Values Window

These values are used with [Custom QuoteBoards](#), [QSS](#), and [EQSS](#).

Value	Heading	Definition
Alias	Alias	Symbol alias.
Ask	Ask	Most recent offer price today.
AverageVolatility	AV	Average volatility based on preferences when options column is selected.
Bid	Bid	Most recent bid price today.
BidAskorTradeTiMe	BATTM	Time of most recent bid, ask, or last trade.
BidAskTiMe	BATM	Time of most recent bid or ask.
Buy Market	Buy	Displays MKT button used to place buy market orders. For FIT contracts, displays TAKE button.
CloseRangeHi	CRH	High price for closing range.
CloseRangeLo	CRL	Low price for closing range.
COI	COI	Contract's last known open interest.
ContractMonth	CM	Month contract expires.
Coupon Rate Fraction	CRF	Coupon rate for bond as fraction.
CouponRate	Coupon/CR	Coupon rate for bond.
DElta	Delta	Current Delta of option based on preferences.
DEltaNetChange	DENC	Change in Delta value from prior day.
DTLastAsk	DTLA	Date and time of last ask quote.
DTLastBid	DTLB	Date and time of last bid.
DTLastQuote	DTLQ	Date and time of most recent Bid, Ask, or Trade.
DTLastTrade	DTLT	Change in last trade from prior day's close.
DTPriorAsk_1	DTPA1	Date and time of previous offering price.

Value	Heading	Definition
DTPriorAsk_2	DTPA2	Date and time of third most recent offer.
DTPriorAsk_3	DTPA3	Date and time of fourth most recent offering price.
DTPriorBid_1	DTPB1	Date and time of second-to-last last bid.
DTPriorBid_2	DTPB2	Date and time of third-to-last last bid.
DTPriorBid_3	DTPB3	Date and time of fourth-to-last last bid.
DTPriorQuote_1	DTPQ1	Date and time of second-to-last Bid, Ask, or Trade.
DTPriorQuote_2	DTPQ2	Date and time of third-most-recent Bid, Ask, or Trade.
DTPriorQuote_3	DTPQ3	Date and time of fourth-most-recent Bid, Ask, or Trade.
DTPriorTrade_1	DTPT1	Date and time of second-to-last trade.
DTPriorTrade_2	DTPT2	Date and time of third-to-last trade.
DTPriorTrade_3	DTPT3	Date and time of fourth-to-last trade.
ExpirationDate	ED	Expiration date for selected instrument.
FilledBuyOrders	FillB	Sum of volume of filled buy orders for selected symbol and account.
FilledSellOrders	Fills	Sum of volume of filled sell orders for selected symbol and account.
Gamma	Gamma	Current Gamma of option based on preferences.
GammaNetChange	GANC	Change in Gamma value from prior day.
High	High	Current day's high price.
HighTime	HIT	Time of intraday high.
HIT	HIT	Sales Condition for Last trade. Possible values are HIT or blank, if Sales Condition is not HIT or if trades are not available for this contract. Applies to bond contracts only. Values are based only on today's prices.
HitorTake	HTK	Value of Sales Condition for last trade. Possible values are: HIT, TAK, or blank, which means Sales Condition is neither a Hit nor a Take, or trades are not available for this contract. Applies to bond contracts only. Values are based only on today's prices.

Value	Heading	Definition
ImpliedAsk	IA	Most recent ask price for implied orders (based on spread orders).
ImpliedBid	IB	Most recent bid price for implied orders (based on spread orders).
ImpliedUndPrice	IUP	Implied price of underlying instrument.
ImpliedVolatility	IV	Implied volatility of an options contract using selected options model.
ImpVolNetChange	IVNC	Change in Implied Volatility from prior day's close.
IncompleteOrders		Sum of volume of incomplete (hung) orders for selected symbol and account. Used for spread trading.
IndicativeOpenPrice	IOP	Reflects the price that would be the case if pre-open orders were executed. Both outrights and spreads are included in the calculation.
IndicativeOpenVolume	IOV	Reflects the volume that would be the case if pre-open orders were executed. Both outrights and spreads are included in the calculation.
InitialMargin	IM	Minimum exchange required margin to trade specific contract.
LastAsk	LA	Most recent ask, even if not current day's trading.
LastBid	LB	Last bid price.
LastCorrTime	LCT	Time of last correction, either from an exchange or from CQG.
LastQuote	LQ	Most recent Bid, Ask, or Trade.
LastQuoteToday	LQT	Last bid, offer, or trade for current day.
LastTrade	LT	Last trade price (not limited to current day).
LastTradeorSettle	LTS	Last trade or settlement price.
LastTradeToday	LTT	Last trade price of the current day.
LastWorkUpVolume	LWUV	Last non-zero volume received from a new trade, or blank if trades not available for contract. Applies to bond contracts only. Values based only on today's prices.

Value	Heading	Definition
LongDescription	LD	Long description of instrument, that is, how it would appear on title bar of a chart.
LOw	Low	Current day's low price.
LOwTime	LOT	Time of intraday low.
MaintenanceMargin	MM	Minimum exchange-required maintenance margin.
MarkerPrice	MP	Most recent valid marker contract price.
MarkerPriceToday	MPT	Marker contract price today.
Market Direction	Dir	Up or down arrow based on last best bid or best ask price change.
MaturityDate	MD	Maturity date for a bond.
MT_LastAskVolume	MTLAV	Volume of last ask.
MT_LastBidVolume	MTLBV	Volume of last bid.
MT_LastTradeOrSettlementVolume	MTLTOSV	Volume of last trade or settlement.
NetLastAsk	NetA	Change in last ask from yesterday's close.
NetLastBid	NetB	Change in last bid compared to yesterday's close.
NetLastQuote	NetQ	Change in last bid, ask or trade from prior day's close.
NetLastQuoteToday	NC	Change in today's bid, offer or trade from prior day's close.
NetLastTrade	NetT	Change of last trade from prior day's close.
NetLastTradeToday	NLTT	Change of last trade from prior day's close.
NetPriorAsk_1	NPA1	Change in previous offer price compared to yesterday's closing price.
NetPriorAsk_2	NPA2	Change in third most recent offer compared to yesterday's closing price.
NetPriorAsk_3	NPA3	Change in fourth most recent offer compared to yesterday's closing price.
NetPriorBid_1	NPB1	Change in second-to-last offer compared to yesterday's close.

Value	Heading	Definition
NetPriorBid_2	NPB2	Change in third-to-last offer compared to yesterday's close.
NetPriorBid_3	NPB3	Change in fourth-to-last offer compared to yesterday's close.
NetPriorQuote_1	NPQ1	Change in second-most-recent Bid, Ask, or Trade from prior day's last Bid, Ask, or Trade.
NetPriorQuote_2	NPQ3	Change in third-most-recent Bid, Ask, or Trade from prior day's last Bid, Ask, or Trade.
NetPriorQuote_3	NPQ3	Change in fourth-most-recent Bid, Ask, or Trade from prior day's last Bid, Ask, or Trade.
NetPriorTrade_1	NPT1	Change in second-to-last trade from prior day's close.
NetPriorTrade_2	NPT2	Change in third-to-last trade from prior day's close.
NetPriorTrade_3	NPT3	Change in fourth-to-last trade from prior day's close.
NumDnTicks	NDT	Number of down ticks.
NumTicks	NT	Total of up and down ticks.
NumUpTicks	NUT	Number of up ticks.
OPen	Open	Current day's opening price.
Open Trade Equity	OTE OTE+P/L	Displays value for selected symbol and account based on OTE Trading Preferences.
OpenPosition	Pos	Displays open position for selected symbol and account.
OpenRangeHi	ORH	High price for opening range.
OpenRangeLo	ORL	Low price for opening range.
OptDayBefYestClose	ODBYC	Day before yesterday's option close price.
OptDayBefYestSettlement	ODBYS	Day before yesterday's option settlement price.
OptionAskTiMe	OATM	Time of last option offer.
OptionBidTiMe	OBTM	Time of last option bid.
OptionCohUndPrice	OCUP	Option coherent underlying price.

Value	Heading	Definition
OptionDaysToExp	ODTE	Number of days until expiration for options contract.
OptionIntRate	OIR	Interest rate associated with currency option trades in.
OptionNetChange	ONC	Change in Option Price from prior day.
OptionPrice	OP	Option price.
OptionPriceTmDate	OPTD	Time and date of option trade.
OptionUndSymbol	OUS	Symbol for underlying instrument.
OptionVolCurve	OVC	Volatility designated in Volatility Workshop.
Order Size	Size	Displays order quantity used for placing orders.
OutrightAsk	OA	Most recent ask price for outright orders (based on futures orders).
OutrightBid	OB	Most recent bid price for outright orders (based on futures orders).
P_OI	POI	Previous open interest.
P_TOI	PTOI	Previous total open interest
PerCentNetLastQuote	PCNetQ	Today's change divided by yesterday's last quote stated as a percent.
PerCentNetLastTrade	PCNetT	Today's change divided by yesterday's last trade stated as a percent.
PriceMinusTheoVal	PTV	Theoretical value subtracted from current options price.
PriorAsk_1	PA1	Previous offer price.
PriorAsk_2	PA2	Third most recent offering price.
PriorAsk_3	PA3	Fourth most recent offering price.
PriorBid_1	PB1	Second-to-last bid.
PriorBid_2	PB2	Third-to-last bid.
PriorBid_3	PB3	Fourth-to-last bid.
PriorQuote_1	PQ1	Second-most-recent bid, ask, or trade.
PriorQuote_2	PQ2	Third-most-recent bid, ask, or trade.

Value	Heading	Definition
PriorQuote_3	PQ3	Fourth-most-recent bid, ask, or trade.
PriorTrade_1	PT1	Second-most-recent trade price.
PriorTrade_2	PT2	Third-most-recent trade price.
PriorTrade_3	PT3	Fourth-most-recent trade price.
RHo	Rho	Current Rho of option based on preferences.
RHoNetChange	RHNC	Change in Rho value from prior day.
Sell Market	Sell	Displays MKT button used to place sell market orders. For FIT contracts, displays HIT button.
Session1_High	S1H	Session 1 high.
Session1_Low	S1L	Session 1 low.
Session1_Volume	S1V	Session 1 volume.
Session2_High	S2H	Session 2 high.
Session2_Low	S2L	Session 2 low.
Session2_Volume	S2V	Session 2 volume.
Session3_High	S3H	Session 3 high.
Session3_Low	S3L	Session 3 low.
Session3_Volume	S3V	Session 3 volume.
Session4_High	S4H	Session 4 high.
Session4_Low	S4L	Session 4 low.
Session4_Volume	S4V	Session 4 volume.
Session5_High	S5H	Session 5 high.
Session5_Low	S5L	Session 5 low.
Session5_Volume	S5V	Session 5 volume.
Session6_High	S6H	Session 6 high.
Session6_Low	S6L	Session 6 low.

Value	Heading	Definition
Session6_Volume	S6V	Session 6 volume.
Session7_High	S7H	Session 7 high.
Session7_Low	S7L	Session 7 low.
Session7_Volume	S7V	Session 7 volume.
Session8_High	S8H	Session 8 high.
Session8_Low	S8L	Session 8 low.
Session8_Volume	S8V	Session 8 volume.
Settlement	S	Most recent settlement price. If not available, then yesterday's close price used.
T_CVol	TCV	Today's contract volume.
T_High	TH	Today's session high.
T_Low	TL	Today's session low.
T_OI	TOI	Today's open interest.
T_Settlement	TS	Today's settlement price.
T_TOI	TTOI	Today's contract total open interest.
T_TTickVol	TTTV	Today's total tick volume.
T_TVVol	TTV	Today's total volume.
TAKe	TAK	Sales Condition for Last trade. Possible values are TAK or blank, if Sales Condition is not TAK or if trades are not available for this contract. Applies to bond contracts only. Values are based only on today's prices.
TheoreticalValue	TV	Theoretical Value for an options contract based on preferences
TheoValueNetChange	TVNC	Change, from prior day, in Theoretical Value.
THeta	Theta	Current Theta of option based on preferences.
THetaNetChange	THNC	Change in Theta value from prior day.
TME LastQuote	TMELQ	Time between last Bid, Ask, or Trade and present time.

Value	Heading	Definition
TMELastAsk	TMELA	Time between last ask quote and present time.
TMELastBid	TMELB	Time between last bid and current time.
TMELastTrade	TMELT	Time between last trade and current time.
TMEPriorAsk_1	TMEPA1	Time between most recent offer and current time.
TMEPriorAsk_2	TMEPA2	Time between third most recent offer and present.
TMEPriorAsk_3	TMEPA3	Time between fourth most recent offering price and current price.
TMEPriorBid_1	TMEPB1	Time between second-to-last bid and current time.
TMEPriorBid_2	TMEPB2	Time between third-to-last bid and current time.
TMEPriorBid_3	TMEPB3	Time between fourth-to-last bid and current time.
TMEPriorQuote_1	TMEPQ1	Time between second-to-last Bid, Ask or Trade and current time.
TMEPriorQuote_2	TMEPQ2	Time between third-most-recent Bid, Ask or Trade and current time.
TMEPriorQuote_3	TMEPQ3	Time between fourth-most-recent Bid, Ask or Trade and current time.
TMEPriorTrade_1	TMEPT1	Time between second-to-last trade and current time.
TMEPriorTrade_2	TMEPT2	Time between third-to-last trade and current time.
TMEPriorTrade_3	TMEPT3	Time between fourth-to-last trade and current time.
TMLastAsk	TMLA	Time of last ask quote.
TMLastBid	TMLB	Time of last bid.
TMLastQuote	TMLQ	Time of most recent Bid, Ask, or Trade.
TMLastTrade	TMLT	Time of last trade.
TMLastTradeToday	TMLTT	Time of last trade for current day.
TMPriorAsk_1	TMPA1	Time of previous offering price.
TMPriorAsk_2	TMPA2	Time of third most recent offer
TMPriorAsk_3	TMPA3	Time of fourth most recent offering price.

Value	Heading	Definition
TMPriorBid_1	TMPB1	Time of second-to-last last bid.
TMPriorBid_2	TMPB2	Time of third-to-last last bid.
TMPriorBid_3	TMPB3	Time of fourth-to-last last bid.
TMPriorQuote_1	TMPQ1	Time of second-most-recent Bid, Ask, or Trade.
TMPriorQuote_2	TPMQ2	Time of third-most-recent Bid, Ask, or Trade.
TMPriorQuote_3	TMPQ3	Time of fourth-most-recent Bid, Ask, or Trade.
TMPriorTrade_1	TMPT1	Time of second-to-last trade.
TMPriorTrade_2	TMPT2	Time of third-to-last trade.
TMPriorTrade_3	TMPT3	Time of fourth-to-last trade.
TOI	TOI	Last known total open interest.
UnderlyingPrice	UP	Underlying price for an options contract.
VEga	Vega	Current Vega of option based on preferences.
VEgaNetChange	VENC	Change in Vega value from prior day.
VolumeImpliedAsk	VIA	Volume of Implied Ask orders.
VolumeImpliedBestAsk	VIBA	Best ask volume of implied orders (based on spread orders).
VolumeImpliedBestBid	VIBB	Best bid volume of implied orders (based on spread orders).
VolumeImpliedBid	VIB	Volume of Implied Bid orders.
VolumeLastAsk	VLA	Sum of Volume Outright Ask and Volume Implied Ask.
VolumeLastBid	VLB	Sum of Volume Outright Bid and Volume Implied Bid.
VolumeLastQuote	VLO	Size of most recent Bid, Ask or Trade.
VolumeLastTrade	VLT	Number of contracts or shares in last trade.
VolumeOutrightAsk	VOA	Volume of Outright Ask orders.
VolumeOutrightBestAsk	VOBA	Best ask volume for outright orders.
VolumeOutrightBestBid	VOBB	Best bid volume for outright orders.

Value	Heading	Definition
VolumeOutrightBid	VOB	Volume of Outright Bid orders.
VolumePriorAsk_1	VA1	Size of prior offer.
VolumePriorAsk_2	VPA2	Size of third most recent offer.
VolumePriorAsk_3	VPA3	Size of fourth most recent offering price.
VolumePriorBid_1	VPB1	Size of second-to-last last bid.
VolumePriorBid_2	VPB2	Size of third-to-last last bid.
VolumePriorBid_3	VPB3	Size of fourth-to-last last bid.
VolumePriorQuote_1	VPQ1	Size of second-most-recent Bid, Ask or Trade.
VolumePriorQuote_2	VPQ2	Size of third-most-recent Bid, Ask or Trade.
VolumePriorQuote_3	VPQ3	Size of fourth-most-recent Bid, Ask or Trade.
VolumePriorTrade_1	VPT1	Number of contracts or shares in second-to-last trade.
VolumePriorTrade_2	VPT2	Number of contracts or shares in third-to-last trade.
VolumePriorTrade_3	VPT3	Number of contracts or shares in fourth-to-last trade.
WorkingBuyOrders	WKGB	Displays sum of volume of unfilled buy orders for selected symbol and account.
WorkingSellOrders	WKGS	Displays sum of volume of unfilled sell orders for selected symbol and account.
Y_Close	YCL	Yesterday's closing price.
Y_COI	YCOI	Yesterday's open interest for contract.
Y_CVol	YCV	Yesterday's volume for contract.
Y_High	YHI	Yesterday's high price.
Y_LOw	YLO	Yesterday's low price.
Y_OPen	YOP	Yesterday's opening price.
Y_Settlement	YS	Yesterday's settlement price. If not available, then yesterday's close used.
Y_Tickvol	YTV	Yesterday's tick volume.

Value	Heading	Definition
Y_TOI	YTOI	Yesterday's total open interest
Y_TTickvol	YTTV	Yesterday's total tick volume.
Y_TVVol	YV	Yesterday's total volume.
YieLD_Ask	YLDA	Yield calculated from ask price.
YieLD_Bid	YLDB	Yield calculated from bid price.
YieLD_Close	YLDCL	Yield calculated from closing price.
YieLD_CloseRangeHi	YLD CRH	Yield calculated from high of closing range.
YieLD_CloseRangeLo	YLD CRL	Yield calculated from low of closing range.
YieLD_High	YLDHI	Highest yield, calculated from low price.
YieLD_LastAsk	YLDLA	Yield calculated from last quoted offer.
YieLD_LastBid	YLDLB	Yield calculated from last quoted bid.
YieLD_LastQuote	YLDLQ	Yield based on most recent bid, offer or trade.
YieLD_LastTrade	YLDLT	Yield calculated from last trade.
YieLD_LastTradeorSettle	YLDLTS	Yield calculated from last trade or settlement.
YieLD_LastTradeToday	YLDLTT	Yield calculated from last trade of current day's trading.
YieLD_LOw	YLDLO	Lowest yield, calculated from highest price.
YieLD_NetLastQuote	YLDNLQ	Change in yield calculated by using latest bid, offer or trade.
YieLD_NetLastTrade	YLDNLT	Change in yield calculated by using last trade.
YieLD_OPen	YDLOP	Yield calculated from opening price.
YieLD_OpenRangeHi	YLDORH	Yield calculated from high of opening range.
YieLD_OpenRangeLo	YLDORL	Yield calculated from low of opening range.
YieLD_PriorAsk_1	YLDPA1	Yield calculated from second-to-last quoted offer.
YieLD_PriorAsk_2	YLDPA2	Yield calculated from third-to-last quoted offer.
YieLD_PriorAsk_3	YLDPA3	Yield calculated from fourth-to-last quoted offer.

Value	Heading	Definition
YieLD_PriorBid_1	YLDPB1	Yield calculated from second-to-last quoted bid.
YieLD_PriorBid_2	YLDPB2	Yield calculated from third-to-last quoted bid.
YieLD_PriorBid_3	YLDPB3	Yield calculated from fourth-to-last quoted bid.
YieLD_PriorQuote_1	YLDPQ1	Yield based on second-most-recent bid, offer, or trade.
YieLD_PriorQuote_2	YLDPQ2	Yield based on third-most-recent bid, offer, or trade.
YieLD_PriorQuote_3	YLDPQ3	Yield based on fourth-most-recent bid, offer, or trade.
YieLD_PriorTrade_1	YLDPT1	Yield calculated from second-to-last trade.
YieLD_PriorTrade_2	YLDPT2	Yield calculated from third-to-last trade.
YieLD_PriorTrade_3	YLDPT3	Yield calculated from fourth-to-last trade.
YieLD_Y_ CClose	YLDYCL	Yield calculated from yesterday's closing price.
YieLD_Y_ Settlement	YLDYS	Yield calculated from yesterday's settlement price.
YieLD_Y_ HIgh	YLDHI	Yesterday's highest yield calculated from yesterday's lowest price.
YieLD_Y_ LOw	YLDYLO	Yesterday's lowest yield calculated from yesterday's highest price.
YieLD_Y_ OPen	YLDOP	Yield calculated from yesterday's opening price.

Need to Know News on Quote Windows

Need to Know News can be displayed on quote windows making it easier to keep up with economic releases.

CQG provides several pre-designed EQSS windows on its NTKN pages:

Employment Data							
Report Description	Actual	Estimate	Revision	Latest	Previous	Actual vs Estimate	Actual vs Previous
Non-Farm Payrolls		-75000		-84000	-51000	-9000	-24000
Unemployment Rate (%)		570		610	570	40	+40
Average Hourly Earnings (%)		40		40	30	10	+10
Initial Claims	445000	440000	451000	445000	444000	5000	-6000
Continuing Claims	3525000	3460000	3403000	3525000	3435000	65000	+122000

FOMC and Treasury Budget							
Report Description	Actual	Estimate	Revision	Latest	Previous	Actual vs Estimate	Actual vs Previous
Federal Funds Rate (%)		200		200	200	0	0
Discount Rate (%)		225		225	225	0	0
Treasury Budget (Millions)		-107300		-102800	50700	4500	-153500

Consumers & Sales							
Report Description	Actual	Estimate	Revision	Latest	Previous	Actual vs Estimate	Actual vs Previous
Conference Brd Consumer Conf		5300		5690	5190	390	+500
Consumer Credit (Millions)		8600		4600	14300	-4000	-9700
Personal Consumption (%)		20		60	80	40	-20
Personal Income (%)		-20		10	190	30	-180
Retail Sales Rate (%)		-10		-10	10	0	-40
Retail Sales Excluding Autos		50		40	80	-10	-50
Redbook Month Over Month		-160		-80	-160	80	+80
Redbook Weekly Yr Over Yr		230		180	230	-50	-50

International Trade							
Report Description	Actual	Estimate	Revision	Latest	Previous	Actual vs Estimate	Actual vs Previous
Exports (%)	-170	140		-170	140	-310	-310
Exports Ex Agriculture (%)	-70	80		-70	80	-150	-150
Imports (%)	-370	-180		-370	170	-190	-470
Imports Excluding Petroleum (%)	-30	90		-30	90	-120	-120
Imports Incl. Petroleum (%)	-1280	400		-1280	400	-1680	-1680
Trade Balance (Millions)	-62200	-58000	-58800	-62200	-56800	-4200	-3400
Net Long-Term TIC Flows (Millions)		60000		53400	67000	-6600	-13600
Total Net TIC Flows (Millions)		-2500		51100	12300	53600	+38800

Assume two decimal places to the left for percent values.

You can also create your own pages like you do for other quote displays. Enter a symbol and choose your columns. To find Need to Know News symbols, open CSpec, click the **Reports** tab, and filter by Need to Know News.

CQG has assigned Need to Know News data to existing spreadsheet columns:

Use this column...	For this data...
Long Description	Report Description
Last Trade Today	Actual
Last Trade	Estimate
Ask Price	Revision
Latest	Last Trade
Previous	Prior_Trade1

Use QFormulas to customize your display, as we did in our EQSS windows:

Report Description	Actual	Estimate	Revision	Latest	Previous	Actual vs Estimate	Actual vs Previous
Non-Farm Payrolls Unemployment Rate (%)	Last Trade Today	Last Trade	Ask Price	Last Trade	Prior_Trade1	Use QFormulas for these comparisons	
Initial Claims		465000		478000		13000	+15000
Continuing Claims		3750000		3720000		-30000	-6000

Quote Board, Last/Net Change, and Market Watch

The Quote Board provides the open, high, low, last, and net change from the prior close for the symbols that you enter.

Last/Net Change shows the last trade price and net change from the prior close for the six most current contracts of a particular commodity. You can also show the last trade and net change for stocks and individual option series.

Market Watch shows the last trade and net change for a single futures contract, option series, or stock.

Quote Board, Last/Net Change, and Market Watch Windows

Key to price markings

97291✓	Settlement price	6216 ^v	Down from previous trade or quote
6128 [▲]	Last ask price	5906 [▲]	Up from previous trade or quote
133700 [■]	Last bid price	8997 [▲]	New high
		180550 [■]	New low

Quote Board

	EPM8	ENQM8	BOK8	CAM8	CK8	NDM8
O	133525	180700	6150	9765	5900	180400
H	133700	181400	6190	9813	5940	181400
L	132575	179150	6085	9762	5870	179300
L	133550	180900 [■]	6125 ^v	9785 ^v	5906 [▲]	180850 [■]
Δ	0	+275	+131	+20	+64	+225
	CPEK8	SK8	EDH9	LCM8	NKMB	CLK8
O	39455	13570	97720	8965	12980	11075
H	39575	13760	97725	8985	13000	11160
L	38155	13570	97615	8935	12975	11070
L	38920 [■]	13670 [▲]	97640 [▲]	8980 ^v	13000 [■]	11160
Δ	-525	+344	-25	+2	-55	+146

Open, High, Low, Last, and Net Change

Market Watch



The image shows a 'Market Watch' window with a list of 15 stock tickers. Each ticker is followed by its last price and net change. The net change is shown in red for a decrease and green for an increase. A horizontal bar with a green arrow indicates the direction of the net change.

Ticker	Last Price	Net Change
EPMB	133700	-2575
ENQM8	180550 _B	-5325
CLK8	11020	+9
BOK8	5997 ^A	-20
CAMB	9765 _A	-52
CK8	5842 ^V	-100
NDM8	180550 _A	-5325
CPEK8	39440 _A	+200
SK8	13340 ^A	-220
EDH9	97670 _A	+105
LCMB	8977 ^V	-2
NKM8	13070 _A	+20
CLK8	11020	+9

Last and Net Change

Last/Net Change

EP			ENQ			BO		
M8	133525	-25	M8	180900 _B	+275	K8	6125 ^V	+131
U8	133625 _A	+25	U8	181575 _B	+225	N8	6200 ^V	+131
Z8	133500 _B	-125	Z8			Q8	6230	+128
H9	127100 _B	-6600	H9			U8	6260	+138
M9			M9			V8	6255 _B	+123
						Z8	6305 _B	+126
CA			C			ND		
AC	9799	+23	K8	5906 ^A	+64	C5	180348 ^V	+476
M8	9785 ^V	+20	N8	6034 ^V	+60	M8	180900 _B	+275
U8			U8	6110 ^V	+54	U8		
Z8			Z8	6122 ^V	+82	Z8		
H9			H9	6216 ^V	+70	H9		
M9			K9	6270	+92	M9		
CPE			S			ED		
J8	39140 _B	-605	K8	13670 ^A	+344	J8	97291 ^V	0
K8	38920 _B	-525	N8	13834 ^A	+342	K8	97425 _A	-40
M8	38915 _B	-520	Q8	13700 ^V	+320	M8	97490 _A	-50
N8	38920 _B	-525	U8	13290	+244	N8	97585 _A	-45
Q8	38900 _A	-485	X8	12780 ^A	+154	Q8	97650 _A	-60
U8	38710 _B	-540	F9	12930	+170	U8	97685 _A	-65
LC			NK			CL		
J8	8825 ^A	-45	M8	13000 _B	-55	K8	11160	+146
M8	8975 ^V	-2	U8			M8	11075 ^A	+104
Q8	9590 ^V	-27	Z8			N8	11020 ^A	+101
V8	10135 ^V	-47				Q8		
Z8	10272 _B	-20				U8		
G9	10430 ^A	-35				V8	10738	-1

Last and Net Change

Quote Board, Last/Net Change, and Market Watch Toolbars

These three quote windows include these buttons:

Edit button

Changes the focus of the cell to input, so that you can change the symbol: .

LastNet button

Changes the quote window to a [Last/Net Change](#) window.

MWatch button

Changes the quote window to a [Market Watch](#) window.

QBoard button

Changes the quote window to a [Quote Board](#) window.

CustQB button

Changes the quote window to a [Custom QuoteBoard](#) window.

QSS button

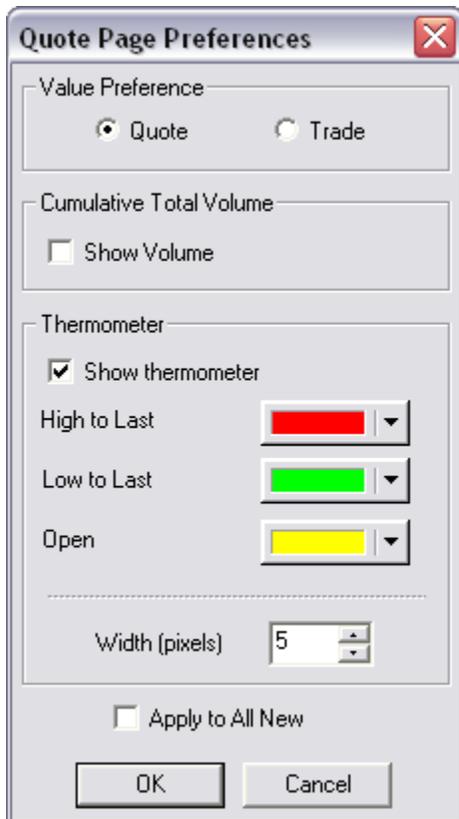
Changes the quote window to a [Quote SpreadSheet](#) window.

EQSS button

Changes the quote window to an [Enhanced Quote SpreadSheet](#) window.

Setting Quote Board, Last/Net Change, and Market Watch Preferences

Preferences control the quote value, volume display, and thermometer settings. The quote value tells the system to display either bids/asks or actual trades. The Last/Net Change view includes only the value preference.



To apply these settings to all new quote windows, select the **Apply to All New** check box.

Choosing Quote or Trade Value Preference

Value Preference

Quote Trade

1. Click the **Setup** button.
2. Select **Quote Preferences**.
3. Select either **Quote** or **Trade**.

Show volume

Cumulative Total Volume

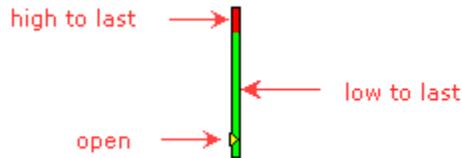
Show Volume

Selecting this check box tells the system to show the cumulative total volume on the quote board, like this:

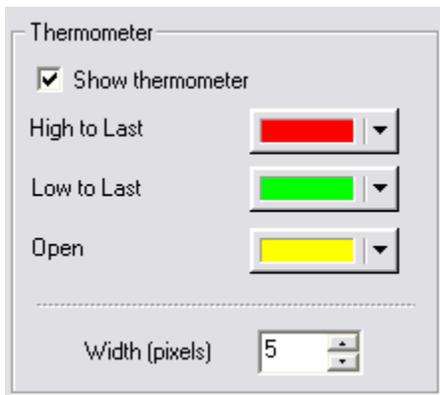
	EPZO	ENQZO	CLEXO	HOEXO
O	112050	198275	7495	21246
H	114350	202200	7664	21603
L	111850	197875	7466	21204
L	114300	202000	7637	21507 _B
Δ	+2250	+3850	+119	+172
V	1306222	219051	199700	30276

Setting Thermometer Characteristics

The thermometer provides a graphical representation of the current market standing relative to its opening, high, and low prices.



These parameters control the colors and width of the thermometer. To hide the thermometer, clear the **Show thermometer** check box.



Select the colors for high to last, low to last, and open.

Type a number between 3 and 20 to indicate how wide you want the thermometer to be. You can also use the arrows. A width of 20 pixels looks like this:

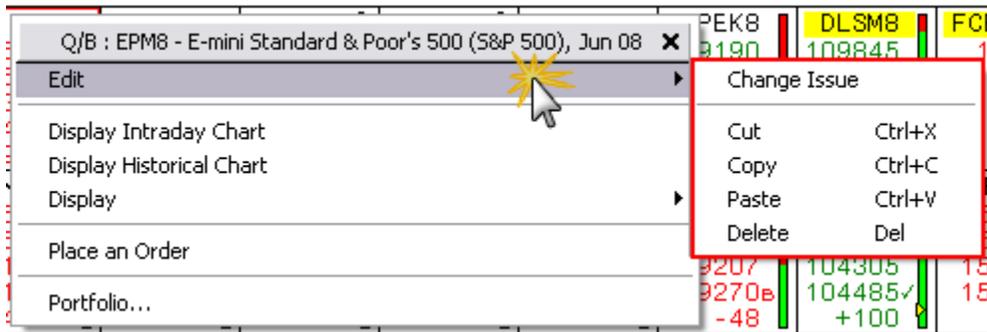
CLEXO		HOEXO	
7495		21246	
7664		21603	
7466		21204	
7637 _B		21507 _B	
+119		+172	
200355		30348	

Working with the Quote Board, Last/Net Change, and Market Watch

To begin, type a symbol and press ENTER. The quote data for that symbol will be displayed.

Editing a quote cell

Right-click the quote cell you want to change, and point to **Edit**.



To change the symbol, click **Change Issue**. You can also click the **Edit** button on the Quote Board toolbar.

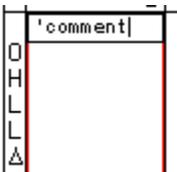
Type the new symbol and press ENTER.

You can also cut and paste or copy and paste the cell.

To clear the contents from the cell, click **Delete**.

Entering a comment

Entering a comment is a way to add header cells to your Quote Board or Last/Net Change. It also provides a way to split entries on the Market Watch.



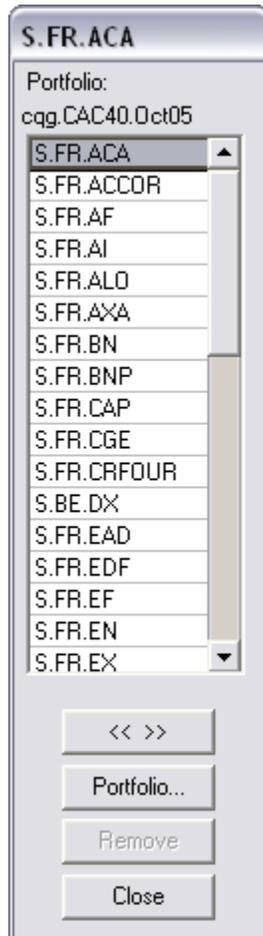
To enter a comment in a cell, type an apostrophe and then your comment.

The comment will be sized to fit the cell.

Entering Portfolio symbols in a quote window

You can enter user-defined portfolios in quote cell. You might want to [rename](#) the Quote Board to the portfolio name.

1. Right-click in a blank cell, and then click **Portfolio**. This window opens:



2. Click the **Portfolio** button to open the Select/Define Portfolio window.
3. Click the **Portfolio Name** you want to display.
4. Click **Close**.
5. Click on each of the portfolio items you want to add to the Quote Board. Click the << >> button to quickly add all of the symbols.
6. They are added immediately to the Quote Board.

As you enter multiple symbols, the system moves across each visible row to the end, and then it starts at the beginning of the next row until it fills each visible cell. At that point, if you continue to click symbols, it will replace the symbol in the last cell.

7. When you are finished, click **Close**.

Adding Sound Board (Quote Board Only)

The Sound Board plays sounds to indicate new trades and changes to best bid and ask.

To add the Sound Board button to a quote cell, right-click the cell, and then click **Turn On Sound Board**.

In order to play sounds, they must also be configured. To configure sounds, right-click the **Sound Board** button.

Custom QuoteBoard

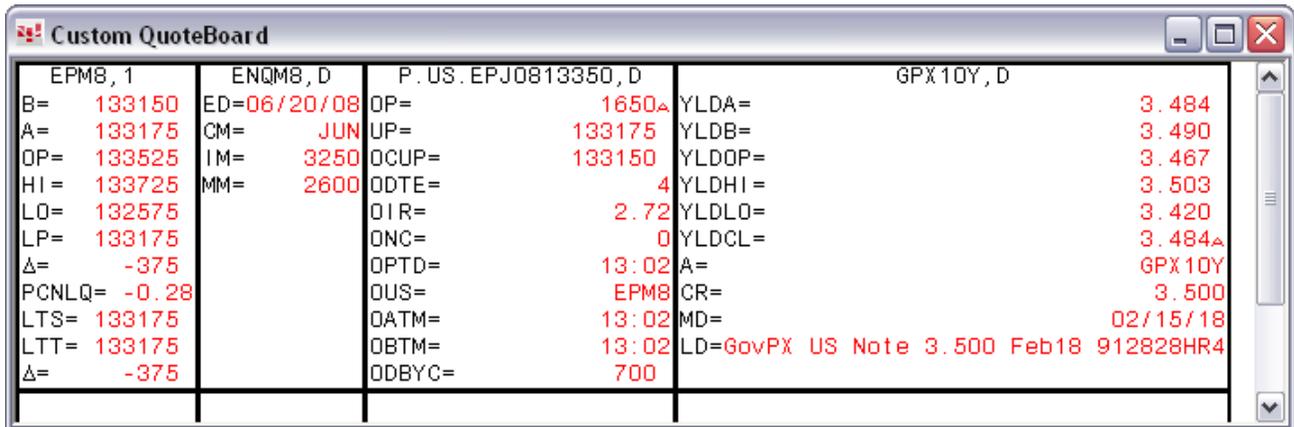
The Custom QuoteBoard is similar to a Quote Board, but you choose the data you want displayed in each cell. In addition to the over two hundred types of data available, Custom QuoteBoards also allow you to add study values to a cell.

Options traders will benefit from almost thirty data types that apply specifically to options.

Custom QuoteBoard Components

The data displayed on the Custom QuoteBoard is [chosen by you](#).

To delete a value within a cell, simply click on it and press DELETE.



The screenshot shows a window titled "Custom QuoteBoard" with a grid of financial data. The data is organized into four columns representing different instruments: EPMB, 1; ENQM8, D; P. US. EPJ0813350, D; and GPX10Y, D. Each row contains various data points such as bid/ask prices, yields, and other metrics, with some values highlighted in red.

EPMB, 1	ENQM8, D	P. US. EPJ0813350, D	GPX10Y, D
B= 133150	ED=06/20/08	OP= 1650 [▲]	YLDA= 3.484
A= 133175	CM= JUN	UP= 133175	YLDDB= 3.490
QP= 133525	IM= 3250	OCUP= 133150	YLDOP= 3.467
HI= 133725	MM= 2600	ODTE= 4	YLDHI= 3.503
LO= 132575		OIR= 2.72	YLDLO= 3.420
LP= 133175		ONC= 0	YLDCL= 3.484 [▲]
Δ= -375		OPTD= 13:02	A= GPX10Y
PCNLQ= -0.28		OUS= EPM8	CR= 3.500
LTS= 133175		OATM= 13:02	MD= 02/15/18
LTT= 133175		OBTM= 13:02	LD=GovPX US Note 3.500 Feb18 912828HR4
Δ= -375		ODBYC= 700	

Custom QuoteBoard Toolbar

The toolbar contains the Basic Studies, Custom Studies, Chart Type, and Functions buttons that appeared on the most recently displayed Chart toolbar as well as the Edit, LastNet, MWatch, QBoard, CustQB, QSS, and EQSS buttons that are standard on all quote windows.

This toolbar also includes these buttons:

<IntD> button

Changes from a historical time interval to an intraday interval beginning with the last used intraday value.

Right-click the button to move through the list in increasing order from 5-min to 10-min to 15-min to 30-min to 60-min to daily. If you continue to right-click, you will circle through the list.

Click the button to move through the list in decreasing order from daily down to 1-min. Once you reach 1-min, you need to right-click to move up the list.

<Hist> button

Changes from an intraday time interval to a historical interval beginning with the last used historical value. Values include: Y (annual), S (semi-annual), Q (quarter), M (month), W (week), D (day), and 60-min.

Right-click the button to move through the list in increasing order.

Click the button to move through the list in decreasing order.

Quarterly, Semi-Annual, and Annual.

Working with a Custom QuoteBoard

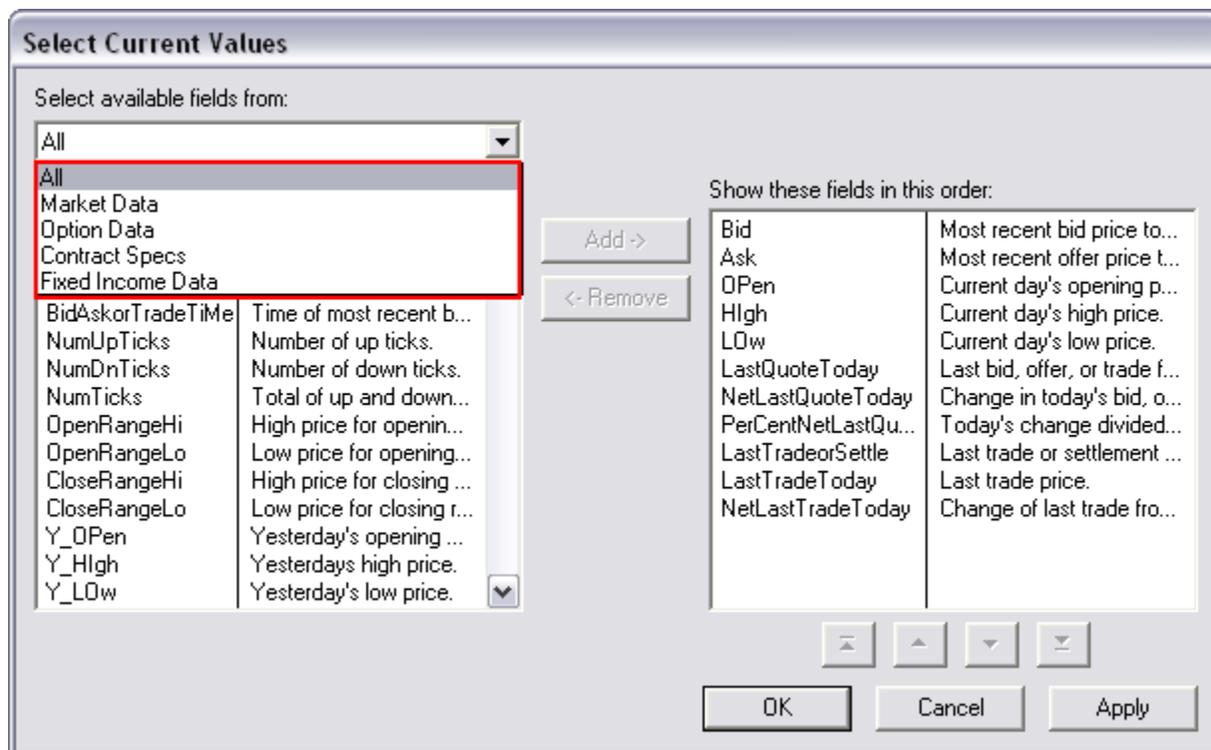
To begin, type a symbol and press ENTER. The quote data for that symbol will be displayed.

You can [edit a quote cell](#) and [enter a comment](#) just as you would on a Quote Board.

The benefits of using a Custom QuoteBoard include its interaction with options and studies.

Selecting data to display

1. Right-click a cell, and select **Customize Cell Content**. The Select Current Value window opens.
2. Choose whether you want to filter the available fields using the **Select available fields from** drop down.
3. Click an available field name.
4. Click the **Apply** button to make the change and keep the window open or **OK** to close it.



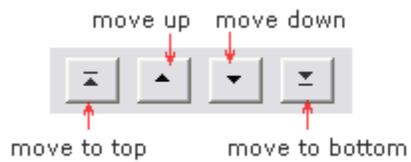
To remove columns

To delete a value within a cell, simply click on it and press DELETE. You do not have to return to this window to remove a value.

1. Click a field name in the **Show these fields** list.
2. Click the **Remove** button.

To move columns

Use the arrows at the bottom of the window to move the columns.



[Data definitions](#)

Adding study values

1. Right-click a cell, and select **Add Study**. The Add Study window opens.
2. Start typing a study name in the **Study** field. Matching options will be highlighted in the list below.
3. Choose whether you want to filter the list by category using the **Categories of Studies** drop down.
4. Click on the study you want to add.
5. Click **Add**.



Click **Setup** to open the study parameters.

To remove the study, simply click on the study name in the quote cell and press DELETE.

Double-click the study name to open a chart.

Modifying study parameters

1. Right-click the cell containing the study you want to change, and click **Modify Parameters**.
2. Change the study parameter settings.
3. Click **OK**.

Setting options preferences

1. Right-click the options cell, and click **Preferences**.
2. Change the options preferences settings.
3. Click **OK**.

Hiding labels

To save space, you may want to hide the data labels.

Right-click the cell you want to change, and click **Hide Study Names**.

This cell has hidden study names:

EPM8, 1
133050
133075
133525
133725
132575
133050
-500
-0.37
133050
133050
-500

Quote SpreadSheet

Quote SpreadSheets (QSS) enable you to display market data, options data, fixed income data, contract specs, and orders and positions information for a custom list of symbols.

It's similar to the Custom QuoteBoard, but data is listed across a row instead of being listed in an individual cell.



	Symbol	Open	High	Low	Bid	Ask	HTime	LTime	LTS	LTT	NLTT
1	EPMB	133525	133725	132575	132975	133000	12:12	07:29	132975	132975	-575
2	ENQMB	180700	181400	179150	179650	179675	11:51	07:29	179650 ^y	179650 ^y	-975
3	BOKB	6150	6190	6085	6142	6145	09:31	09:47	6150✓	6145	+156
4	CAMB	9765	9813	9762	9795	9792	10:11	07:50	9791✓	9789	+26
5	CKB	5900	5940	5870		5914	09:31	09:36	5916✓	5920	+74
6	NDMB	180400	181400	179300	179600	179700	11:52	08:43	179650 ^y	179650 ^y	-975
7	CPEKB	39455	39575	38155	38700	38750	02:36	04:04	38680	38680	-765
8	SKB	13570	13760	13570	13634	13640	10:42	09:30	13724✓	13750	+400
9	EDH9	97720	97725	97610	97610	97615	07:21	13:44	97615✓	97630	-50
10	LCMB	8965	9015	8935	9007	9005	12:58	09:19	9010✓	9015	+32
11	NKMB	12980	13000	12975	13000	12985	11:51	10:55	12980	12980	-75
12	CLKB	11075	11185	11060			13:26	13:03	11176✓	11185	+162
13											

You can also [trade](#) directly from the QSS.

QSS Toolbar

The Quote SpreadSheet toolbar includes the [Quote Board toolbar buttons](#) as well as:

Trade button

Logs you on to trade.

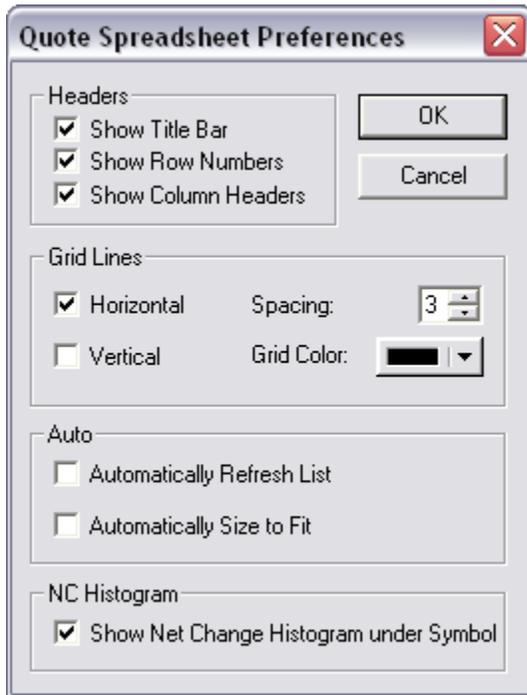
Cancel All button

Click this button to cancel all working orders.

Right-click this button to open a window that allows you to select the account, side, and symbol to cancel.

Setting QSS Preferences

You can change the QSS settings to customize the QSS display and behavior. To open the QSS preferences window, click the **Setup** button, and then click **Quote SpreadSheet Preferences**.



Showing headers

The screenshot shows a window titled "Quote SpreadSheet: 070707 (UA Trading: Refco)". The table contains the following data:

	Symbol	Open	High	Low	Dir	Size	Buy
1	EPH8	134075	136050	131575	▲	5	MKT
2	EPM8	134750	136500	132050	▲	10	MKT
3	ENQH8	185825	188700	183900	▲	20	MKT
4	ER2H8	68350	69290	66720	▼	50	MKT
5	BP6H8	19666	19683	19460	▼	100	MKT
6	CA6H8	9716	9785	9698	▼	200	MKT
7	EU6H8	14634	14689	14596	▼	20	MKT
8	EBH8	74480	75095	74350	▲	100	MKT
9	EDA9	97305	97360	97235		5	MKT
10	EEUH8	14638	14688	14597	▼	20	MKT
11	EJYH8	9443	9446	9343	▲	10	MKT
12	EMAG8	96180	96230	96165		5	MKT
13	EMDH8	76230	77350	75000	▼	50	MKT
14	EMIH8	113860	114410	110990	▼	50	MKT

To show or hide the title bar, select or unselect the **Show Title Bar** check box.

To show or hide the row numbers, select or unselect the **Show Row Numbers** check box.

To show or hide the column headers, select or unselect the **Show Column Headers** check box.

Showing gridlines

	Symbol	Open	High	Low	LQT
1	EPH8	134075	136050	131575	132575 ^A
2	EPM8	134750	136500	132050	133000 ^B
3	ENQH8	185825	188700	183900	185600 ^B
4	ER2H8	68350	69290	66720	67520
5	BP6H8	19666	19683	19460	19497 ^B
6	CA6H8	9716	9785	9698	9736 ^A
7	EU6H8	14634	14689	14596	14617
8	EBH8	74480	75095	74350	74990 ^A
9	EDA9	97305	97360	97235	97320 ^B
10	EEUH8	14638	14688	14597	14619 ^A
11	EJYH8	9443	9446	9343	9425 ^A
12	EMAG8	96180	96230	96165	96195 [✓]
13	EMDH8	76230	77350	75000	75850 ^B

Horizontal and vertical grid lines, with spacing at 6, and grid color in burgundy.

	Symbol	Open	High	Low	LQT
1	EPH8	134075	136050	131575	132650 ^A
2	EPM8	134750	136500	132050	133125 ^A
3	ENQH8	185825	188700	183900	185800 ^A
4	ER2H8	68350	69290	66720	67590 ^A
5	BP6H8	19666	19683	19460	19493 ^B
6	CA6H8	9716	9785	9698	9736 ^A
7	EU6H8	14634	14689	14596	14616 [✓]
8	EBH8	74480	75095	74350	74955 ^B
9	EDA9	97305	97360	97235	97320 ^B
10	EEUH8	14638	14688	14597	14615 ^B
11	EJYH8	9443	9446	9343	9412 ^A
12	EMAG8	96180	96230	96165	96195 [✓]
13	EMDH8	76230	77350	75000	75890 ^B

Horizontal and vertical grid lines, with spacing at 1, and grid color in bright green.

To show or hide the horizontal grid lines, select or unselect the **Horizontal** check box.

To show or hide the vertical grid lines, select or unselect the **Vertical** check box.

The spacing setting indicates how many lines to count before placing a horizontal grid line on the QSS.

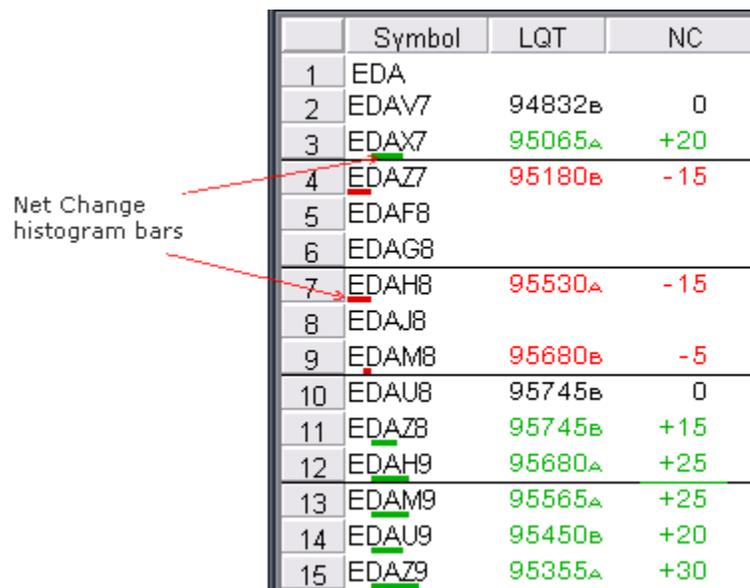
The grid color setting allows you to change the color of grid lines.

Setting automatic actions

Selecting the Automatically Refresh List check box tells the system to refresh the data in the QSS automatically.

If you select the Automatically Size to Fit check box, the system will automatically size the QSS when you remove or add columns. If this check box is not selected, the QSS remain the same size even after you add or remove columns.

Showing net change (NC) histogram



	Symbol	LQT	NC
1	EDA		
2	EDAV7	94832 _B	0
3	EDAX7	95065 _A	+20
4	EDAZ7	95180 _B	-15
5	EDAF8		
6	EDAG8		
7	EDAH8	95530 _A	-15
8	EDAJ8		
9	EDAM8	95680 _B	-5
10	EDAU8	95745 _B	0
11	EDAZ8	95745 _B	+15
12	EDAH9	95680 _A	+25
13	EDAM9	95565 _A	+25
14	EDAU9	95450 _B	+20
15	EDAZ9	95355 _A	+30

Select this check box to display the net change histogram bars.

Histograms display for futures and options only.

They display if there are two or more futures of the same commodity in the QSS window.

They display if there are two or more options of the same commodity, expiration, and side in the QSS window.

If NetChangeLastTrade is 0 or empty for the contract, the histogram will not be displayed.

Working with a QSS

To begin, type a symbol and press ENTER. The quote data for that symbol is displayed. Pressing CTRL+ENTER displays all the contracts associated with that commodity.

If you have entered a multi-symbol formula, press CTRL+ALT+SHIFT+ENTER to list the outrights of that formula also. For example, typing EP-ENQ and pressing CTRL+ALT+SHIFT+ENTER results in:

	Symbol	Last	NC
1	EPM1-ENQM	-98600	+225
2	ENQM1	229925 _B	-250
3	EPM1	131300 _B	-50

Many of the same quote window actions apply to the QSS. You can [edit a quote cell](#), [enter a comment](#), and [add a portfolio](#) just as you would on a Quote Board.

Choosing the [data to display](#) on the QSS is the same as with a Custom QuoteBoard.

Using offsets to view data in rows

	Symbol	NetA	NPA1	NPA2	NPA3
1	BOK8	+151	+144	+124	+125
2	BOK8[-1]	+144	+124	+125	
3	BOK8[-2]	+124	+125		
4	BOK8[-3]	+125			
5					

This example illustrates how offsets work. Let's say you want the Net Ask and Net Prior Ask one, two, and three ticks back. You can choose to display those columns, as in line 1.

You can also enter the offsets with the symbol to display the information in one column.

The NetA column displays the Net Ask for each tick. Notice that NPA1 in line 1 is equal to NetA in line 2. NPA2 in line 1 is equal to NetA in line 3 because of the [-2] offset.

As long as the data is available, you can use the offset entry for any symbol and any value.

Sorting rows

Right-click the **QSS** and click **Sort the Block**.

Symbols will be listed in alphabetical order.

Importing and Exporting with Excel

CQG offers users the ability to import lists of stocks and commodities into a QSS.

Your Excel spreadsheet must be one column only. When you enter symbols in lower case, the inverse value, 1/the value, will be displayed.

1. In Excel, select the column you wish to import.
2. On your keyboard, select Ctrl-C.
3. In CQG, open a Quote SpreadSheet.
4. Maximize the window, as only the visible fields will be populated.
5. Click in the first field on the QSS.
6. On your keyboard, select Ctrl-V. The QSS is populated with the symbols from your Excel spreadsheet. Your QSS will look similar to this window (which has been condensed):

To facilitate additional evaluation of Quote SpreadSheet data, you may wish to copy the information into an Excel spreadsheet.

1. In the QSS, select the data you want to export.
2. Right-click on the selected data and click **Copy to Excel**.
3. In Excel, right-click a cell.
4. Click **Paste**.

Enhanced Quote SpreadSheet

The Enhanced Quote SpreadSheet (EQSS) provides a high degree of flexibility in displaying quote data. Unlike the Quote SpreadSheet, you are not restricted to a single type of data in a column or to data for a specific instrument in a row.

When it is first opened, the EQSS displays numbered rows and at least one column header row that contains no text.

Cells are classified into six categories: column header, row header, comment, symbols, empty, and value. As you work in the EQSS, you will notice tool tips that help you identify the type and contents of cells.

EQSS Components

Header cells are at the top of the EQSS, and you can type directly into the cell.

Comment cells work here just as they do in any quote window. Comment cells are a way to insert headings and subheadings that are not at the top of the EQSS.

If you type in a cell, the system will assume you are typing a symbol unless you use comment notation.

Data cells contain a particular value for the symbol on that row.

	Grain	Open	High			
1	ZWAK8	8970	9276			
2	ZCEK8	5932	6094			
3	ZSEK8	13730	13980			
4						
5		bid	ask	upticks	downticks	
6	ZWAN8	9100	9120	1899	1874	
7	ZCEN8	6192	6204	1471	1413	
8	ZSEN8	13960	13992	2780	2815	
9						
10		last qte	last tde			
11	ZWAU8	9500 [▲]	9246			
12	ZCEU8	6270 [▲]	6270			
13	ZSEU8	13410 [■]	13450			
14						
15						

Cell Tool Tips

Hovering your mouse over a cell will display a tooltip, like this:

	ZSEN8@Bid	ask	upticks	downticks
ZWAN8	9100	9120	1899	1874
ZCEN8	6192	6204	1471	1413
ZSEN8	13960	13992	2780	2815

Here the tooltip tells us that this cell contains the bid price of ZSEN8.

EQSS Toolbar

The **Edit** button is not available with EQSS. Otherwise, its toolbar is the same as the [QSS toolbar](#).

Setting EQSS Preferences

EQSS preferences control the look of the spreadsheet. Select or clear the check boxes to show or hide gridlines, row numbers, column headers, and the title bar.

	Grain	Q	High		
1	ZWAK8	5970	9276		
2	ZCEK8	5932	6094		
3	ZSEK8	13730	13980		
4					
		bid	ask	upticks	downticks
5	ZWAN8	9100	9120	1899	1874
7	ZCEN8	6192	6204	1471	1413
8	ZSEN8	13960	13992	2780	2815
9					
10		last qte	last tde		
11	ZWAU8	9500 _A	9246		
12	ZCEU8	6270 _A	6270		
13	ZSEU8	13410 _B	13450		
14					
15					

Enhanced Quote Spreadsheet Preferences

- Show gridlines ①
- Show row numbers ②
- Show column headers ③
- Show title bar ④

OK Cancel

If you choose to hide the column headers, you can use [comments](#) to create headers for columns.

To set preferences, click the **Setup** button and then click **EQSS Preferences**.

Entering Data in Cells

If the text entered into the cell does not begin with a comment character, COG attempts to match the text to a known COG symbol.

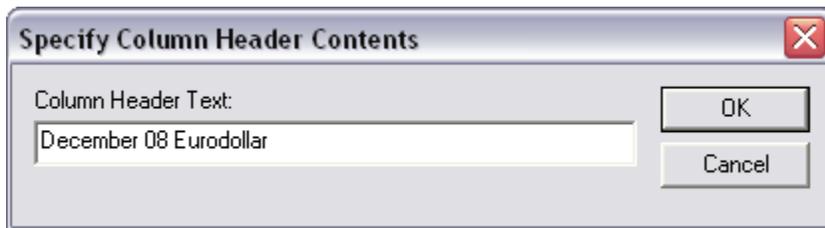
If you click a cell and then press ENTER, the cursor will change to indicate you are in edit mode. In edit mode, a right-click in a cell opens history list that allows you to choose a previously entered value.

The different type of cells in an EOSS is explained in "[EOSS Components](#)" on page 218.

Header cells

Click a header cell and type.

You can also press F2 to open the Specify Column Header Contents window.



Symbols cells

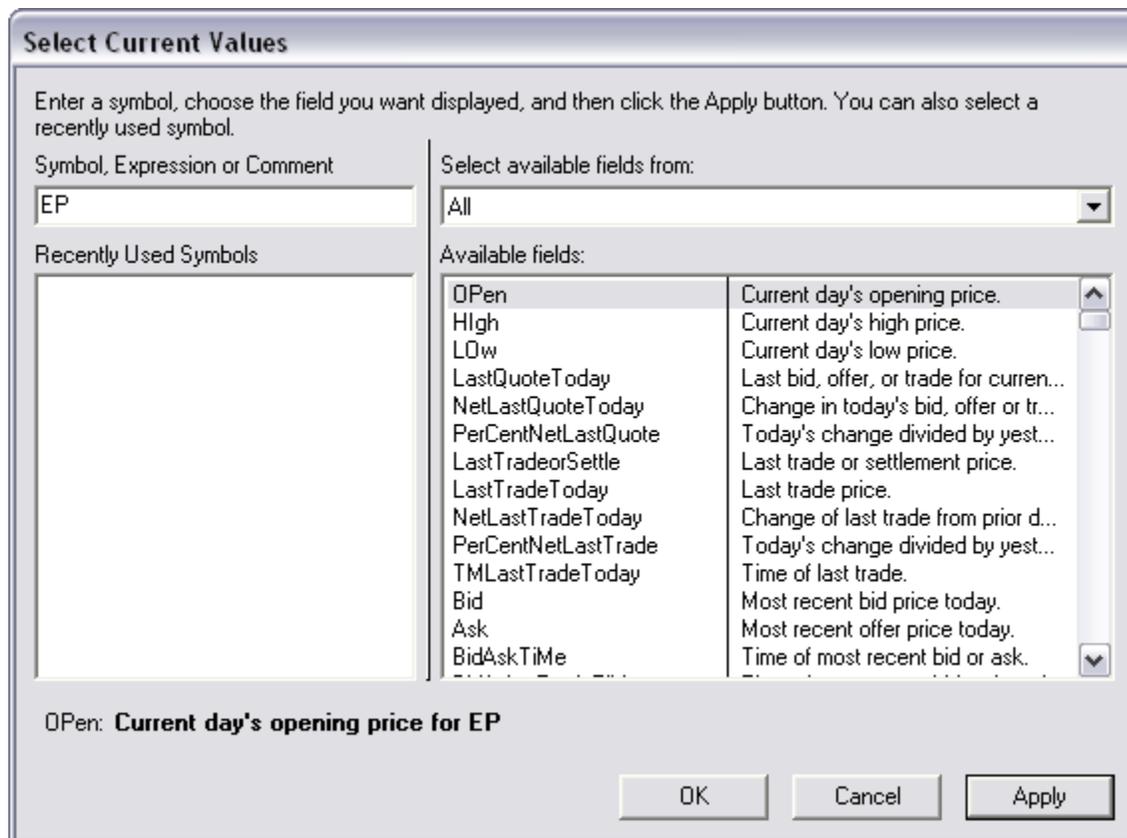
Click a cell, type the symbol, and press ENTER.

Comment cells

Click a cell, type an apostrophe followed by your comment.

Data cells

1. Right-click a cell, point to **Edit Cell**, and click **Contents**. You can also press F2.



2. If you click a cell on a row that contains a symbol, then that symbol will be listed automatically and the field you choose will apply to that symbol. If you click a cell on a row that does not contain a symbol, then enter the symbol before choosing the field.
3. Choose whether you want to filter the available fields using the **Select available fields from** drop down.
4. Click an available field name.
5. Click the **Apply** button.
6. Click the next cell that you want to format on the EQSS.
7. Click the field name in the list of Available fields.
8. Click the Apply button.
9. When you have finished entering values, click OK.

You can also type a formula directly into the cell:

<symbol or expression>!<value name>

The value name is found in the Available fields column on the Select Current Values window.

Examples:

SPM8!HIGH = today's high for the June 08 S&P

DJII!LASTQUOTETODAY = last quote today for Dow Jones Industrial Average

Working with Cells, Rows, and Columns

It is important to remember that there is no way to undo actions in an EOSS. Before making changes you are unsure of, you might want to save the page, so that you can revert to it if necessary.

Cut, copy, and paste cells

Cut, copy, and paste works as it does in any other software.

Right-click a cell, point to **Edit Cell**, and then click **Cut**, **Copy**, or **Paste**.

You can also use CTRL+C, CTRL+V, and CTRL+X.

Merge cells

Suppose you enter a long heading in a cell. You don't want the text to be cut off, but you also can't widen the entire column. You can merge cells to accommodate the heading.

this is a really long heading that wouldn't fit in one cell									

Right-click a cell, point to **Edit Cell**, and then click **Merge Right**. Continue these steps until your heading fits across the cell. You can also press CTRL+M.

To undo the merge, right-click the cell, point to **Edit Cell**, and then click **Un-merge**. You can also press CTRL+U.

Cut, copy, and paste rows

Cut, copy, and paste works as it does in any other software.

1. Click a row number to highlight the row. Drag your mouse to select multiple rows.
2. Right-click on the highlighted row, point to **Edit Row**, and then click **Cut**, **Copy**, or **Paste**.

You cannot use CTRL+C, CTRL+V, and CTRL+X.

Insert rows

Right-click a cell, point to **Edit Row**, and then click **Insert Above** or **Insert Below**.

You can add additional header rows in this way.

Delete rows

Right-click a cell in the row you want to delete, point to **Edit Row**, and then click **Delete Row(s)**.

You can select multiple rows.

Sort rows

To put the rows in alphabetical order, right-click a cell, point to **Sort Rows by Column**, and then click **Ascending** or **Descending**.

Insert columns

Right-click a cell, point to **Edit Column**, and then click **Insert Left** or **Insert Right**.

Delete columns

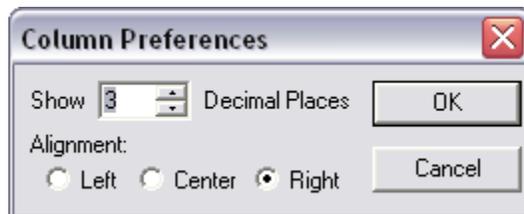
Right-click a cell in the column you want to delete, point to **Edit Column**, and then click **Delete**.

Change column font

Right-click a cell, point to **Edit Column**, and then click **Font**. The font window is like the font windows you would use in other software.

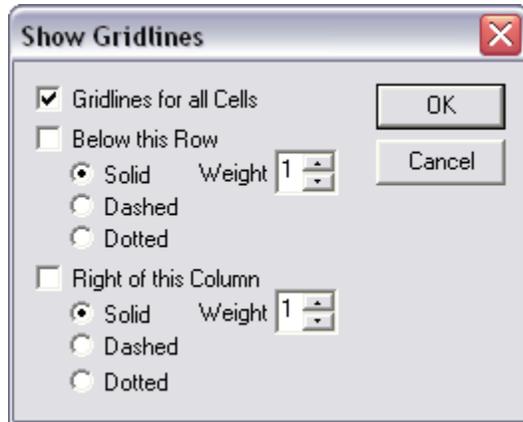
Column preferences

1. Right-click a cell, point to **Edit Column**, and then click **Preferences**.
2. Type the number of decimal places you want shown. You can also use the arrows to choose a number.
3. Choose the cell alignment.



Gridlines

Right-click a cell, point to **Edit Column**, and then click **Gridlines**.



This window allows you to customize gridlines, so that you can emphasize certain areas of the EQSS or provide visual cues to help you find information. Select the row or column check box, then select the type of line you want to display, and then choose how thick you want that line.

The first setting, to show gridlines for all cells, is directly connected to [preferences](#). If you change this setting, then the preference setting will change also.

When rows or cells are copied and pasted, gridlines specified for them are not pasted.

When a row or column is deleted, gridlines that were specified for that row or column remain.

Change column width

Drag the border of the column until you reach the desired width.

	high	low
.25	182375	181700
.75		
1.00	134475	134025
1.00	134475	134025
.25		134225

Double-click on the border, and the column will automatically resize to the smallest possible width.

Size to Fit

The EQSS can be sized, so that empty rows and columns will disappear.

Click the **Setup** button and then click **Size to Fit**.

Shortcut Keys

Shortcut keys consist of one or more keys you press on the keyboard to complete a task.

Press...		
F2	in a non-header cell	Opens the Select Current Values window
F2	in a header cell	Opens the Specify Column Header Contents window
Insert	in a cell not in edit mode	Inserts a row above
Delete	in a cell	Deletes cell contents
Double- click	in a symbol or value cell	Opens a chart
Double- click	EQSS title bar	Maximizes the window
Enter	in a cell	Turns on edit mode
Enter	in a cell in edit mode	Moves to the cell below and stays in edit mode
Arrow keys	in a cell	Moves up, down, left, right from cell to cell
Ctrl+M	in a cell	Merges right
Ctrl+U	in merged cells	Unmerges selected cells

Copying Data to Excel

1. Select the data from the EOSS.
2. Right-click on one of the selected cells.
3. Click **Copy to Excel**.
4. In Excel, click a cell.
5. Press CTRL+V to paste the data.

When pasted into Microsoft Excel, each value cell becomes a live-update real-time DDS link.

Trading on the Quote SpreadSheets

You can trade futures, options, FIT, FX contracts, and strategies on the Spreadsheet Trader (Quote SpreadSheet) and Enhanced Quote SpreadSheet.

Orders will be displayed on the DOMTrader and on the Orders and Positions window.

Click the **Trade** button on the main toolbar, and then click **Spreadsheet Trader** to open the QSS for trading.

You can also click the **Quotes** button and then either **Quote SpreadSheet** or **Enhanced Quote SpreadSheet**.

Enabling Trading Mode

You must be in trading mode in order to display trading column values on the QSS or EQSS and to place orders. To see if trading mode is turned on, right-click anywhere on the QSS or EQSS. If trading mode is on, it will be checked, like this:

Place an Order
 Trading mode

The system employs the last-used trading mode for an individual QSS or EQSS:

- When CQG IC restarts.
- When you log back on to the trading gateway.
- When you go to a page containing the Quote SpreadSheet or Enhanced Quote SpreadSheet.

For example: QSS A, QSS C, and QSS D are in trading mode. QSS B is not. CQG IC restarts. QSS A, QSS C, and QSS D remain in trading mode, while QSS B remains not in trading mode.

To turn trading mode on and off

There are several ways to turn the trading mode on and off:

- Click the **Trade** button.
- Right-click the **Trade** button and then click **Logon** or **Logoff**.
- Right-click on the QSS and select **Trading mode**.

Please note the following **Trade** button behavior:

Are you logged on to trade?	Are you in trading mode?	Click the Trade button to...
no	no	log on and turn on trading mode
yes	no	turn on trading mode
yes	yes	turn off trading mode

Creating a Spreadsheet to Place Orders

To trade from a QSS or EQSS, you need to add the trading columns to the display.

These columns include: Market Direction, Order Size, Buy Market, Sell Market, Working Buy, Working Sell, Filled Buy Orders, Filled Sell Orders, Open Position, OTE, and Incomplete. Market Data columns – including Bid, Ask, Last Bid, Last Ask, Volume Last Bid, and Volume Last Ask – are also used for trading.

For example:

	Symbol	Dir	Size	Buy	WKGB	FillB	Sell	WKGS	FillS	INCPLT	Pos	OTE
1	EPU0	▼	1	MKT	20	2	MKT	1	2		0	0
2	SPREAD(0.5*EPU0-0.2*ENQU0)	▼	1	MKT	5	1	MKT	2			0	0
3	AGGR(TYAU0&ZNEU0)	▲	1	MKT	10	1	MKT	5			1	(15+)

Column	Heading	Description
Market Direction	Dir	Displays up or down arrow based on the last best bid or best ask price change. If last quote is a best bid and it less than the previous best bid before the price change, then the market direction is down. If it's bigger than the previous best bid before the price change, then the market direction is up. If the last quote is a best ask, then the market direction shall be defined by ask quotes. Displays market direction only for the time that the QSS window was open and the Dir column was displayed.
Order Size	Size	Displays the order quantity that will be used for placing orders. The initial value is taken from your Trading Preferences.
Buy Market	Buy	Displays MKT. For FIT contracts, displays TAKE.
Sell Market	Sell	Displays MKT. For FIT contracts, displays HIT.
Working Buy Orders	WKGB	Displays the sum of the volume of unfilled buy orders for the selected symbol and account.
Working Sell Orders	WKGS	Displays the sum of the volume of unfilled sell orders for the selected symbol and account.
Filled Buy Orders	FillB	Sum of volume of filled buy orders for selected symbol and account.
Filled Sell Orders	FillS	Sum of volume of filled sell orders for selected symbol and account.

Column	Heading	Description
Open Position	Pos	<p>Displays the open position for the selected symbol and account. A flat open position is displayed as an empty cell.</p> <p>If the Show combined net position for relative commodities check box is selected in Trading Preferences, then this field displays the combined net position. "Net:" will precede the value.</p> <p>If the Show synthetic position for spread check box is selected in Trading Preferences, then this field will display the grouped spread position for the spread contract.</p> <p>If the open position includes manual fills, then this field displays "M" after the value.</p> <p>The Group strategy positions by filled spread orders preference (Strategy Order preferences) also governs Quote SpreadSheet and Enhanced Quote SpreadSheet.</p>
Open Trade Equity	OTE OTE+P/L	<p>Displays the value for the selected symbol and account based on OTE Trading Preferences. Negative values are represented with parentheses. If OTE is not a whole number, then it is rounded down and a plus sign will follow it, such as 226+.</p> <p>If the Show combined net position for relative commodities check box is selected in Trading Preferences, then this field displays the value for the combined net position. "Net:" will precede the value.</p> <p>If the Show synthetic position for spread check box is selected in Trading Preferences, then this field will display the value for the grouped spread position for the spread contract.</p> <p>If the open position includes manual fills, then this field displays "M" after the value.</p>
Incomplete	INCPLT	<p>For spread trading. Displays sum of volume of incomplete orders for selected symbol and account. This field blinks when a incomplete order occurs.</p>

To add trading columns to the QSS

1. Right-click the QSS.
2. Click **Customize Columns**. The **Select Current Values** window opens.
3. Select **Orders and Positions** from the drop-down menu to filter the list of available fields.
4. Add columns from the list on the left to the list on the right using the **Add** button.
5. Use the arrows to move columns up and down.
6. Click **OK**.

To add trading columns to the EQSS

1. Select a cell and right-click.
2. Point to **Edit Cell** and then click **Contents**. The **Select Current Values** window opens.
3. Select **Orders and Positions** from the drop-down menu to filter the list of available fields.
4. Click the field name.
5. To add additional fields, click **Apply** between each addition.
6. Click **OK**.

To change the color of trading columns

1. Click the **Setup** button.
2. Click Quote SpreadSheet Colors or EQSS Colors.
3. In the **Color Element** field, scroll down to **Trading colors**.
4. Click on the text or background that you wish to change. The color palette opens.
5. Click the desired color.

Buy/Bid Text: applies to Buy cell

Buy/Bid Background: applies to Buy cell

Sell/Ask Text: applies to Sell cell

Sell/Ask Background: applies to Sell cell

Long/MktUp Text: applies to WKGB, long position, positive OTE, and up market direction

Long/MktUp Background: applies to WKGB, long position, positive OTE, and up market direction

Short/MktDown Text: applies to WKGS, short position, negative OTE, and down market direction

Short/MktDown Background: applies to WKGS, short position, negative OTE, and

down market direction

Size Text: applies to Size cell

Size Background: applies to Size cell

Zero Position/OTE Text: applies to Position equal to zero and OTE cells

Volume Last Bid and Volume Last Ask columns will echo these colors if Enable Sweep Mode is turned on. (**Setup > Trading Preferences > Display > Enable Sweep Mode**).

To change the name of the window

1. Right-click on the title bar.
2. Click Rename Window.
3. Enter a new name in the **To** field.
4. Click **OK**.

Setting Trading Preferences for QSS and EQSS

Setting preferences for spreadsheet trading is the same as it is for other trading interfaces. Some preferences are more relevant to QSS and EQSS trading:

- Displaying and calculating OTE
- Confirming order actions
- Setting default order quantity

Placing and Managing Orders on the QSS and EQSS

You can place orders directly on the QSS or EQSS or by launching a trading interface from the spreadsheet.

To change the order size

There are two ways to change the order size:

- Click the **Size** field and then enter a new order quantity using your keyboard or mouse wheel.
- Click the **Size** field and then right-click to increase the quantity and left-click to decrease the quantity (down to 1).

Right-clicking increases the quantity according to your order quantity settings. For example, if your custom order size buttons are 1, 5, 10, 20, 50, and 100, then right-clicking will increase the quantity from 1 to 5 to 20 to 50 to 100 and then by one hundred for each click. If the last custom value is 500, then each right-click after that value will increase by 500.

(Setup > Trading Preferences > Risk > Order quantities for all symbols).

To place a market order



Click the **MKT** button in the **Buy** or **Sell** cell. A Day order will be placed according to these parameters:

For FIT contracts:

Buy: aggressive buy at best ask

Sell: aggressive sell at best bid

For all other contracts:

Buy: market buy

Sell: market sell

If confirmation messages are turned off, then double-clicking on a cell will create two orders.

To place a limit order

Bid	Ask
145200	145225
190275	190300
11003	11004
108235	108240

Click the **Bid** or **Ask** cell. A DAY order will be placed according to these parameters:

For FIT contracts:

Ask: passive sell at best ask or last ask cell

Bid: passive buy at best bid or last bid cell

For all other contracts:

Ask: limit sell at best ask or last ask cell

Bid: limit buy at best bid or last bid cell

If confirmation messages are turned off, then double-clicking a cell will create two orders.

To place an order at best price

If enable sweep mode is selected, then you can also place orders by right-clicking a cell.

Right-click the **VolumeLastBid** or **VolumeLastAsk** cell. A DAY order will be placed according to these parameters:

For FIT contracts:

VolumeLastAsk: passive buy at best ask with volume last ask quantity

VolumeLastBid: passive sell at best bid with volume last bid quantity

For all other contracts:

VolumeLastAsk: Limit Buy at Best Ask with VolumeLastAsk quantity

VolumeLastBid: Limit Sell at Best Bid with VolumeLastBid quantity

Right-click the **Bid**, **Last Bid**, **Ask**, or **Last Ask** column. A DAY order will be placed according to these parameters:

For FIT contracts:

Ask or Last Ask: passive buy at best ask

Bid or Last Bid: passive sell at best bid

For all other contracts:

Ask or Last Ask: limit buy at best ask

Bid or Last Bid: limit sell at best bid

To enter synthetic spreads

Here's an example of a QSS used to trade spreads.

	Symbol	Last	Buy	Sell	Pos	Size	WKGB	WKGS	Dir	FillB	FillS	INCLPT
1	SPREAD(0.5*EPZ9-0.2*ENQZ9)	19325 _B	MKT	MKT	0	1	5	10				
2	SPREAD(CLEZ9-ETZ9, L1, , 1:1)	-2 _B	MKT	MKT	0	1	60		▼	20		5
3	SPREAD(1.6*TYAZ9-USAZ9, , , 5:3)	70200 _A	MKT	MKT	(27)	1	5					26
4	SPREAD(1.5*FVAZ9-TYAZ9, , , 3:2)	56170 _A	MKT	MKT	0	1	2	10		5		
5	SPREAD(1.6*FVAZ9-USAZ9, , , 5:3)	67070 _A	MKT	MKT	(8)	1						11
6	SPREAD(42*HOEZ9-CLEZ9, L2)	649 _B	MKT	MKT	0	1			▼			2
7												

The Quote SpreadSheet (QSS) includes an **INCLPT** (incomplete) field to enhance the Orders and Positions QSS for spread trading. It blinks when an incomplete order occurs.

If you would like to see synthetic spread positions in the **Pos** field, make sure that option is selected in Trading Preferences.

Even if you are not trading directly from it, the QSS is a helpful tool for managing incomplete orders. Link the QSS to the DOMTrader (or the trading application you're using making sure the QSS is the parent window. If an incomplete order occurs, click the **INCLPT** field on the QSS to go directly to the DOMTrader for the leg that's incomplete.

The collage consists of four screenshots from the Quote SpreadSheet application:

- Top Left:** A window titled "Quote SS: PSspread201" showing a list of symbols and their INCLPT status. The symbols are:

Symbol	INCLPT
1 SPREAD(EPZ9-EPH0)	2
2 SPREAD(EPZ9-TFEZ9)	
3 SPREAD(NKDZ9-10*EPZ9)	
4 SPREAD(0.4*EPZ9-ENQZ9)	
5	
- Top Middle:** A window titled "PSspread201 - 0.4*EPZ9" showing an order book for EPZ9. The order book has columns for price, size, and time. The top of the order book shows:

Price	Size	Time
110875	511	217
110850	1289	35K
110825	1390	26K
110800	1278	28K
110775	1255	20K
110750	1416	31K
- Top Right:** A window titled "PSspread201 - F.U..." showing an order book for EPHO. The order book has columns for price, size, and time. The top of the order book shows:

Price	Size	Time
110375	84	217
110350	73	55
110325	91	17
110300	67	28
110275	207	23
110250	72	58
- Bottom:** A row of navigation buttons for each window, including "All" and "Global" options, and a row of buttons for "1", "1", "2", "3", "5", "10", "25".

To place an order using a trading interface

1. Right-click the symbol, bid, ask, direction, buy, sell, working buy, working sell, OTE, Volume Last Bid, or Volume Last Ask column.
2. Click **Place an Order**. The DOMTrader, Order Ticket, or Simple Order Ticket opens, based on your setting in System Preferences (**Setup > System Preferences > Misc > Preferred Order Entry Display**).
3. Use the DOMTrader or Order Ticket as usual to place the order.

To open the Orders & Positions window

Click the **Pos**, **WKGB**, or **WKGS** cell. The Orders & Positions window opens.

If a window is already open, then it will be filtered by the selected symbol and account and the Open Position Summary will be displayed.

To liquidate a position

1. Right-click the **Pos** cell.
2. Click **Liquidate this Position**. A confirmation message will be displayed if your preferences indicate so.
3. Click **Liquidate**.

To reverse a position

1. Right-click the **Pos** cell.
2. Click **Reverse this Position**. A confirmation message will be displayed if your preferences indicate so.
3. Click **Reverse**.

To cancel an order

1. Right-click the working order cell. A confirmation message will be displayed if your preferences indicate so.
2. Click **Yes**.

To cancel all orders

Click the **Cancel All** button on the toolbar.

Right-click the **Cancel All** button to select the account, side, and symbol to cancel:



To change the account

Right-click the title bar of the Quote SpreadSheet and Enhanced Quote SpreadSheet to open Account Picker.

When you change the account on the QSS or EQSS, the account is changed in grouped and linked child trading windows.

Please note that you must be in trading mode.

Spread Matrix and Spread Pyramid

Define, monitor, and trade spreads on CQG's Spread Matrix and Spread Pyramid:

- intracommodity and intercommodity spreads
- exchange-traded and synthetic spreads
- calendar, butterfly, and condor spreads

CQG offers two one-stop data and trading applications, each designed specifically for the needs of a particular group of traders.

The Spread Matrix is ideal for intercommodity, synthetic spreads. The Spread Pyramid offers calendar, butterfly, and condor spread strategies in a flexible application allowing you to manage the display.

This image of the Spread Pyramid shows synthetic and exchange-traded prices for an EDA intracommodity spread:



This image of the Spread Matrix shows synthetic prices for a HOE-CLE intercommodity spread:

		CLEX10	CLEZ10	CLEF11	CLEG11	CLEH11	CLEJ11
(42*HOE-CLE, L2)		308504	207363	85254	41531	27420	
		133	142	151	152	145	140
		(2)	(25)	(3)	(28)	(3)	(1)
HOEX10	37004	X10-X10	X10-Z10	X10-F11	X10-G11	X10-H11	X10-J11
Δ	168	170A	1385	1388A	1303B	1306	1226
(5)	(2)	(5)	(2)	(5)	(2)	(5)	(1)
HOEZ10	24311	Z10-X10	Z10-Z10	Z10-F11	Z10-G11	Z10-H11	Z10-J11
Δ	202	204A	1466	1469A	1384B	1387	1307
(5)	(2)	(5)	(2)	(5)	(2)	(5)	(1)
HOEF11	9415	F11-X10	F11-Z10	F11-F11	F11-G11	F11-H11	F11-J11
Δ	228	231A	1556B	1559	1474B	1477	1397B
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
HOEG11	3075	G11-X10	G11-Z10	G11-F11	G11-G11	G11-H11	G11-J11
Δ	252	257A	1612	1616A	1530B	1534	1453
(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
HOEH11	2249	H11-X10	H11-Z10	H11-F11	H11-G11	H11-H11	H11-J11
Δ	270	277A	1612	1617A	1530B	1535	1453
(4)	(2)	(4)	(2)	(4)	(2)	(4)	(2)
HOEJ11	1856	J11-X10	J11-Z10	J11-F11	J11-G11	J11-H11	J11-J11
Δ	280	290A	1580	1586A	1498B	1504	1421
(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)

[Read more about the components](#)

[Read more about display settings](#)

Take advantage of CQG's chart tools, custom studies, portfolio management, and other advanced analytics by combining them with the Spread Matrix and Spread Pyramid in ways that are relevant to you as a spread trader.

Trading with the Spreads Matrix and Spreads Matrix Pyramid requires an enablement. Receiving DOM volume data also requires an enablement.

Spread Matrix and Spread Pyramid Components

The components listed here provide you with introductory information.

Both the Spread Matrix and Spread Pyramid displays are customizable. You can add or remove column and row headers; select from four price displays; choose a horizontal or vertical layout; select colors for buttons; and add buy, sell, market, and inside market buttons. The [preferences section](#) provides details of all settings.

You can also configure [months and strategies](#) on the Spread Pyramid and [months](#) on the Spread Matrix.

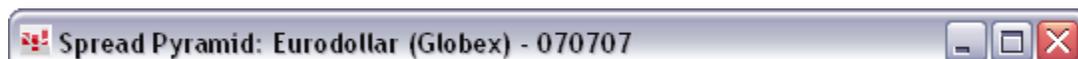
Title bar

The title bar shows the account and [spread details](#), such as symbol, formula, and trade ratio. When you have entered a QFormula, it displays the QFormula name.

Right-click the title bar to open the **Account Selector** to change accounts.



Spread Matrix Intercommodity



Spread Pyramid Intracommodity



Spread Matrix QFormula

Size buttons

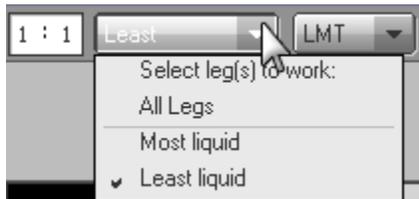


The size buttons allow you to change the quantity that will be used when you place orders. The **Size** entry box displays your default order quantity and allows you to directly enter a number in to override the default. Clicking **Size** returns the quantity to the default, in this case 3.

You set the button values on the **Risk** tab in preferences.

The size buttons are displayed only if you are in trading mode.

Synthetic spread trading fields

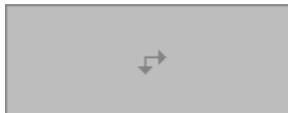


Use these fields to select the spread ratio, which leg to work, and whether the spread should be completed using a market or a limit order.

The Spread Matrix allows only spreads with two legs.

These fields are displayed only if you are in trading mode.

Intersection button



This Spread Matrix button is used to switch the commodity placement on the matrix. If CLE contracts are across the top of the matrix and HOE contracts are down the left side of the matrix, clicking this button reverses that placement, so that HOE is on top and CLE is down the side.

When you use a QFormula on the Spread Matrix, that formula is included on the arrow button.



Spread Matrix and Spread Pyramid cells

The elements displayed on the Spread Matrix and Spread Pyramid depend on your [display settings](#).

Spread Matrix (intercommodity)

	(42*HOE-CLE, L2)	CLEX10 311326	CLEZ10 209583	
		Δ 123 B Δ 125 A	Δ 132 B Δ 133 A	
		(7)	(8)	(11) (2)
DOM volume	HOEX10 38167	X10-X10	X10-Z10	
	Δ 142 B Δ 149 A	1383 B 1389	1302 B 1307 A	
	(1) (3)	(1) (3)	(1) (3)	
	HOEZ10 24902	Z10-X10	Z10-Z10	
	Δ 173 B Δ 182 A	1463 B 1469	1382 B 1387 A	
	(1) (2)	(1) (2)	(1) (2)	
Net change	HOEF11 9631	F11-X10	F11-Z10	
	Δ 199 B Δ 208 A	1553 B 1560	1472 B 1478 A	
	(1) (2)	(1) (2)	(1) (2)	

Note that the green cell indicates a long position.

1 :	HOEX10 - Heating Oil (Globex), Nov 10		
	Long 5 @ 23012		
(42*	WrkgS: 0	CLEZ10	3334 B
	WrkgB: 0	(3)	
	HOEX10 38813	X10-X10	X10-Z10
	Δ 2296 B Δ 2297 A	1388 B 1398	1306 B
	(9) (2)	(2) (2)	(2)
	HOEZ10 25552	Z10-X10	Z10-Z10
	Δ 23153 B Δ 23180 A	1468 B 1483	1386 B
	(1) (1)	(1) (1)	(1)

Spread Pyramid (intracommodity)

	Outrights	Calendars	Butterflies	Condors
DOM volume	Z10 94881	S3Z10 6623	L3Z10 1792	C3Z10 1
	Δ 15 B Δ 20 A	50 B 55 A	-10 B -5 A	-35 B -25 A
	(11762) (26567)	(20517) (2360)	(1918) (2055)	(16) (2360)
	H11 93594	S3H11 10565	L3H11 2172	C3H11 6
	Δ 20 B Δ 25 A	60 B 65 A	-25 B -20 A	-55 B -50 A
	(14881) (6575)	(666) (17019)	(7) (1295)	(666) (21)
Net change	M11 135047	S3M11 8374	L3M11 1807	C3M11 2
	Δ 25 B Δ 30 A	80 B 85 A	-30 B -25 A	-45 B -40 A
	(1881) (3071)	(13058) (1)	(1832) (2247)	(15) (49)
	U11 135435	S3U11 10263	L3U11 2793	C3U11 19
	Δ 25 B Δ 30 A	110 B 115 A	-15 B -10 A	-35 B -30 A
	(2639) (1169)	(9050) (757)	(10) (7095)	(1048) (4)
	Z11 149175	S3Z11 7748	L3Z11 1481	C3Z11 21
	Δ 20 B Δ 25 A	125 B 130 A	-20 B -15 A	
	(5499) (384)	(16526) (3693)	(10688) (1188)	
	H12 111006	S3H12 6046		
	Δ 15 B Δ 20 A	140 B 145 A		
	(118) (5610)			

Spread Pyramid columns

The Spread Pyramid has columns for outright, calendar, butterfly, and condor spreads:

Outrights		Calendars				Butterflies				Condors			
H09	113152	S3H09	9190	L3H09	2488	H09-M09-U09+H10							
98745 B	98747 A	-51 B	-1 B	0 A	0 A	-57 B	-51 B	-50 A	-50 A	-247 B			-240 A
(392)	(66)	(83)	(7)	(9)	(66)	(7)	(45)	(11)	(9)	(7)	Buy	Sell	(9)
M09	115864	S3M09	24336	M09-2*U09+H10									
98745 B	98750 A	45 B	50 B	55 A	55 A	-195 B				-140 B			-130 A
(856)	(83)	(239)	(433)	(1434)	(83)	(265)	Buy	Sell	(233)	(433)	Buy	Sell	(1434)
U09	110973	S6U09	6991	U09-2*H10+M10									
98695 B	98700 A	235 B	240 B	245 A	245 A	50 B				60 A			
(609)	(239)	(609)	(233)	(285)	(239)	(233)	Buy	Sell	(285)	(433)	Buy	Sell	(1434)
H10	89007	S3H10	17885	L3H10	2339	U09-H10-M10+U10							
98455 B	98460 A	185 B	185 B	190 A	195 A	-25 B	-20 B	-15 A	-15 A	30 B			40 A
(343)	(713)	(33)	(15713)	(6136)	(713)	(13384)	(599)	(5841)	(5360)	(233)	Buy	Sell	(285)
M10	77343	S3M10	8599	L3M10	933	C3H10							
98265 B	98270 A	205 B	205 B	210 A	210 A	-55 B							-45 A
(882)	(33)	(630)	(5360)	(13384)	(33)	(15713)	Buy	Sell	(221)				(221)
U10	43256	S3U10	7451	L3U10	1003	C3M10							
98060 B	98065 A	235 B	235 B	240 A	245 A	30 B							40 A
(127)	(630)	(127)	(221)	(17586)	(301)	(4856)	Buy	Sell	(347)				(347)
Z10	27617	S3Z10	2471	L3Z10	543	C3U10							
97820 B	97825 A	165 B	170 B	175 A	175 A	35 B							45 A
(301)	(151)	(116)	(347)	(4856)	(94)	(221)	Buy	Sell	(4935)				(4935)
H11	10604	S3H11	8055	L3H11	793	C3Z10							
97650 B	97655 A	195 B	195 B	200 A	205 A	-20 B							-10 A
(94)	(116)	(2)	(4935)	(774)	(116)	(135)	Buy	Sell	(4592)				(4592)
M11	9904	S3M11	1215	L3M11	169	C3H11							
97450 B	97455 A	185 B	185 B	190 A	195 A	5 B							15 A
(375)	(2)	(1)	(4592)	(135)	(2)	(786)	Buy	Sell	(774)				(774)
U11	5281	S3U11	690	L3U11	169								
97260 B	97265 A	180 B	185 B	190 A	190 A								
(309)	(1)	(25)	(2282)	(786)	(1)								
Z11	8369												
97075 B	97080 A												
(1)	(25)												

You are able to [select the columns](#) to display.

A calendar spread is a simultaneous buy and sell order for the same commodity with different delivery months.

A butterfly spread is a simultaneous buy/sell order for one contract in the near delivery month, sell/buy order for two contracts in a future delivery month, and buy/sell order for one contract with an even later expiration. The gaps between the months must be equal.

A condor spread is a simultaneous buy/sell order for one contract in the near delivery month, sell/buy for one contract in each of the next two delivery months, and a buy/sell for one contract in the fourth month.

Buy and Sell buttons

Click one of the buttons to place an order. For example, to buy the exchange-traded spread at the market, click the light green button. To sell the synthetic spread at the limit price, click the red button.

Buy		Sell		
S3M10		9034		
205 B	205 B	210 A	215 A	Limit
(45)	(16623)	(371)	(21)	Market

Exchange-traded

Synthetic

When DOM Volume is turned off, the buttons are labeled buy and sell.

S3M10		9038		
205 B	205 B	210 A	215 A	
Buy	Buy	Sell	Sell	

Hover your mouse over the button for a tooltip:

S3M10		9038		
205 B	205 B	210 A	215 A	
Buy	Buy	Sell	Sell	

5 1 EDAS3M10 @ 210 LMT

When you are logged on to trade, the cells contain buy market and sell market buttons. The buttons in the cell that is selected display bid and ask quantities.

You can change the color of these buttons and turn these buttons off in [preferences](#).

Scroll bar

Both the Spread Matrix and the Spread Pyramid have a scroll bar at the bottom of the window, so that you can move to part of the display that aren't displayed due to a smaller window. The Spread Pyramid scroll bar moves the width of the window. The Spread Matrix scroll bar works a bit differently, as seen in this image:

M10	88295			H10-M10	22294			M10	88295		
98220 B	98225 A	60 A	465 A	190 B	190 B	195 A	200 A	98220 B	98225 A		
(671)	(92)	(3)	(671)	(92)	(15232)	(101)	(671)	(671)	(92)		
U10	48237			H10-U10	7488			M10-U10	9687		
98010 B	98015 A	75 A	675 A	400 B	405 B	410 A	410 A	205 B	210 B	215 A	215 A
(160)	(780)	(7)	(160)	(489)	(331)	(633)	(160)	(671)	(8192)	(3773)	(92)
Z10	31115			H10-Z10	717			M10-Z10	4844		
97770 B	97775 A	15 A	915 A	640 B	640 B	650 A	650 A	445 B	445 B	455 A	455 A
(374)	(13)	(9)	(374)	(13)	(189)	(439)	(374)	(13)	(854)	(886)	(92)
H11	12552			H10-H11	867			M10-H11	933		
97600 B	97605 A	85 A	1085 A	810 B	815 B	820 A	820 A	815 B	620 B	625 A	625 A
(26)	(438)	(5)	(26)	(438)	(65)	(37)	(26)	(438)	(41)	(26)	(26)
M11	11143			H10-M11	32			M10-M11	969		
97395 B	97405 A	90 A	1290 A	1010 B	1010 B	1025 A	1025 A	815 B	820 B	830 A	830 A
(175)	(401)	(8)	(175)	(401)	(153)	(137)	(175)	(401)	(11)	(176)	(92)
U11	6096			H10-U11	2			M10-U11	38		
97205 B	97210 A	80 A	1480 A	1205 B	1205 B	1215 A	1215 A	1010 B	1010 B	1020 A	1020 A
(77)	(96)	(1)	(77)	(96)	(5)	(51)	(77)	(96)	(12)	(51)	(77)

remains static when you scroll

scroll bar

Spread Matrix and Spread Pyramid Toolbar

The Spread Matrix and Spread Pyramid have the same toolbar with these buttons:

SprdMtx button

If you have a Spread Pyramid window open, click this button to open a Spread Matrix window.

If you have both a Spread Pyramid and a Spread Matrix window open, click this button to move to the Spread Matrix from the Spread Pyramid.

SprdPyr button

If you have a Spread Matrix window open, click this button to open a Spread Pyramid window.

If you have both a Spread Pyramid and a Spread Matrix window open, click this button to move from the Spread Matrix to the Spread Pyramid.

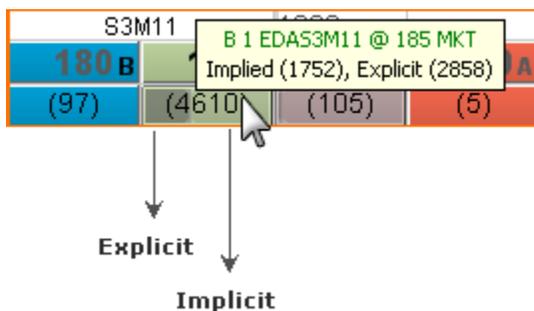
Trade button

Click this button to log on to trade. Once you are logged on to trade, this button works as a toggle to show and hide the trading buttons on the Spread Matrix and Spread Pyramid. You have to click this button to activate trading on each spread interface you open.

DOM Vol. button

Click this button to display DOM Volume.

DOM Volume includes both implied and explicit volume for exchange-traded spreads. If you hover the mouse over the cell, a tool tip provides details. Shading indicates the ratio of implied to explicit:



Trading with the Spreads Matrix and Spreads Matrix Pyramid requires an enablement. You may, however, see DOM Volume even without a trading enablement.

OrdPos button

Click this button to open the Orders and Positions window.

Cancel All button

Click this button to cancel all working orders.

Right-click this button to open a window that allows you to select the account, side, and symbol to cancel.

Setting Spread Matrix and Spread Pyramid Display Preferences

Display preferences allow you to change the headers, color, font, and button style of the Spread Matrix and Spread Pyramid. To go to preferences, click **Setup**, then click **Trading Preferences**. You can also right-click the [intersection](#) button, then click **Preferences**.

Select a color theme

Select a color theme

Light theme 1

Dark theme 1

Dark theme 2

Choose one of three themes:

Z7	F8	G8	H8	K8
532377 ^A	927178 ^A	922834 ^A	982748 ^A	784791 ^A
308489 ^B	686702 ^B	665404 ^B	475041 ^B	230912 ^B
Z7	Z7-F8	Z7-G8	Z7-H8	Z7-K8
532377 ^A	-7306 ^A	3132 ^A	-451 ^A	8402 ^A
308489 ^B	-9413 ^B	627 ^B	-2588 ^B	2105 ^B
F8	F8-G8	F8-H8	F8-K8	
927178 ^A	8822 ^A	6028 ^A	-3070 ^A	
686702 ^B	4287 ^B	5629 ^B	-5476 ^B	
G8	G8-H8	G8-K8		
922834 ^A	9615 ^A	9638 ^A		
665404 ^B	6959 ^B	9599 ^B		
H8	H8-K8			
982748 ^A	784791 ^A			
475041 ^B	230912 ^B			

Light theme

Z7	F8	G8	H8	K8
532377 ^A	927178 ^A	922834 ^A	982748 ^A	784791 ^A
308489 ^B	686702 ^B	665404 ^B	475041 ^B	230912 ^B
Z7	Z7-F8	Z7-G8	Z7-H8	Z7-K8
532377 ^A	-7306 ^A	3132 ^A	-451 ^A	8402 ^A
308489 ^B	-9413 ^B	627 ^B	-2588 ^B	2105 ^B
F8	F8-G8	F8-H8	F8-K8	
927178 ^A	8822 ^A	6028 ^A	-3070 ^A	
686702 ^B	4287 ^B	5629 ^B	-5476 ^B	
G8	G8-H8	G8-K8		
922834 ^A	9615 ^A	9638 ^A		
665404 ^B	6959 ^B	9599 ^B		
H8	H8-K8			
982748 ^A	784791 ^A			
475041 ^B	230912 ^B			

Dark theme 1

Z7	F8	G8	H8	K8
532377 ^A	927178 ^A	922834 ^A	982748 ^A	784791 ^A
308489 ^B	686702 ^B	665404 ^B	475041 ^B	230912 ^B
Z7	Z7-F8	Z7-G8	Z7-H8	Z7-K8
532377 ^A	-7306 ^A	3132 ^A	-451 ^A	8402 ^A
308489 ^B	-9413 ^B	627 ^B	-2588 ^B	2105 ^B
F8	F8-G8	F8-H8	F8-K8	
927178 ^A	8822 ^A	6028 ^A	-3070 ^A	
686702 ^B	4287 ^B	5629 ^B	-5476 ^B	
G8	G8-H8	G8-K8		
922834 ^A	9615 ^A	9638 ^A		
665404 ^B	6959 ^B	9599 ^B		
H8	H8-K8			
982748 ^A	784791 ^A			
475041 ^B	230912 ^B			

Dark theme 2

Dark theme 1 is black; dark theme 2 is gray.

Show headers

For Spread Matrix:

Show quotes for outrights in

- Column headers
- Display in Net Change
- Row headers

For Spread Pyramid:

- Show column headers
- Display in Net Change

The row header and column header on the Spread Matrix show quotes for the commodity in the row and column. Select the check box for the headers you wish to display.

With headers

(42*HOE-CLE, L2)		CLEX10	311326	CLEZ10	209583
		Δ 123 _B	Δ 125 _A	Δ 132 _B	Δ 133 _A
		(7)	(6)	(11)	(2)
HOEX10	38167	X10-X10		X10-Z10	
Δ 142 _B	Δ 149 _A	1383 _B	1389 _A	1302 _B	1307 _A
(1)	(3)	(1)	(3)	(1)	(3)
HOEZ10	24902	Z10-X10		Z10-Z10	
Δ 173 _B	Δ 182 _A	1463 _B	1469 _A	1382 _B	1387 _A
(1)	(2)	(1)	(2)	(1)	(2)
HOEF11	9631	F11-X10		F11-Z10	
Δ 199 _B	Δ 208 _A	1553 _B	1560 _A	1472 _B	1478 _A
(1)	(2)	(1)	(2)	(1)	(2)

Without headers

	CLEX10		CLEZ10		CLEF11	
HOEX10	X10-X10		X10-Z10		X10-F11	
	1394 _B	1398 _A	1310 _B	1315 _A	1229 _B	1234 _A
	(1)	(2)	(1)	(2)	(1)	(1)
HOEZ10	Z10-X10		Z10-Z10		Z10-F11	
	1473 _B	1478 _A	1389 _B	1395 _A	1308 _B	1314 _A
	(1)	(2)	(1)	(2)	(1)	(1)
HOEF11	F11-X10		F11-Z10		F11-F11	
	1563 _B	1568 _A	1479 _B	1485 _A	1398 _B	1404 _A
	(1)	(2)	(1)	(2)	(1)	(1)

The column headers on the Spread Pyramid are the Outrights, Calendars, Butterflies, and Condors labels.

Choose prices to display

Choose the prices you want displayed.

Price display

Select which spread prices to display

- Show exchange traded prices
- Show synthetic prices
- Show both exchange traded and synthetic prices
- Show best prices from exchange traded and synthetic

Choose ask/bid layout

Choose the layout for the pyramid or matrix.

Bid/Ask layout

Select a layout for the Bid/Ask

- Vertical (Bid/Ask prices are stacked)
- Horizontal (Bid/Ask prices are side by side)

Select buy/sell colors

To change the color of cells, click the colored square to open the color selector. If you would like to use a color that is not pre-configured, click the ellipsis button.

Select the check boxes to color the cells and buttons of the display.

Exchange Traded	Synthetic
<input type="checkbox"/> Buys (Bids)	<input type="checkbox"/> Buys (Bids)
<input type="checkbox"/> Sells (Asks)	<input type="checkbox"/> Sells (Asks)
<input type="checkbox"/> Implied Buys (Bi)	<input type="checkbox"/> WKG Buys
<input type="checkbox"/> Implied Sells (A)	<input type="checkbox"/> WKG Sells
<input type="checkbox"/> WKG Buys	<input type="checkbox"/> WKG @ Bid
<input type="checkbox"/> WKG Sells	<input type="checkbox"/> WKG @ Ask
<input checked="" type="checkbox"/> Color the price cells	<input checked="" type="checkbox"/> Color the price cells
<input checked="" type="checkbox"/> Color the buy/sell buttons	<input checked="" type="checkbox"/> Color the buy/sell buttons

Display volume

Select these check boxes to display exchange-traded spread volume for the day on the Spread Matrix.

This setting will be disabled if you the [layout is vertical](#).

Volume display
Show total traded volume for the day

Numeric volume

Graphic volume

Activate function buttons

Selecting these check boxes turns price cells into buttons that can be used to place orders.

Function buttons

Market order buttons
Place market orders using Buy/Sell buttons

Inside market buttons (limit orders)
Place limit orders using buttons in price cells

Select font size

Choose the font size you want.

User interface font size

Extra small

Small

Medium

Large

Extra large

Select button style

These styles control the appearance of the buttons. Click to select your preferred style.

This setting will be applied to all trading interfaces, including DOMTrader, Order Ticket, and Orders and Positions.

Button Style

Button Style 1 Button Style 2 Button Style 3

Choose order size buttons behavior

Choose whether the order size buttons will replace the current value or increment and decrement the current value.

This setting will be applied to all trading interfaces, including DOMTrader, Order Ticket, and Orders and Positions.

Order size buttons behavior

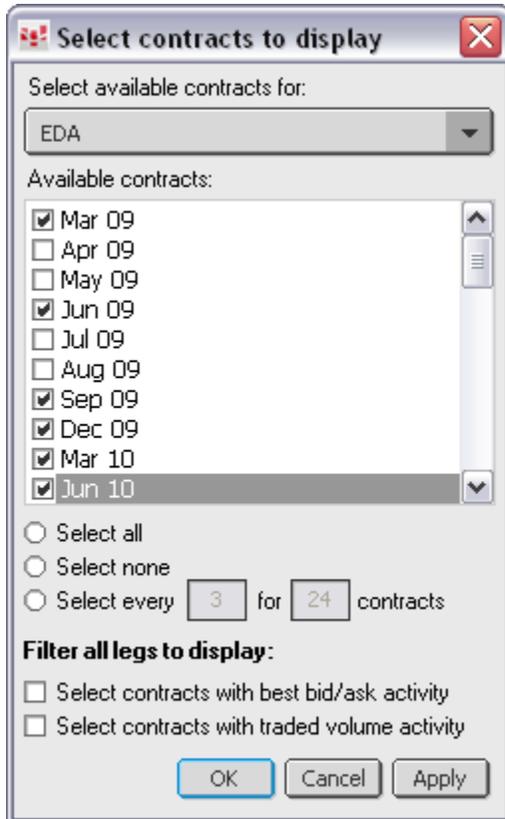
- Increment/Decrement
- Replace

Customizing the Spread Matrix Content

You are able to customize the display, so that only the contracts you want to see are included on the Spread Matrix.

To show/hide months

Right-click a month cell, and then click **Show/Hide Months**.



- Select the check boxes for each month you want displayed.
- Click **Select all** to select the entire list of contracts.
- Click **Select none** to remove all contracts.
- Select every other, every third, every fourth, etc. contract for a specific period of time by clicking **Select every...** and entering values.
- Click one of the filters to see contracts with best bid or ask activity or contracts with traded volume activity.

To remove a month

Right-click a month cell, and then click **Remove this Month**.

To remove quote cells

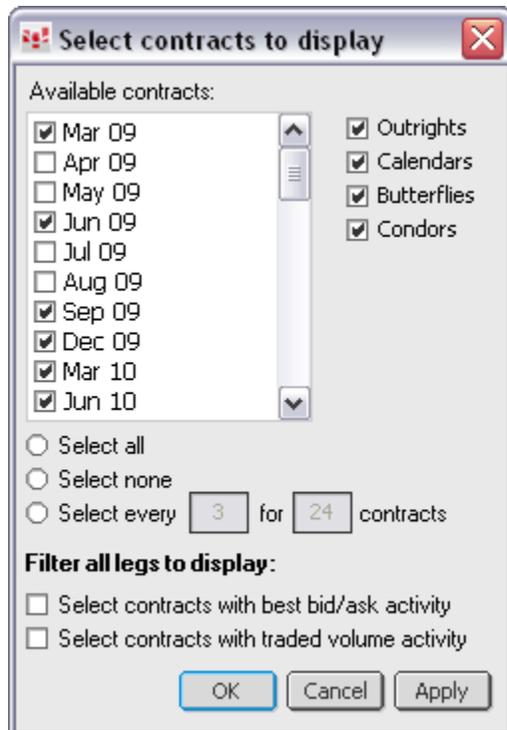
Right-click a month cell, point to **Show quote cells for**, and then select the header type that is checked. You can do the same in [preferences](#).

Customizing the Spread Pyramid Content

You are able to customize the display, so that only the contracts and strategies you want to see are included on the Spread Pyramid.

To choose strategies and contracts

Right-click the pyramid, and then click **Configure Months & Strategies**.



- Select the check boxes for each month you want displayed.
- Click **Select all** to select the entire list of contracts.
- Click **Select none** to remove all contracts.
- Select every other, every third, every fourth, etc. contract for a specific period of time by clicking **Select every...** and entering values.
- Click one of the filters to see contracts with best bid or ask activity or contracts with traded volume activity.
- Select the spread strategies to be displayed: **Outrights**, **Calendars**, **Butterflies**, or **Condors**.

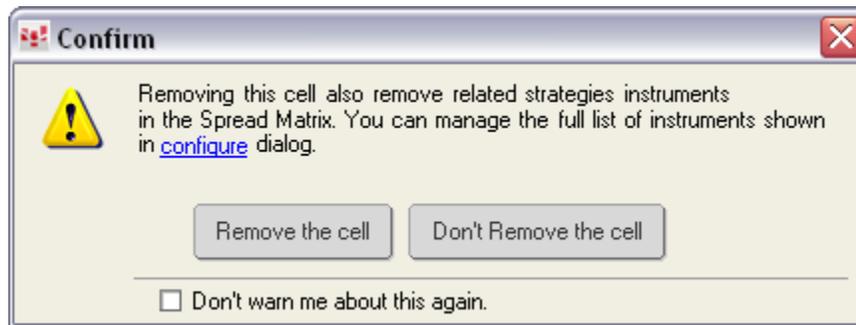
To remove a column

Right-click the column you want to remove, and then click **Remove [column name]**.

To remove a cell

You can remove individual cells from the outrights column. You cannot remove individual spread strategy cells.

1. Right-click the cell, and then click **Remove this cell**.
2. Confirm your action.

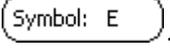


To remove outrights

Right-click a cell in the outrights column, and then click **Remove Outrights**.

Defining Spreads

To enter a spread, click the Spread Matrix or Spread Pyramid and start typing.

The symbol entry box will appear: .

When you have finished typing the symbol or formula, press ENTER.

For exchange-traded spreads, type the symbol.

For intracommodity synthetic spreads, type a symbol.

For intercommodity synthetic spreads, type a spread formula, such as 3^*CLE-2^*HOE . You can also enter a QFormula. For additional details about entering synthetic spreads, see [Entering Synthetic Spreads](#).

If you enter an intracommodity spread expression in common notation with a multiplier, but without spread operators (+ or -), then the multiplier is ignored. For example, 2^*CLE will not be processed with the modifier, but 3^*CLE-2^*CLE will.

If you enter a contract symbol (EPZ9) instead of the commodity (EP), the expiration month will be ignored.

For more information about exchange-traded spread symbology, see [Symbology for Exchange-Traded Spreads](#) on our Web site.

To edit a QFormula spread

If you have entered a QFormula, you can edit that formula directly from the Spread Matrix.

1. Right-click the [intersection](#) button.
2. Click **Edit QFormula**. The Define User Formulas window opens.
3. Make changes to the formula.
4. Click **Close**.

Copying Spread Expressions

Right-click the cell you want to copy, and then click **Copy**. The data is saved to your clipboard for you to paste elsewhere, such as on a QuoteBoard.

If you have entered a QFormula on the Spread Matrix, copy that formula by right-clicking the [intersection](#) button, and then clicking **Copy Formula**.

Deactivating a Spread Matrix or Spread Pyramid cell

Right-click on the cell you want to deactivate.

Click **Deactivate**. The cell turns gray and the buy and sell buttons are unavailable.

Opening a Chart from the Spread Matrix or Spread Pyramid

You are able to open a chart directly from the Spread window. Right-click the matrix and click **Chart**.

If you have your [System Settings](#) set to open a chart when you double-click on a cell, then you can also open a chart that way.

Trading with Spread Matrix and Spread Pyramid

Use the Spread Matrix and Spread Pyramid to place orders for exchange-traded and synthetic intercommodity and intracommodity spreads.

For calendar spreads and spreads with multipliers, use the Spread Matrix. For additional spread strategies, butterfly and condor, use the Spread Pyramid.

The screenshot displays the 'Spread Pyramid' window for Eurodollar (Globex) - 070707 (UA Trading: Refco). The window includes a 'Least' dropdown, an 'LMT' dropdown, and a 'Size' selector with options: 1, 1, 10, 25, 50, 75, 100. The main area is divided into four sections: Outrights, Calendars, Butterflies, and Condors.

Outrights: A vertical list of contracts with prices and quantities. For example, H09 is at 98747 B (605) and 98750 A (842).

Calendars: A grid of strategies like S3H09, S3M09, S6U09, S3H10, S3M10, S3U10, S3Z10, S3H11, S3M11, S3U11. Each cell shows a spread price and quantity, such as S3H09 at -10 B (605) and -5 B (33).

Butterflies: A grid of strategies like L3H09, M09-2*U09+H10, U09-2*H10+M10, L3H10, L3M10, L3U10, L3Z10, L3H11, L3M11. Each cell shows a spread price and quantity, such as L3H09 at -55 B (33) and -51 B (7).

Condors: A grid of strategies like H09-M09-U09+H10, M09-U09-H10+M10, U09-H10-M10+U10, C3H10, C3M10, C3U10, C3Z10, C3H11. Each cell shows a spread price and quantity, such as H09-M09-U09+H10 at -255 B (33) and -247 A (9).

Trading preferences for these tools are governed by global trading preferences.

If spread positions are calculated by execution (that is, if **Group strategy positions by filled spread orders** is enabled in Strategy preferences), then the Spread Matrix and Spread Pyramid display positions for strategies as well as for their legs.

Trading on the Spread Matrix and Spread Pyramid is part of our Advanced Trading Package.

Enabling Trading Mode

You must be in trading mode in order to display buy and sell buttons, quantity buttons, and the Account Selector on the Spread Matrix and Spread Pyramid and to place orders.

The system employs the last-used trading mode for an individual matrix or pyramid:

- When CQG IC restarts.
- When you log back on to the trading gateway.
- When you go to a page containing the matrix or pyramid.

For example: Spread Matrix A, Spread Matrix C, and Spread Matrix D are in trading mode. Spread Matrix B is not. CQG IC restarts. Spread Matrix A, Spread Matrix C, and Spread Matrix D remain in trading mode, while Spread Matrix B remains not in trading mode.

To turn trading mode on and off

To turn trading mode on and off:

- Click the **Trade** button.
- Right-click the **Trade** button and then click **Logon** or **Logoff**.

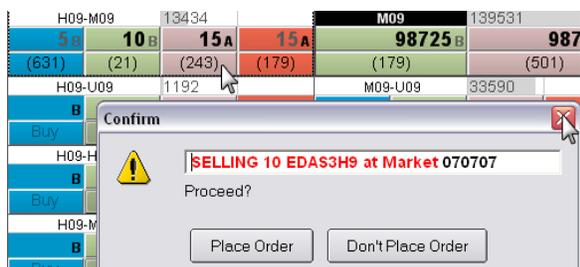
Please note the following **Trade** button behavior:

Are you logged on to trade?	Are you in trading mode?	Click the Trade button to...
no	no	log on and turn on trading mode
yes	no	turn on trading mode
yes	yes	turn off trading mode

Placing and Managing Orders on the Spread Matrix and Spread Pyramid

You can place orders directly on the Spread Matrix and Spread Pyramid or by opening a trading application from the matrix or pyramid.

To place a market order



1. Select the account you want to trade for.
2. Choose the order size by clicking a quantity button or by typing a number in the **Size** box.
3. If applicable, select the trade ratio.
4. Select which legs to work: all, most liquid, or least liquid.
5. Choose the order type for completing the spread: market or limit.
6. Click a buy or sell button for the strategy and spread you wish you trade.
7. If you have notifications turned on, then you must confirm the order placement.

You can also right-click the cell and click **Place an Order**. The order entry application that opens depends on your System Preferences.

To place a limit order



1. Select the account you want to trade for.
2. Choose the order size by clicking a quantity button or by typing a number in the **Size** box.
3. If applicable, select the trade ratio.
4. Select which legs to work: all, most liquid, or least liquid.
5. Choose the order type for completing the spread: market or limit.
6. Click the bid or ask price button for the strategy and spread you wish to trade.
7. If you have notifications turned on, you must confirm the order placement.

You can also right-click the cell and click **Place an Order**. The order entry application that opens depends on your System Preferences.

To place an order using a trading interface

1. Right-click a cell on the matrix or pyramid.
2. Click **Place an Order**. The DOMTrader, Order Ticket, or Simple Order Ticket opens, based on your setting in System Preferences (**Setup > System Preferences > Misc > Preferred Order Entry Display**).
3. Use the DOMTrader or Order Ticket as usual to place the order.

To cancel all orders

Click the **Cancel All** button on the toolbar.

Right-click the **Cancel All** button to select the account, side, and symbol to cancel.

Snap Quote

Snap Quote gives you quick, comprehensive, and up-to-the-minute summary of futures, options, bonds, and equities.

You can open a price alerts window and a trading application from Snap Quote (right-click the window).

The Snap Quote can be viewed vertically (default) and horizontally. To change to a horizontal view, right-click the Snap Quote, and click **Use Standard Format**.

To change the name of the window, right-click the Snap Quote title bar then click **Rename Window**.

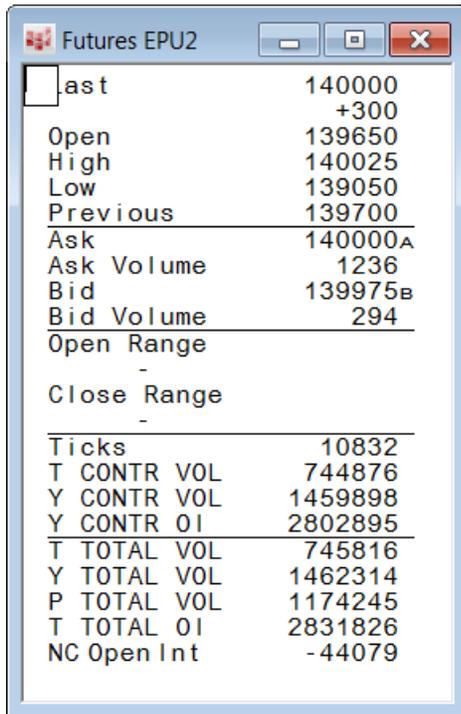
If you drag the borders of the Snap Quote window, you'll notice that the display itself does not change its size even though the window does. To return the Snap Quote to its previous state, right-click the **Setup** button and then click **Size to Fit**.

To open Snap Quote, click the **SnapQ** button on the toolbar. If the button is not displayed, click the **More** button, and then click **Snap Quote**.

Snap Quote Views

For definitions of these values, see "[Snap Quote Data Definitions](#)" on page 271.

Futures



Futures EPU2	
Last	140000
	+300
Open	139650
High	140025
Low	139050
Previous	139700
Ask	140000 ^A
Ask Volume	1236
Bid	139975 ^B
Bid Volume	294
Open Range	-
Close Range	-
Ticks	10832
T CONTR VOL	744876
Y CONTR VOL	1459898
Y CONTR OI	2802895
T TOTAL VOL	745816
Y TOTAL VOL	1462314
P TOTAL VOL	1174245
T TOTAL OI	2831826
NC Open Int	-44079

Options

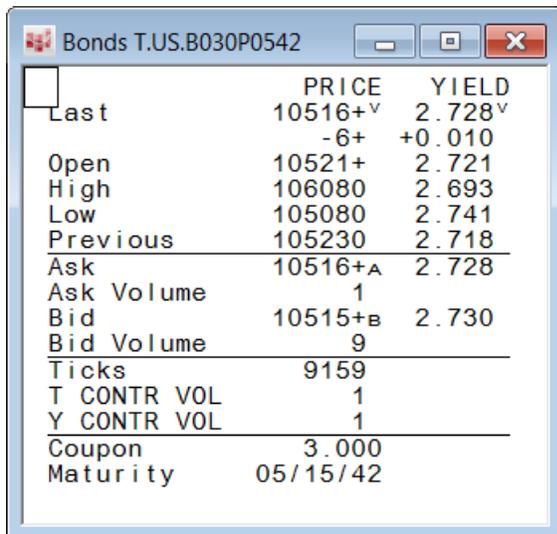
Bid and ask volumes are available only if you received DDA data. To change the underlying model used for calculating theoretical values and Greeks, right-click the Snap Quote title bar and then click **Preferences**.

The screenshot shows a window titled 'Options C.EPU212500' with a standard Windows title bar (minimize, maximize, close). The window content is a table of market data and Greeks. The first row is a header 'ast' with a small square icon to its left. The table lists various metrics with their corresponding values, some with superscripts 'A' or 'B' indicating ask or bid values.

ast	
Open	
High	
Low	
Previous	15000
Ask	15625 ^A
Ask Volume	22
Bid	14900 ^B
Bid Volume	22
Underlying	139975 ^B
Days To Expiration	44
Interest Rate	0.39
Volatility	14.27
Implied Volatility	
Theo Value	15694.3
Delta	89.14
Gamma	0.00139
Theta	-27.372
Vega	89.160
Rho	-18.889
Ticks	0
T CONTR VOL	0
Y CONTR VOL	290
Y CONTR OI	592
T TOTAL VOL	10024
Y TOTAL VOL	68252
T TOTAL OI	645201
NC Open Int	-478

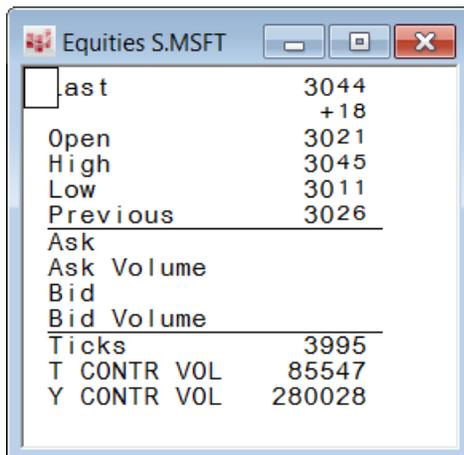
Bonds

Shows both price and yield statistics; yield represents the amount of interest paid during the course of one year over the current bond price, not the yield to maturity.



	PRICE	YIELD
Last	10516+ ^v	2.728 ^v
	-6+	+0.010
Open	10521+	2.721
High	106080	2.693
Low	105080	2.741
Previous	105230	2.718
Ask	10516+A	2.728
Ask Volume	1	
Bid	10515+B	2.730
Bid Volume	9	
Ticks	9159	
T CONTR VOL	1	
Y CONTR VOL	1	
Coupon	3.000	
Maturity	05/15/42	

Equities



Last	3044
	+18
Open	3021
High	3045
Low	3011
Previous	3026
Ask	
Ask Volume	
Bid	
Bid Volume	
Ticks	3995
T CONTR VOL	85547
Y CONTR VOL	280028

Snap Quote Data Definitions

Options values (models, volatility, etc.) are set in preferences. Right-click the Snap Quote then click **Preferences**.

Data	Definition	Futures	Options	Bonds	Stocks
Ask	Current ask price.	Yes	Yes	Yes	Yes
Ask Volume	Number of contracts offered at current ask price.	Yes	Yes	Yes	
Bid	Current bid price.	Yes	Yes	Yes	Yes
Bid Volume	Number of contracts offered at current bid price.	Yes	Yes	Yes	
Close Range	Closing range prices.	Yes			
Coupon	Bond's interest rate.			Yes	
Day to Expiration	Days until expiration of option contract.		Yes		
Delta	Shows the change in the price of a derivative to the change in the price of the underlying assets.		Yes		
Gamma	Amount the delta changes when the underlying price changes by one tick.		Yes		
High	Highest price of the day.	Yes	Yes	Yes	Yes
Implied Volatility	Implied volatility.		Yes		
Interest Rate	Interest rate used in model calculations.		Yes		
Last	Last price followed by net change from previous day's closing price.	Yes	Yes	Yes	Yes
Low	Lowest price of the day.	Yes	Yes	Yes	Yes
Maturity	Date on which bond becomes due for payment.			Yes	
OI NC	Difference between yesterday's and previous' days open interest, OI	Yes	Yes		

Data	Definition	Futures	Options	Bonds	Stocks
	(yesterday) - OI (two days ago). OI data is provided by exchanges at the beginning of or during trading for the previous day and it represents cumulative OI value across all active contracts for a specific commodity.				
Open	Opening price for the day.	Yes	Yes	Yes	Yes
Open Range	Opening range prices.	Yes			
P TOTAL VOL	Day before yesterday's volume for the commodity.	Yes			
Previous	Previous day's last price.	Yes	Yes	Yes	Yes
Rho	Change in option price to a unit change in interest rates.		Yes		
T CONTR VOL	Today's contract volume.	Yes	Yes	Yes	Yes
T TOTAL VOL	Total volume for the commodity for the current day.	Yes	Yes		
Theo Value	Theoretical volatility used with models.		Yes		
Theta	Represents the loss in theoretical value in one day, if all other factors are constant.		Yes		
Ticks	Total number of ticks for the day for the issue.	Yes	Yes	Yes	Yes
Underlying	Underlying market's current price.		Yes		
Vega	Amount that the theoretical value changes when the volatility changes by 1 point.		Yes		
Volatility	Total number of ticks for the day.		Yes		
Y CONTR OI	Previous day's contract open interest.	Yes	Yes		
Y CONTR VOL	Previous day's contract volume.	Yes	Yes	Yes	Yes
Y TOTAL OI	Previous day's total open interest for the commodity followed by the net change of total open interest from the prior day.	Yes	Yes		

Data	Definition	Futures	Options	Bonds	Stocks
Y TOTAL VOL	Previous day's total volume for the commodity.	Yes	Yes		

News

CQG doesn't only deliver the news. We provide a news application that lets you use the news.

Choose from over two dozen pre-set filters - such as currency, energy, grain, and oil - to find stories that interest you, or create your own filters.

CQG's robust search capability allows you to refine your search for more meaningful results. Find stories that are in a particular category, that contain certain words and phrases, that exclude other words, or that are from a particular source. Search the last 24 hours, the last week, this month, or the last month.

The most recent headlines are always on top. Scroll up and down the list of headlines or move along the timeline to read previous stories.

Read a story without having to open a new window. Change the font size. Print or e-mail stories with the click of a button. Read news stories from Dow Jones, Market News, Thomson Financial, The Hightower Report, Interfax News, N2K (Need to Know) News, and Informa Global Markets News.

With CQG's speed of delivery, you can be sure you always have the latest news that's important to you.

Opening News

Click the **News** button on the toolbar.

If the button is not displayed, click the **More** button, and then click **News**.

To add the **News** button to the toolbar:

1. Click the **Setup** button.
2. Select **Customize Toolbar**. This displays the Toolbar Manager window.
3. Click the >>> button in the **Add/Remove** column in the **Chart, Quote, News** row.
4. Click **News** in the button column.
5. Click the **Close** buttons on the **Customize Application Toolbar** and **Toolbar Manager** windows.

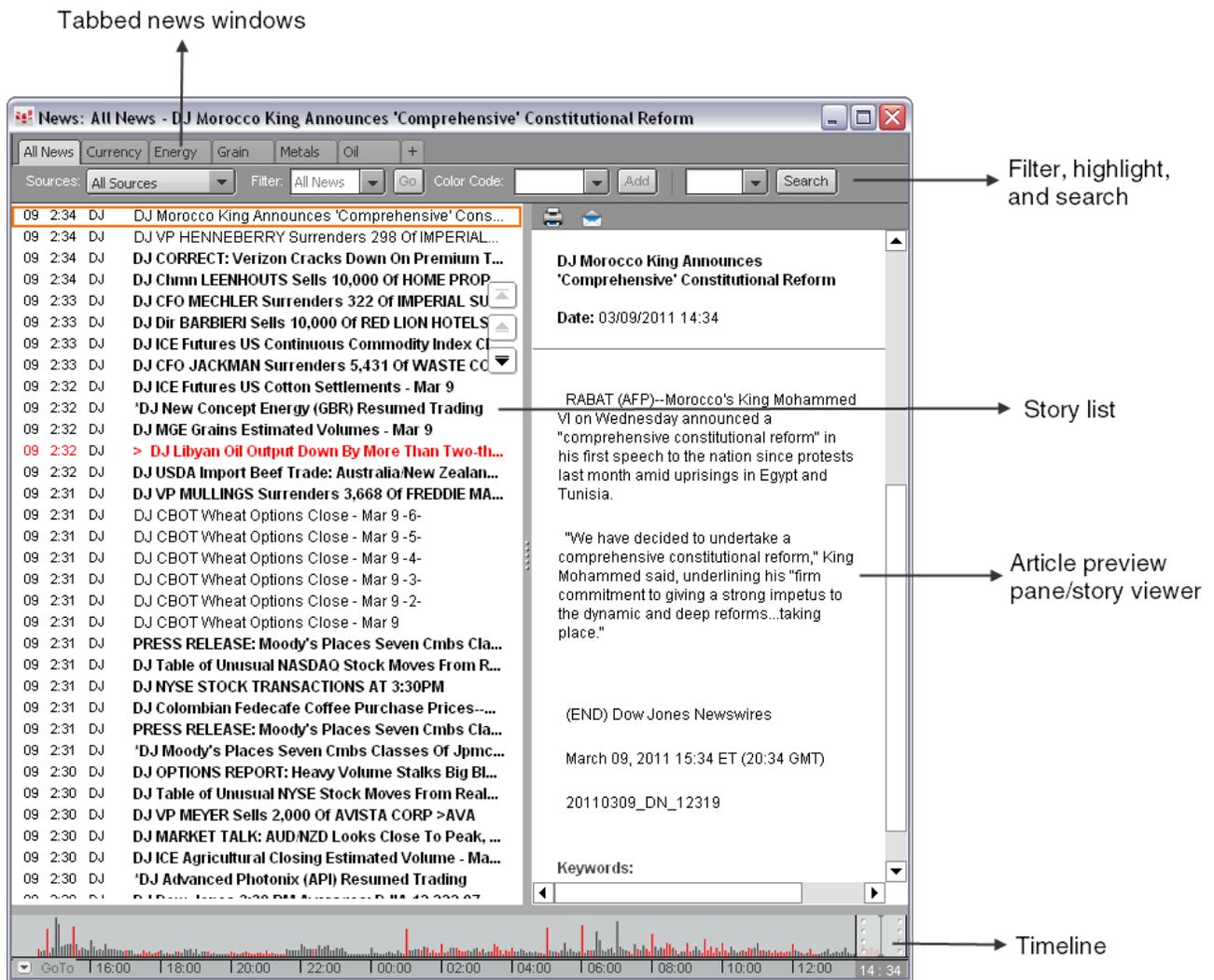
News Components

The **News** window lists all headlines in real-time.

Filter, highlight, and search for news stories at the top of the **News** window.

Read stories in the story viewer.

Use the timeline or arrow buttons to move to earlier or later stories.



Tabbed news windows

Creating tabbed news windows makes it easy to move between various filtered headline lists.

- To add a window, either click the + tab, or right-click the tab and then click **New Tab**.
- To remove a window, right-click the tab, and click **Remove Tab**.
- To copy a window, right-click the tab, and click **Duplicate Tab**.
- To hide all tabs, right-click the tab, and click **Hide Tab Bar**.

To move between tabbed windows, click the tabs. If the tabs do not fit across your window, click the numbered tab to open a complete list of windows, then click the window name:



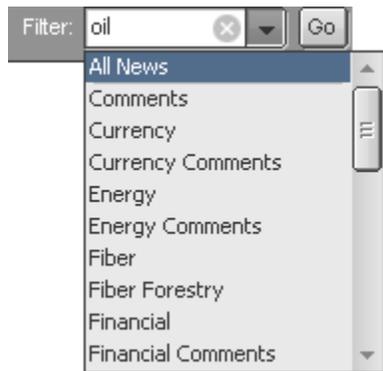
Sources menu

Select which news sources you want to see headlines for on this menu.



Filter menu

Type your own filter or use one of the pre-set filters to see only stories that contain that keyword.



To remove pre-set filters, go to [preferences](#).

For details about filtering, see "[Filtering News Stories](#)" on page 292.

Color Code (highlighting) menu

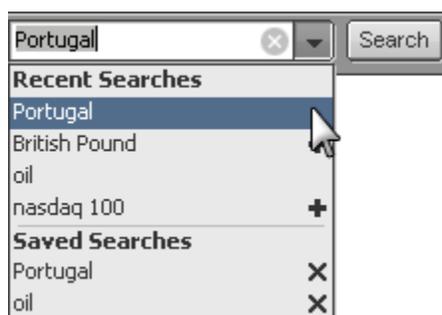
Highlighting is another way to identify stories with particular keywords or phrases but without hiding other headlines, as is the case with filtering. Choose to highlight headlines based on a keyword of your choice.



For details about managing highlighting, see "[Color Coding \(Highlighting\) Headlines](#)" on page 293.

Search field

Type a new search term or choose a previous search from the menu. Click the + to save a search.



For details about searching, see "[Searching for News Stories](#)" on page 295.

Story list

The story list displays Dow Jones News, Market News, High Tower News, Need to Know News, and Informa Global Markets News in real-time.

The three most recent stories are listed at the top of the story list and remain there as you scroll through earlier stories.

- The font size of the headlines is largest for the most recent story (optional).
- Unread stories are in bold font.
- Red font indicates a Dow Jones News Flash story.
- Chained stories, which are stories sent in parts at different times, are indicated by an asterisk (*).
- The equals sign (=) indicates a special report, usually analysis or commentary.
- A double asterisk (**) indicates a headline without an accompanying story.

If you have filtered the list, then only those stories that meet your filter criteria are displayed.

Your story list may look different from this image depending on your [settings](#).

Date	Time	Source	Headline
09	3:16	DJ	DJ New York Foreign Exchange Indications -3-
09	3:16	DJ	DJ VP KUTNICK Sells 10,000 Of GARTNER INC >IT
09	3:16	DJ	DJ VP RICHARD Surrenders 1,308 Of SELECT COMFORT CORP >SCSS
09	2:30	DJ	PRESS RELEASE: Celebration Highlights Sam's Club® eValues(SM) Program
09	2:30	DJ	DJ Nymex Globex Energy Futures Hourly Price Update
09	2:30	DJ	DJ Chile's Closing Stock Prices
09	2:30	DJ	DJ USDA Import Beef Trade: Australia/New Zealand - Mar 9
09	2:29	DJ	PRESS RELEASE: ABT - COMPLETED PRIVATE PLACEMENT AND MANDATORY NOTIFICATION OF TRADE
09	2:29	DJ	DJ New York Foreign Exchange Indications -2-
09	2:29	DJ	DJ Chmn WAREHIME Buys 5,000 Of SNYDERS-LANCE INC >LNCE
09	2:29	DJ	> 'DJ RBNZ Governor Bollard Was Speaking At A Press Conference
09	2:29	DJ	DJ CBOT Soymeal Options Close - Mar 9 -2-
09	2:29	DJ	DJ CBOT Soymeal Options Close - Mar 9
09	2:29	DJ	'DJ S&P Cuts Dresser-Rand Subordinated Debt Rating To 'B+' From 'BB-'>DRC
09	2:28	DJ	DJ Dir BRADFORD Sells 10,000 Of PERVASIVE SOFTWARE INC >PVSW
09	2:28	DJ	'DJ S&P Cuts Dresser-Rand Sr Secured Debt To 'BB+' >DRC
09	2:28	DJ	DJ VP MCLOUGHLIN Surrenders 3,606 Of FREDDIE MAC >FMCC
09	2:28	DJ	DJ CBOT Soybeans Options Close - Mar 9/ -6-
09	2:28	DJ	DJ CBOT Soybeans Options Close - Mar 9/ -5-
09	2:28	DJ	DJ CBOT Soybeans Options Close - Mar 9/ -4-
09	2:28	DJ	DJ CBOT Soybeans Options Close - Mar 9/ -3-
09	2:28	DJ	DJ CBOT Soybeans Options Close - Mar 9/ -2-
09	2:28	DJ	DJ CBOT Soybeans Options Close - Mar 9/
09	2:28	DJ	DJ 2nd UPDATE:House Republicans Object To Mortgage Settlement Proposal
09	2:28	DJ	DJ CBOT Rice Options Close - Mar 9 -2-
09	2:28	DJ	DJ CBOT Rice Options Close - Mar 9
09	2:27	N2K	US CONGRESS: The Senate has just voted down the GOP
09	2:27	MNS	BULLET: US CONGRESS: The Senate has just voted down the GOP..>
09	2:27	DJ	PRESS RELEASE: S&P Lwrs Dresser-Rand Sr Secured and Subordinate Debt Ratings
09	2:27	DJ	'DJ S&P Lwrs Dresser-Rand Sr Secured and Subordinate Debt Ratings
09	2:27	DJ	DJ CarMax's \$650M Bond Priced - Source
09	2:27	MNS	GEITHNER HEARING BEFORE HOUSE SUBCOMMITTEE ENDED

To learn more about reading stories, see "[Reading News Stories](#)" on page 291.

A note about chained Dow Jones News in Russian

Chained DJ News stories that have been translated into Russian are indicated by the asterisk. However, chained DJ News stories originally written in Russian (typically covering the Russian Stock Market and Russian events), are indicated by a numeral set off by hyphens, as seen here:

05	10:33	DJ	DJ Цены большинства российских акций сегодня упали -4-
05	10:33	DJ	DJ Цены большинства российских акций сегодня упали -3-
05	10:33	DJ	DJ Цены большинства российских акций сегодня упали -2-

Article preview pane

The story viewer displays the story that is selected on the story list. It also has print and e-mail buttons.

The screenshot shows a web browser window displaying a press release. The title is "PRESS RELEASE: Superior Industries to Report 2010 Fourth Quarter and Full-Year Financial Results and Host Conference Call On Wednesday, March 16, 2011". The date is "03/09/2011 15:23". The main text starts with "VAN NUYS, Calif.--(BUSINESS WIRE)--March 09, 2011--" and describes the company's financial results and a conference call. There are several annotations with arrows pointing to specific elements: "Print and e-mail buttons" points to the top right corner; "Website link" points to the URL www.supind.com; "E-mail link" points to the email address Investor@pondel.com; and "Keyword links" points to the text "FINANCIAL STOCKS".

PRESS RELEASE: Superior Industries to Report 2010 Fourth Quarter and Full-Year Financial Results and Host Conference Call On Wednesday, March 16, 2011

Date: 03/09/2011 15:23

VAN NUYS, Calif.--(BUSINESS WIRE)--March 09, 2011--
Superior Industries International, Inc. (NYSE:SUP) today announced that it plans to release financial results for the fiscal fourth quarter and full year ended December 31, 2010 before the market opens on Wednesday, March 16, 2011. Superior has scheduled a conference call that same day at 10 a.m. Pacific Daylight Time (1 p.m. Eastern Daylight Time) to review financial and operating results and answer questions.

The conference call will be available to interested parties through a live audio Internet broadcast and may be accessed from the Webcasts link at the Investor page of www.supind.com. In addition, a PowerPoint presentation will be posted on the website and will be referred to during the conference call. The call will be archived and accessible at this site for approximately one year.

About Superior Industries

Superior supplies aluminum wheels to Ford, General Motors, Chrysler, BMW, Mitsubishi, Nissan, Subaru, Toyota and Volkswagen. For more information, visit www.supind.com.

PondelWilkinson Inc.

Robert Jaffe / Roger Pondel,

310-279-5980

Investor@pondel.com

SOURCE: Superior Industries International, Inc.
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Keywords:

[FINANCIAL STOCKS](#)

Double-click the keyword to filter the news stories. For example, if you double-click "FINANCIAL STOCKS," then only stories with the FINANCIAL STOCKS keyword are displayed in the story list.

If corrections are made to stories and headlines, the timestamp on the story and the order of stories on the **News** window remains the same.

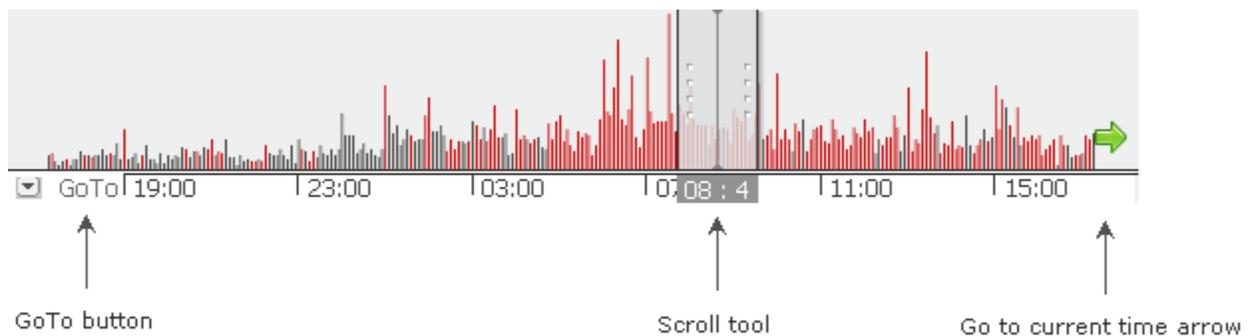
This preview pane is [optional](#).

Timeline bar

Each bar in the story timeline represents five minutes.

The volume of stories is represented by the height of the bars. Red bars indicate that a Dow Jones News Flash story occurred within that five minutes.

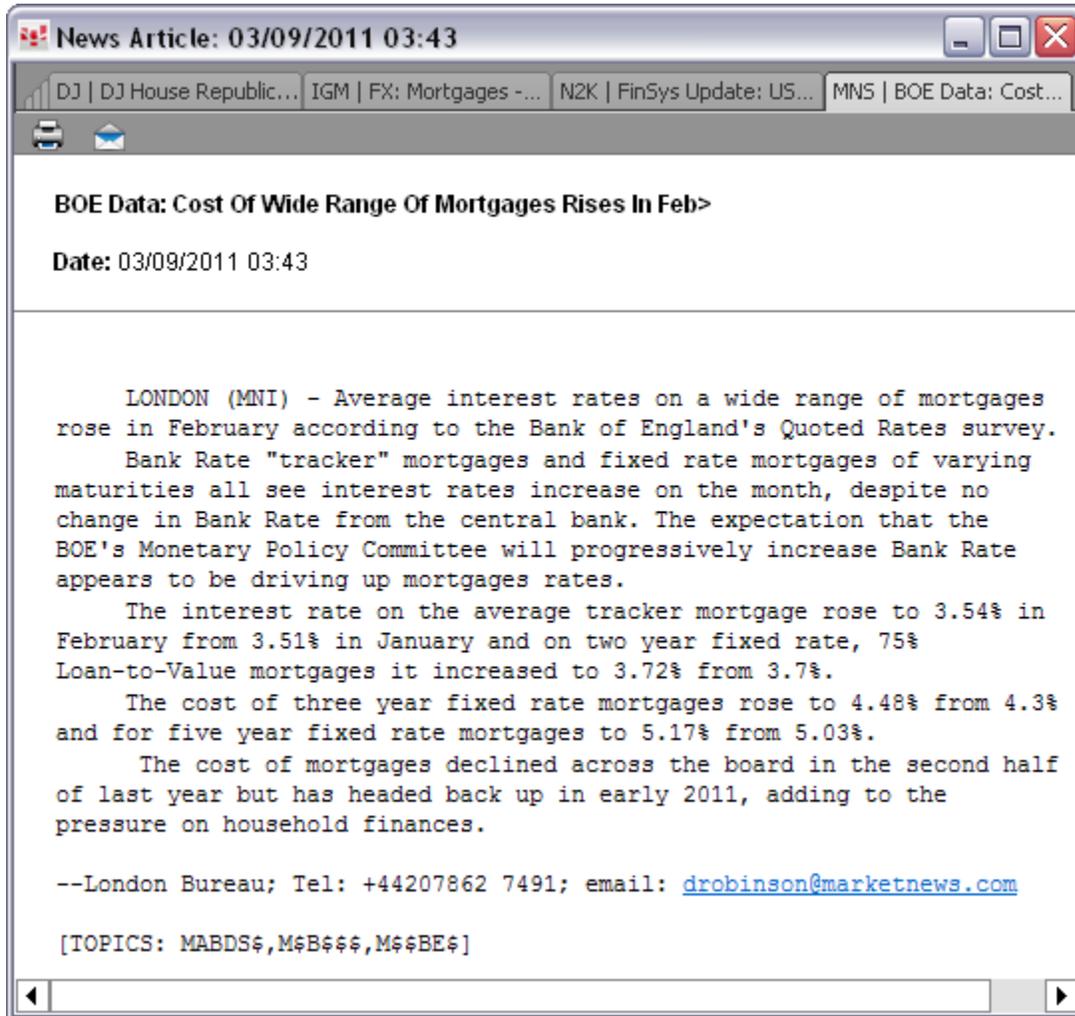
The story timeline includes a scroll tool as well as a **GoTo** button and arrow button for moving between times.



When the news is synchronized with a chart, the scroll tool moves in unison with the cursor on the chart.

News Article window

The **News Story** window opens when you [click](#) a headline. You [choose](#) whether you want additional stories to open in the same window or not. This window is similar to the article preview pane.



For details about reading stories, see "[Reading News Stories](#)" on page 291.

To hide window components

You can customize the display of the **News** window by hiding various components.

- To hide the tabs, right-click a tab and click **Hide Tab Bar**.
- To hide the filter and search fields, right-click the gray area on the filter/search bar and unselect **Show Filter/Search Bar**.
- To hide the article preview pane, right-click the gray area on the filter/search bar and unselect **Show Story Pane**.
- To hide the timeline, click the gray area on the filter/search bar and unselect **Timeline**.

You can also hide both the story pane and timeline by pressing F10.

News Toolbar

The News toolbar has these buttons:



SyncChart button

This button synchronizes the time scale of the chart with the timeframe of News.

Search button

This button opens the News Search window.

DJEnergy button

This button opens the Dow Jones NewsPlus Energy website:
<http://www.djnewsplus.com/energy>.

DJ CMR button

This button opens the Dow Jones NewsPlus Capital Markets Report website:
<http://www.djnewsplus.com/cmr>.

DJ GM button

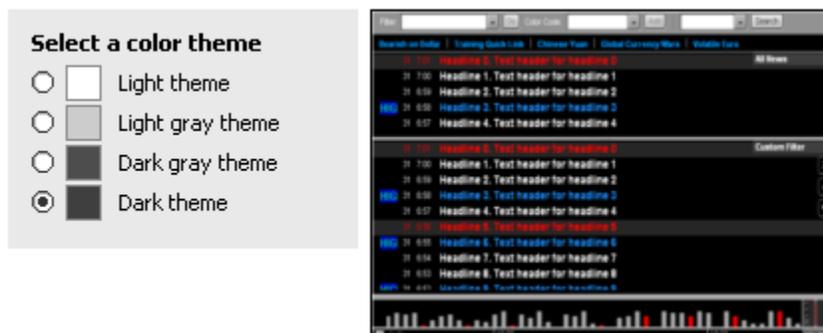
This button opens the Dow Jones NewsPlus Global Markets website:
<http://www.djnewsplus.com/gm>.

Setting News Preferences

News preferences allow you to customize the News display.

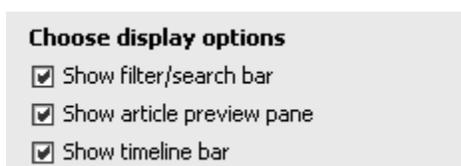
To open the **News Preferences** window, click the **Setup** button, and then click **News preferences**. You can also right-click the story list.

Select a color theme



Select one of the four color schemes. You can see what each theme looks like by selecting it and referring to the preview grid.

Choose display options



Choose whether to display the filter and search bar, the article preview pane, and the timeline bar.

You can also [alter the display](#) directly from the **News** window.

Headline options

Headline options

- Display headlines with varying size font
- Color code hot headlines with:
 - Solid border
 - Dotted border
 - Background color
 - Symbol

Choose whether headlines should be displayed in different size fonts or all the same font size on the story list. If you choose varying font size, older headlines are displayed in smaller font.

Select one of four ways to highlight hot headlines (solid or dotted border, background color, or symbol):



To select none, unselect the **Color code hot headlines** check box.

Headline coloring



This preference is used in conjunction with [color coding](#). In addition to differentiating between countries using color coding, you can also add a marker. In order to show markers, there must be active highlights.

Select one of three markers (symbol, code, or flag):

\$ 18 3:11 **2nd UPDATE:US Regulators Issue Study On New Securitization Rules**
 € 18 3:10 > **'Irish Prime Minister Wins Confidence Vote As Party Leader**
 USD 18 3:11 **2nd UPDATE:US Regulators Issue Study On New Securitization Rules**
 EUR 18 3:10 > **'Irish Prime Minister Wins Confidence Vote As Party Leader**
 🇺🇸 18 3:11 **2nd UPDATE:US Regulators Issue Study On New Securitization Rules**
 🇪🇺 18 3:10 > **'Irish Prime Minister Wins Confidence Vote As Party Leader**

To select none, unselect the **Show color coding markers** check box.

Hover over a [marker](#) to see other applicable markers:



If you want to show markers without color coding, [remove the active highlight color](#).

Filter

Filter

- Show All News pane
- Show default keywords in filter

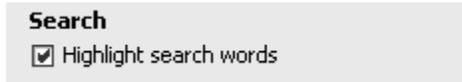
On filtered story lists, there are two panels. As seen in this image, the top panel shows all unfiltered news (**All News**); the bottom panel shows news according to your filter (**mortgage**):

The screenshot shows a news filter interface. At the top, there is a search bar with the word "mortgage" and a plus sign. Below it, there are controls for "Sources" (set to "All Sources"), "Filter" (set to "mortgage"), a "Go" button, and a "Color Code" field. The main content area is divided into two panels. The top panel, labeled "All News", contains a list of news items including "PRESS RELEASE: Raven Industries Introduces Dura-Skrim(R) Text...", "DJ CFO BOLING Sells 500 Of CARRIZO OIL & GAS INC >CRZO", "FI: Canada Parliament Speaker finds Conservatives in contempt", "DJ St. Louis Cash Wheat No.2 Soft Red: 7.21 1/2", "DJ UPDATE: CarMax's \$650M Bond Priced - Source", and "DJ NYSE Bond & NYSE Amex Bond Transactions". The bottom panel, labeled "mortgage X", contains a list of news items including "PRESS RELEASE: S&P Affirms 15 CDC Commercial Mortgage Tr...", "DJ S&P Affirms 15 CDC Commercial Mortgage Trust 2002-FX1 Ratings", "DJ LendingTree: 15-Yr Fixed Mortgages 4.29% At March 8", "PRESS RELEASE: LendingTree Weekly Mortgage Rate -2-", "PRESS RELEASE: LendingTree Weekly Mortgage Rate Pulse Reports Rates F", "DJ LendingTree: 30-Yr Fixed Mortgages 5.08% At March 8", "DJ 2nd UPDATE: House Republicans Object To Mortgage Settlement Proposal", "DJ UPDATE: House Republicans Object To Mortgage Settlement Proposal", "DJ House Republicans Object To Mortgage Settlement Proposal", "*DJ House Republicans Object To State Attorneys General Mortgage Settleme...", "FX: Mortgages - Resisting Principle Forgiveness", "DJ Counsel: Street Capital Is Canadian-Owned Prime Residential Mortgage ...", "FinSys Update: US Mortgage Applications Up 15.5% In Latest Wk", "FI: Mortgages - Resisting Principle Forgiveness", "FX: US Mortgage Applications Rise, Still Very Low", "EMERG: US Mortgage Applications Rise, Still Very Low", and "FI: US Mortgage Applications Rise, Still Very Low".

Choose whether the **All News** pane should be displayed.

Remove pre-set filters from the [filter menu](#) by unselecting the **Show default keywords** check box.

Search



Choose whether you want the words you searched for to be highlighted in the story text.

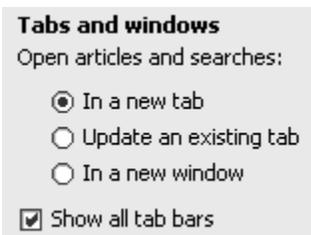
Headlines and articles



Select the font size for all **News** window elements: **Small**, **Medium**, or **Large**.

Clicking a headline opens the story window. Select if that clicking should be single or double.

Tabs and windows



You can open more than one story at a time in the [News Article window](#). Choose whether you want to:

- open the new story in a new tab,
- replace the existing story with the new story in the existing tab, or
- open the story in a new window.

To control the tab bars, globally, make your selection to show or hide them here.

Reading News Stories

To read a story, [click](#) the headline in the story list to view it in the preview pane or to open it in the [News Article window](#).

By default, each story you open is added to the same story window, creating a tabbed view of those stories. [Read more about working with tabs](#).

In addition to the actual article, stories may contain relevant e-mail addresses and website links. Keywords are at the end of the story. Chained stories (indicated by an asterisk) show all of the stories in that chain.

Go to preferences to [change how stories are displayed](#) or [add the article preview pane](#) to the story list.

To move between headlines

There are several ways to move up and down the story list to find stories:

- Click a headline, and use the up and down arrow keys on the story list.
- Click a headline, and use your mouse wheel to move up and down.
- Click the timeline, and drag the scroll tool to a particular time.
- Click the **GoTo** arrow in the lower left corner of the **News** window and enter a time. Click the green arrow to move back to the current time.

When you scroll beyond the timeframe of the stories displayed, the story list divides into two parts. The top of the list always contains the three most recent stories and updates in real-time. The bottom of the list contains the stories for the timeframe you moved to.

If you are looking for a particular story and you remember part of the headline, enter it in the filter field to find that story.

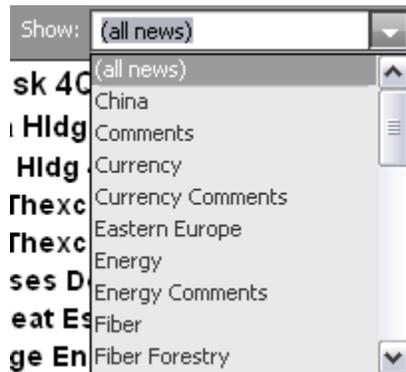
Issues with Foreign Language Characters

If foreign language characters are not being displayed properly, you may need to change your computer settings.

Go to the **Control Panel** and select **Regional and Language Options**. On the **Advanced** tab in the **Language for non-Unicode programs** section, change the language to match the foreign language displayed in the news stories.

Filtering News Stories

COG has provided almost three dozen pre-set filters for you on the [filter menu](#). These filters include: Currency, Energy, Fiber, Financial, Food, Grain, Metals, Shipping, Technical, USDA, and World News. Filters are based on the keywords provided in the news stories.



You can also enter your own keywords.

To filter by keyword

1. Click the Filter arrow to open the filter menu.
2. Click a filter. Headlines for stories with that keyword will be displayed in the story list.

After you choose a filter, it is moved to the top of the list on the filter menu. To remove it, click the **X**.

To filter by news source

The **Sources** list allows you to filter stories by source.



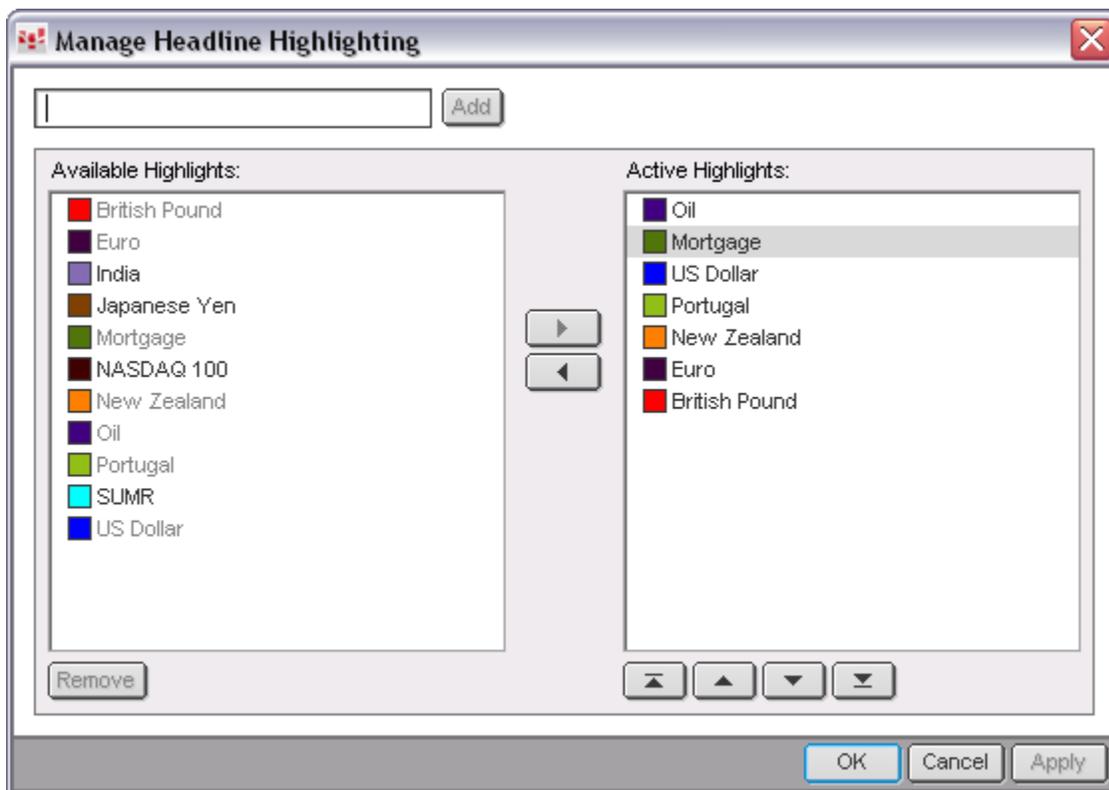
1. Click the **Sources** arrow to open the sources menu.
2. Click an individual news source, such as **Dow Jones**, or click **All Sources**. Headlines for stories from that source are displayed in the story list.

Color Coding (Highlighting) Headlines

COG IC offers the ability to color code or highlight headlines, so that you can readily see when a story includes a particular word or phrase.

First, you choose the keywords to activate (that is, include in the **Color Code** menu), then you apply them (using the **Color Code** menu).

To select keywords for color coding



1. Click the **Color Code** arrow.
1. Click **Manage Headline Highlighting** to open the management window.
2. Type a keyword, and click **Add**. Do this for as many keywords as you want.

Because the field acts like a search field, available highlights that match your entry are displayed. Note that no highlights are displayed when you've entered an original keyword.
3. In the **Available Highlights** list, click the keyword you want to add.
4. Click the right arrow button to add that keyword to the **Active Highlights** list.

Keywords that are active are in gray font in the **Available Highlight** list.

To reorder the keywords, use the button at the bottom of the **Active Highlights** list.

To remove a keyword, click the **Remove** button at the bottom of the **Available Highlights** list.

To change or remove the keyword color

1. Click the **Color Code** arrow.
2. Click **Manage Headline Highlighting** to open the management window.
3. Click the colored square next to the keyword to open the color palette.



4. Click a color to select it.
5. Click **No Color** to remove the color.

Removing the color is helpful when you want to [display a marker](#) without changing the color of the headline.

To apply color coding

1. Click the **Color Code** arrow.
2. Click the highlight(s) to apply from the [Color Code menu](#).
3. Click outside of the menu to close it.

Searching for News Stories

You can search for news stories directly from the **News** window using the [Search field](#). Your search results are listed in the **News Search** window.

A search that is too general results in a warning that over 200 headlines were found and is not useful. The search criteria fields help you [further define your search](#):

The screenshot shows a search interface with the following elements:

- Tab: "dollar time: 7d +"
- Section: **Find news that contains**
- Option: "All of these words" (selected)
- Field: "dollar"
- Option: "This exact phrase"
- Field: (empty)
- Option: "At least one of these words"
- Field: (empty)
- Option: "None of these words"
- Field: (empty)
- Option: "All of these codes"
- Field: (empty)
- Section: **Search in category**
- Dropdown: "All categories"
- Section: **During**
- Dropdown: "Last 7 days"
- Checkbox: Search headlines only
- Checkbox: More search options
- Message: "Your search resulted in over 200 entries. Please narrow the search criteria."
- Buttons: "Save", "Clear", "Search"

Be as specific as possible in your search. For example, consider using **This exact phrase** instead of **All of these words**. Consider narrowing the results by category or by selecting **Last 24 hours** instead of **Last 7 days**.

Additionally, it is not necessary to enter operators, such as AND and OR. If you enter operators in these fields, the system searches for those words. It is likely that you will receive an error message asking you to remove common words, as they occur too frequently for the system to return meaningful results.

As with the **News** and **News Story** windows, you can add other **News Search** windows in a tabbed view.

Dow Jones Search Codes can be used also. Please note that search codes can be used in this advanced view only.

How to format search criteria

You can enter a keyword or text. If you enter punctuation, that punctuation is considered part of the search.

You can use these operators to further define your search:

- **AND**: When you add "AND" between values, the system searches for news stories that contain all of the search values.

If you enter several values without an AND, then the AND is assumed.

- **OR**: When you add "OR" between values, the system searches for news stories that contain any of the values.

Including OR in your search indicates that you want to search for everything before the OR and everything after the OR. For example, if you enter: Japanese or American car and production, then any story that includes "Japanese" is returned and any story that includes "American car and production" is returned.

- **EXC**: When you add "EXC" before a value, the system searches for stories that do not include the value following the EXC.

This is the only operator that can begin your search criteria. If you begin the search with "AND" or "OR", they are ignored.

- **-**: Adding a hyphen in front of a value works the same way as EXC.
- **" "**: When you place single or double quotes around a value, the system searches for stories that include that exact phrase.

To search for a story

1. In the **Search** field, type your search criteria.
2. Click the **Search** button. The **News Search** window opens and is populated with the search results.

You can also open the **News Search** window directly by right-clicking the **News** button on the application toolbar, then clicking **Add News**, and then clicking **News Search**.

To conduct an advanced search

Advanced searches are both a way to limit the number of stories returned to produce more meaningful results and a way to search for items, such as events.

1. On the **News Search** window, select the **More search options** check box. Additional search options are displayed.
2. For a text search, type words and phrases that you want to include and exclude in the first three fields.
3. Optionally, type a Dow Jones code.
4. Optionally, select a category from the menu.
5. Optionally, select a timeframe from the menu or enter your own.
6. If you want to search only the headline and not the entire story, click the **Search headlines only** check box.
7. Click **Search**.

Please note that advanced search criteria are applied to the story and not to the headline. For example “oil AND spill NOT BP” returns headlines with “BP” in the title but without “BP” in the story (such as when “British Petroleum” is used rather than “BP”).

To group and sort search results

On the left side of the **News Search** window, there are grouping and sorting options.

Grouping indicates how you want stories grouped in the display.

- Click **Source** to sort by the news source, which is always Dow Jones. This is the default selection.
- Click **Category** to sort by the first keyword listed in the story. For example, a search for “banking” grouped by category includes Australia, Australian Dollar, Belgium, Brazil, British Pound, Central Bank, etc.
- Click **No Grouping** to list all of the stories based on the sort parameter you select.

Once you have selected the grouping, select how you want the stories in the group to be sorted.

- Click **Name** if you want an alphabetical list.
- Click **Date/Time** if you want a chronological list. This is the default selection.
- Click **Source** if you want a source list, which is always Dow Jones.

Printing and E-mailing News Stories

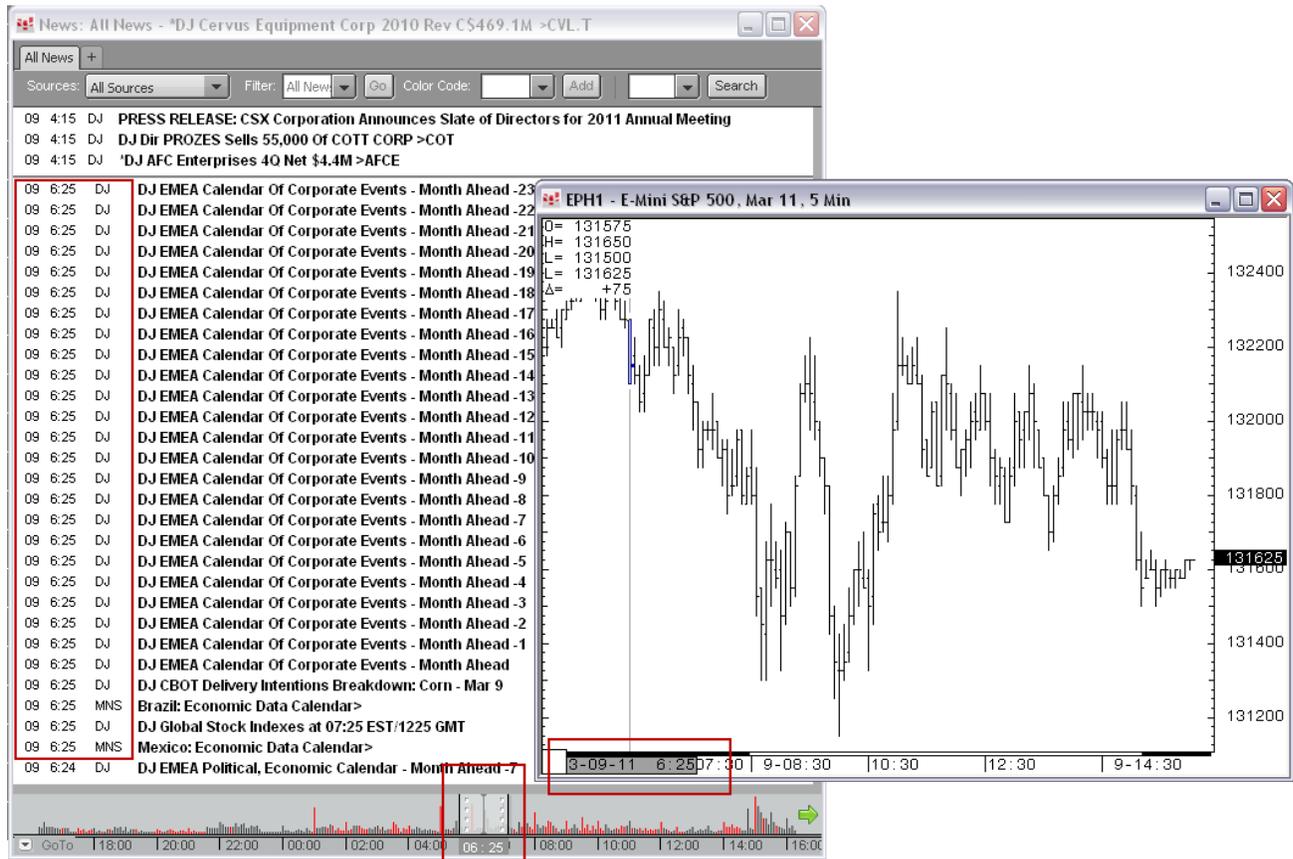
The print and e-mail buttons are at the top of the article preview pane and [News Article window](#).

To print a story, click this button: . Note that the story is printed immediately, and the print options window does not open.

To e-mail a story, click this button: . The default e-mail program opens, and you can edit the message before you send it.

Synchronizing News with a Chart

It's possible to synchronize the time scale of the chart with the timeframe of News. When you move the cursor along the time scale of the chart, the scroll tool moves along the timeline and headlines on the story list update to reflect the changes in time.



To synchronize News with a chart

1. Click the **News** button to open News, if it isn't open already.
2. Right-click the story list.
3. Click **Synchronize with Global Cursor**. You can also click the **SyncChart** button.
4. Open a chart.
5. Right-click the time scale at the bottom of the chart, and verify that **Global Cursors** is checked. If not, click it.
6. Click the time scale to display a cursor (vertical line).
7. Move the cursor to the left. Notice that the timeline scroll tool and headlines move in sync with the chart.

To turn off synchronization, click the **SyncChart** button.

Alerts

Alerts notify you with sound, a visual display, or both when a specific price, time, study value, or other condition has been met.

In addition, you can place orders based on alerts. If many alerts are triggered simultaneously, only the first five orders are placed.

Types of alerts include:

Price	Notifies you when a price crosses the Above or Below values you set.
Time	Displays an alert at the user-defined time.
Price X Line	Notifies you when a bar crosses above or below a pointer tool value.
Study	Notifies you when the study output crosses the above or below values set.
Condition	Notifies you if the conditions set for a symbol are met. The alert is reset when the restore signal condition is met.
Trading System	Notifies you when your trading system indicates that a trade should be made.

To move between the different alert windows, click the alert buttons on the [toolbar](#).

Opening the Alerts Window

Click the **Alert** button on the toolbar, then click the type of alert you want to create.

If the button is not displayed, click the **More** button, and then click **Alert**.

To add the **Alert** button to the toolbar:

1. Click the **Setup** button.
2. Select **Customize Toolbar**. This displays the Toolbar Manager window.
3. Click the >>> button in the **Add/Remove** column in the **Chart, Quote, News...** row.
4. Click **Alert** in the button column.
5. Click the **Close** buttons on the Customize Application Toolbar and Toolbar Manager windows.

Alerts Column Definitions

These columns are included in the alerts:

	Price	Time	Price X Line	Study	Condition	Trading System
Above	*		*	*		
Above Actions	*		*	*		
Actions		*				*
Below	*		*	*		
Below Actions	*		*	*		
Date		*				
Issue	*				*	*
Last	*		*	*		
Line			*			
Local		*				
Name		*	*	*		
Note	*	*	*	*	*	*
Occurs		*				
On	*	*	*	*	*	*
Position						*
Preferences			*	*	*	*
Restore Preferences					*	
Restore Signal					*	
Signal					*	
Study Output				*		
Time		*				
Trading System						*

Column Name	Definition
Above	Price condition. If the price is above this one, then trigger the alert. Right-clicking this box provides you with additional actions.
Above Actions	If the above price condition is met, then do this: play a sound, open another application, send an e-mail.
Actions	If the above price condition is met, then do this: play a sound, open another application, send an e-mail. Actions for time alerts do not include open another application.
Below	Price condition. If the price is below this one, then trigger the alert.

Column Name	Definition
Below Actions	If the below price condition is met, then do this: play a sound, open another application, send an e-mail.
Date	Date condition for time alerts.
Issue	The symbol the alert applies to.
Last	Last price. The value is generated by the system and cannot be changed.
Line	Pointer tool being used for the price X line alert.
Local	Tells the system to use local time for time alerts.
Name	User-defined name for the alert.
Note	User-defined notes for the alert.
Occurs	When to trigger the time alert: Once, Hourly, Daily.
On	Turns the alert on.
Position	Total position for the trading system, netting all the buying (long entries and short exits) against all the selling (short entries and long exits). The individual position resets to zero whenever that particular trading system alert is turned off.
Preferences	<p>Automatically filled with the type of chart (intraday or historical) and the recalculation setting.</p> <p>Chart type examples:</p> <p>5 = 5-min chart</p> <p>D= daily chart</p> <p>Recalculation values:</p> <p>blank = on every tick</p> <p>EOB = end of bar</p> <p>EOB + 60 sec = first tick of bar and periodically</p> <p>Right-click this box to change other preferences: Main, Sessions, Continuation, BATS, and Misc. This preferences window is the same preference window used for charts.</p>
Restore Preferences	Preferences specific to the restore signal.
Restore Signal	Tells the system what condition has to be met in order to restore the signal.

Column Name	Definition
Signal	The condition being used to trigger the condition alert.
Study Output	The study being used to trigger the study alert and its settings.
Time	Time to trigger the time alert.
Trading System	Trading system being used to trigger the trading system alert and its settings.

Alerts Toolbar

The Alerts toolbar includes these buttons:

Price button

Changes the current view to Price Alerts.

Time button

Changes the current view to Time Alerts.

Line button

Changes the current view to Price X Line Alerts.

Study button

Changes the current view to Study Alerts.

Cond button

Changes the current view to Condition Alerts.

TrSys button

Changes the current view to Trade System Alerts.

All button

This button toggles between viewing alerts for all symbols and viewing alerts for the symbol selected on the alert list. That symbol is displayed on the **All** button.

Setting Alerts

Several actions are common to all alert windows.

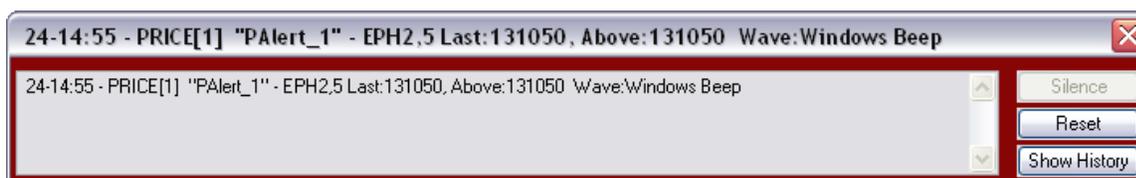
Price, Line, Study, Condition and Trading System alerts only trigger once and must be reset after the initial trigger. Time alerts must also be reset after the initial triggering event if they are set to occur once.

Alerts cannot be reset if they meet the conditions of the alert at the time of reset. For example, the above and below price are reset if that price will not immediately result in a trigger. If a price cannot be reset at the current value, it appears gray.

To reset an alert	Right click the Name or Issue field, then click Reset .
To clear an alert	Right-click the Name or Issue field, then click Clear Alert . The row remains, but the alert information is removed.
To delete an alert	Right click the Name or Issue field, then click Delete Alert . The row is deleted.
To insert a row	Right click the Name or Issue field, then click Insert Row . A row is inserted above the current row.
To delete all alerts	Right click the Name or Issue field, then click Delete All .
To copy an alert	Right click the Name or Issue field, then click Copy .
To open another application	Right-click the Issue , Line , or Study Output field, click Display , then click Chart , Time & Sales , or Order .
To filter alerts	Right click the title bar, then click Filter by [symbol] .
To hide columns	Right click the title bar, then click Hide [column name] .

Depending on your [alert action settings](#), some combination of notification windows is displayed when the alert is triggered.

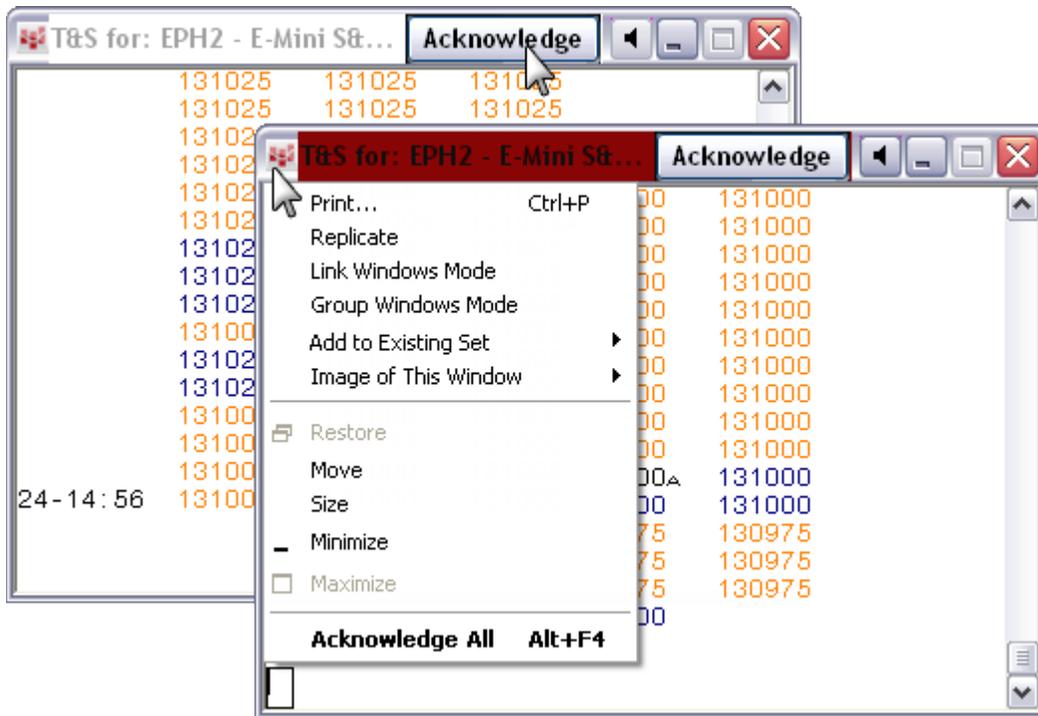
For example, **Sound** actions trigger this notification:



- To silence the alert, click the **Silence** button.
- To reset the alert, click the **Reset** button.
- To show all past alerts of this type, click the **Show History** button.

Place Orders actions trigger a Fill Report when the order is executed, unless you have opted not to receive fill reports on every fill.

Display action trigger chart, time and sales, and order application windows. To close the triggered window, click the **Acknowledge** button. To close all triggered windows, click the CQG IC icon on the toolbar, then click **Acknowledge All**.



Alert Actions: Place Orders, Sound, Display, E-mail

You set the action you want the system to take when your alert conditions have been met. Those actions include order placement, sound, display, and e-mail. Time alerts do not include display actions.

To set actions, double-click the **Actions** field.

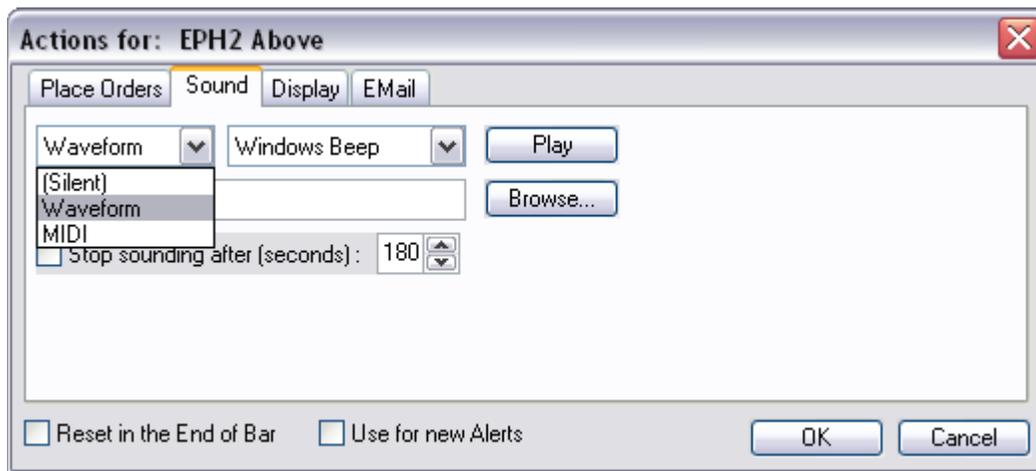
Place Orders Alert Action

1. Double-click the **Actions** field on the Alerts window to open the **Actions** window.
2. Click the **Place Orders** tab.
3. Select an account from the **Account** list.
4. From the **Side** list, choose **Buy**, **Sell**, **Liquidate**, **Cancel**, **Park All**, or **Activate All**. **Park** suspends working orders, and **Activate** restores them to their working state.
5. Type an order quantity.
6. Select an order type.
7. Enter a price if necessary.
8. Click the **On** check box to activate the action.
9. Select the **Reset in the End of Bar** check box to automatically reset the alert at the end of the bar.
10. Click **OK**.

Please note:

- Trading with alerts requires CQG's Advanced Trading package.
- Trading System alerts do not have this option.
- You must be logged on to trade.
- The account must be an active trading account.
- The order must be turned on.
- The alert must be turned on.

Hear Sound



Sound selection includes **Silent**, **Waveform**, and **MIDI**.

If your PC is equipped to play digitized sounds, you can select the **Waveform** option. Use the **Browse** button to find the .wav file, or choose a sound from the list: **Windows Beep**, **Down, Up**, **In the Money**, and **Spare a Dime**.

Likewise, if your PC is capable of playing MIDI files, you can select the **MIDI** option and browse for the file.

Use the **Play** button to preview the sound.

Select the **Stop sounding after** check box and type a time limit when the sound plays. You can also use the arrows. The maximum is 300.

Select the **Reset in the End of Bar** check box to automatically reset the alert at the end of the bar.

Select the **Use for new Alerts** check box to use the current settings as the default for all new alerts that you create.

Open Chart, Time & Sales, or Order Ticket



Select the check box for each window you want opened when the alert is triggered.

Select the **Reset in the End of Bar** check box to automatically reset the alert at the end of the bar.

Select the **Use for new Alerts** check box to use the current settings as the default for all new alerts that you create.

Send E-Mail



To send an e-mail when an alert is triggered, enter the e-mail address of the recipient and then click the **Send EMail** check box.

Note that most mobile carriers offer a way for you to receive text-only e-mails as text messages by entering the e-mail address associated with your mobile phone number. In this way, you can use e-mail to send alerts as text messages to your mobile.

To test your e-mail settings, address an e-mail to yourself and click the **Test** button. To set your e-mail configuration, please see "[Configuring E-Mail Settings](#)" on page 323. If you have problems setting up your e-mail account, please contact your system administrator or CQG Customer Support.

Select the **Reset in the End of Bar** check box to automatically reset the alert at the end of the bar.

To set a price alert

A price alert notifies you when a price crosses the **Above** or **Below** values you set.

1. Type a symbol in the **Issue** box. The **Last** price is automatically displayed.
2. Enter an **Above** or **Below** price that will trigger the alert. You can also right-click to use today's high, today's open, yesterday's high, yesterday's open, or a hit price.

A hit price is an indication that an alert should be triggered if the designated price occurs as a trade, bid, ask, or settlement. The default selection is all, as seen in this picture. In busy markets, you may want to restrict the hit price, so that the alert is triggered only if the contract has actually traded at that price.

Use the right-click menu to set default prices also.

3. Double-click the **Above Actions** or **Below Actions** field. [Set order, sound, display, and e-mail actions.](#)
4. Optionally, type a note.
5. Click the **On** check box to turn the signal on.

To set a time alert

A time alert displays an alert at the user-defined time.

1. On a blank line, optionally type an identifier for the alert in the **Name** field.
2. Double-click the **Date** field, and use up and down arrows to select a date.
3. Double-click the **Time** field, and use up and down arrows to select a time.
4. To use local time, select the **Local** box. Local time appears in the title bar of the **Alert** window. CQG line time is US Central Time and will be used if this box is not checked.
5. Double-click the **Above Actions** or **Below Actions** field. [Set order, sound, and e-mail actions.](#)
6. Select **Once**, **Hourly**, or **Daily** from the menu in the **Occurs** field.
7. Optionally, type a note.
8. Click the **On** check box to turn the signal on.

To set a price X line alert

A Price X Line alert notifies you when a bar crosses above or below a pointer tool value.

The last price represents the last price of the instrument, not the last trend value.

The above and below trigger prices are the same. They appear automatically and represent the last pointer tool value.

If the pointer tool value is above the current price, the above price column is active, and the below price column, which is the same as the above column price, is inactive. Conversely, if the pointer tool value is below the current price, the below price column is active, and the above price column is inactive.

The above alert is triggered if the current price crosses above the pointer tool value. Likewise, the below alert is triggered if the current price crosses below the pointer tool value.

1. Open the Price X Line Alerts window, and open a chart.
2. Add a pointer tool to a chart.
3. Right-click pointer tool on the chart, and then click **Add Price X Line Alert**. The alert is added to the Price X Line Alerts window. The **Line** and **Last** price fields are automatically populated.
4. Optionally type an identifier for the alert in the **Name** field.
5. Optionally, double-click the **Preferences** field to change preferences, including the recalculation setting.
6. Type an **Above** or **Below** price that will trigger the alert. Right-click to set a default value.
7. Double-click the **Above Actions** or **Below Actions** field. [Set order, sound, display, and e-mail actions](#).
8. Optionally, type a note.
9. Click the **On** check box to turn the signal on.

To open a chart, time and sales, or an order placement window, right-click the **Line** field, and click **Display**.

To set a study alert

A study alert notifies you when the study output crosses the above or below values set.

1. On a blank line, optionally type an identifier for the alert in the **Name** field.
2. Double-click the **Study Output** box to open the **Edit Study Alert** window.
3. Select a study from the list.
4. Click the **Setup** button to change study parameters.
5. Type the symbol in the **Issue** box.
6. Click **OK**.

7. Optionally, double-click the **Preferences** field to change preferences, including the recalculation setting.
8. Type an **Above** or **Below** price that will trigger the alert. Right-click to set a default value.
9. Double-click the **Above Actions** or **Below Actions** field. [Set order, sound, display, and e-mail actions.](#)
10. Optionally, type a note.
11. Click the **On** check box to turn the signal on.

To set a condition alert

A condition alert notifies you if the conditions set for a symbol are met. You can choose to reset the alert when a restore signal condition is met.

1. On a blank line, optionally type an identifier for the alert in the **Name** field.
2. Type a symbol in the **Issue** field.
3. Double-click the **Signal** field to open the **Specify Alert Condition** window. You can also right-click to set or edit the signal.
4. Select a condition from the list on the left. To create a new condition, click the **Define Conditions** button.
5. Click the **Insert** button.
6. Click **Close**. The condition is displayed in the **Signal** box.
7. Optionally, double-click the **Preferences** field to change preferences, including the recalculation setting.
8. Double-click the **Actions** field. [Set order, sound, display, and e-mail actions.](#)
9. For some alerts, you may want to set a signal to restore the alert.

For example:

```
signal =(MA(@,Sim,14) xabove MA(@,Sim,21))[-1]
```

```
restore signal = (MA(@,Sim,14) xbelow MA(@,Sim,21))[-1]
```

In this case, we've used an offset, so that the condition is based on one bar ago. You may want to consider doing the same when you use restore signals.

Double-click the **Restore Signal** field to define the signal.

10. Optionally, change the preferences for the restore signal.
11. Optionally, type a note.
12. Click the **On** check box to turn the signal on.

To set a trading system alert

A trading system alert notifies you when your trading system indicates that a trade should be made.

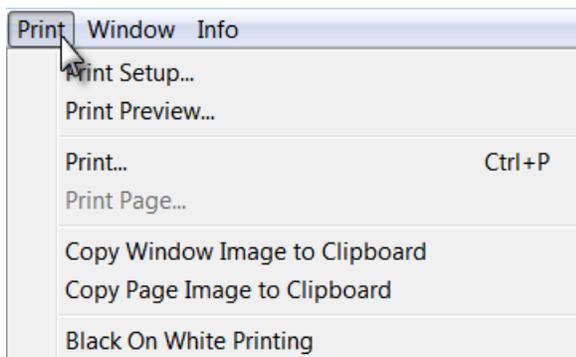
1. Click the **Trading System** field, then click the arrow to see the trading system menu.
2. Select a trading system from the list.
3. Type a symbol in the **Issue** field. The **Trading System** field includes the parameters that are set for that trading system.
4. Optionally, double-click the **Preferences** field to change preferences, including the recalculation setting.
5. If you have a current position in the issue, then type it in the **Position** field, so that as this field is updated, previous trades are considered also.
6. Double-click the **Actions** field. [Set sound, display, and e-mail actions.](#)
7. Optionally, type a note.
8. Click the **On** check box to turn the signal on.

Working with Images

CQG offers several ways for you to save and send images of your windows and pages through the [Communications toolbar](#) and the [Control Button menu](#) on individual windows.

You can send images using IM or e-mail. Images can be saved using CQG's naming conventions, or you can name images yourself.

To quickly save images from the menu bar, click **Print**, then click **Copy**. The image is available on your clipboard to be pasted into an e-mail or document:



Sending Images

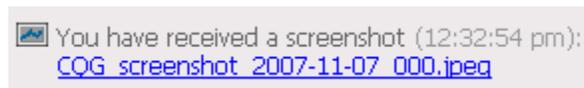
You can send images of windows and pages directly through CQG via e-mail or IM from a window.

To send an image using IM

1. Click the **SendImg** button. The Send Screenshot window opens:



2. Click a contact name.
3. Click **Ok**. The image of your screen is sent as a .jpeg as part of your IM conversation, like this:



To view an image sent by IM

Click on image link in the IM message. Your picture viewer will open and display the image.

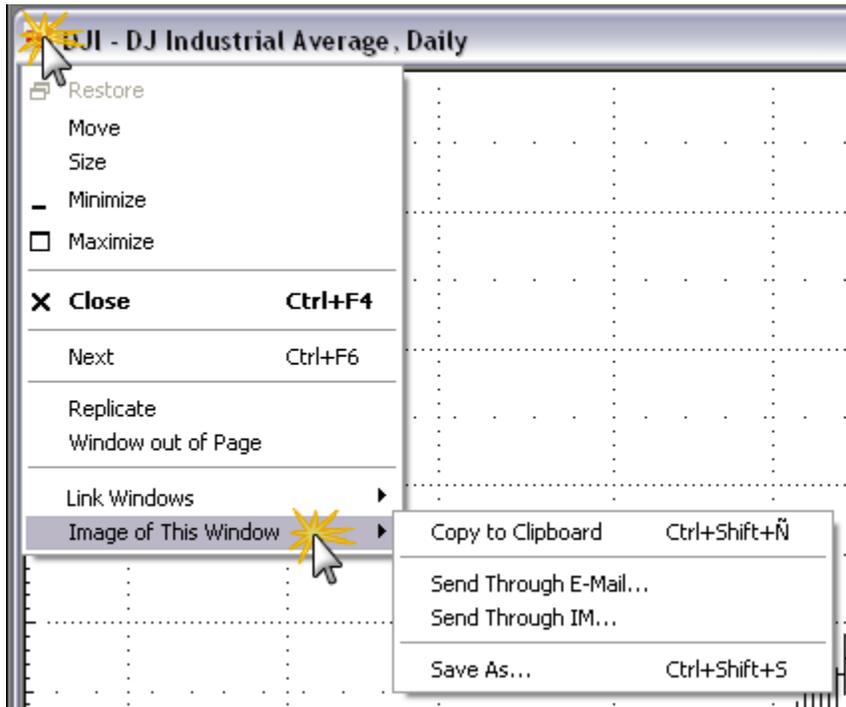
Depending on your viewer, you can zoom in and out. You can also save the image to your computer.

To send an image using e-mail



1. Right-click the **SendImg** button.
2. Click Send Page Image or Send Window Image.
3. Click Through E-Mail.
4. Complete the e-mail message.
5. Click **Send**.

To send an image from a window



1. Click the CQG Logo button on the title bar.
2. Click **Image of This Window**.
3. Click **Send Through Email** or **Send Through IM**.
4. Complete the e-mail message or the IM message.

Saving Images

Images can be saved using CQG naming conventions, or you can choose your own file names and types.

Naming convention for page:

<YYMMDD_hhmmss>_CQG_Screen

Example: 080721_132731_CQG_Screen

Naming convention for window:

<YYMMDD_hhmmss>_CQG_<view>_<contract>

Examples:

080721_132731_CQG_Bar_Chart_Daily_E-Mini_Standard_Poors_500_Dec07

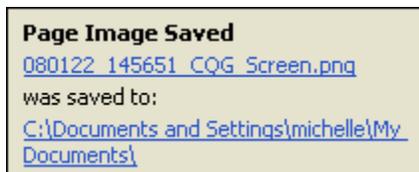
080721_132731_CQG_DOMTrader

File Type:

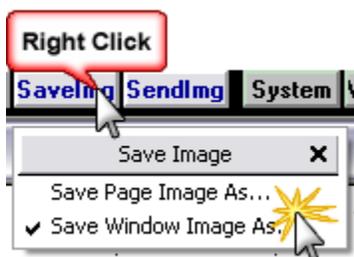
Using the Save As option, you can save images as .bmp, .gif, or .png files. CQG saves files as .gif.

To save an image using CQG naming conventions

Click the **SaveImg** button. You will receive confirmation that your image was saved:



To save an image using your own file name



1. Right-click the **SaveImg** button.
2. Click **Save Page Image As** or **Save Window Image As**.
3. Name and save your file.

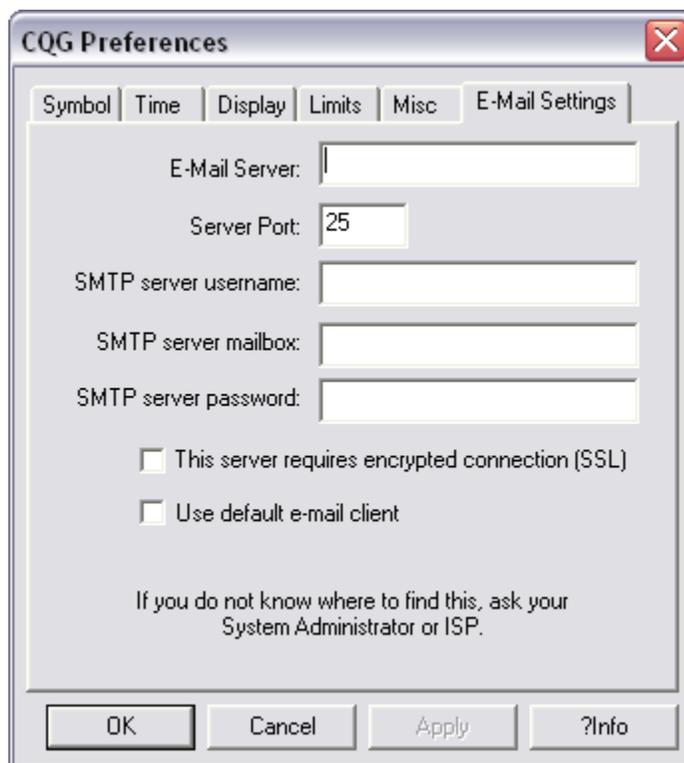
To save an image from a window

1. Click the CQG Logo button on the title bar.
 2. Click **Image of This Window**.
 3. Click **Copy to Clipboard**.
- or
3. Click **Save As** to choose your own name for the file.

Configuring E-Mail Settings

Your system administrator can help you configure your e-mail.

1. Click the **Setup** button.
2. Click System Preferences.
3. Select the **E-Mail Settings** tab. The window will look something like this:



4. Enter the appropriate values in these fields:

Field	Description
E-Mail Server	Address of mail server that supports SMTP connection.
Server Port	SMTP server port number.
SMTP server username	User name registered on the server.
SMTP server mailbox	Mailbox on behalf of which mail will be sent.
SMTP server password	User password.
This servers requires encrypted connection.	If the server requires SSL, then check this box.
Use default e-mail client.	If you want e-mails sent using your own e-mail application, then check this box. Please note that automatically sent e-mails, such as alerts and auto-run market scans, will always be sent via COG because of anti-spam limitations.

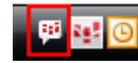
5. Click **OK**.

Live Chat

CQG's Live Chat allows you to contact CQG's Customer Support team directly through the Integrated Client.

You are also able to send a picture of your screen in your Live Chat message for quicker and easier troubleshooting.

The Live Chat and IM icon is displayed on your taskbar, like this:

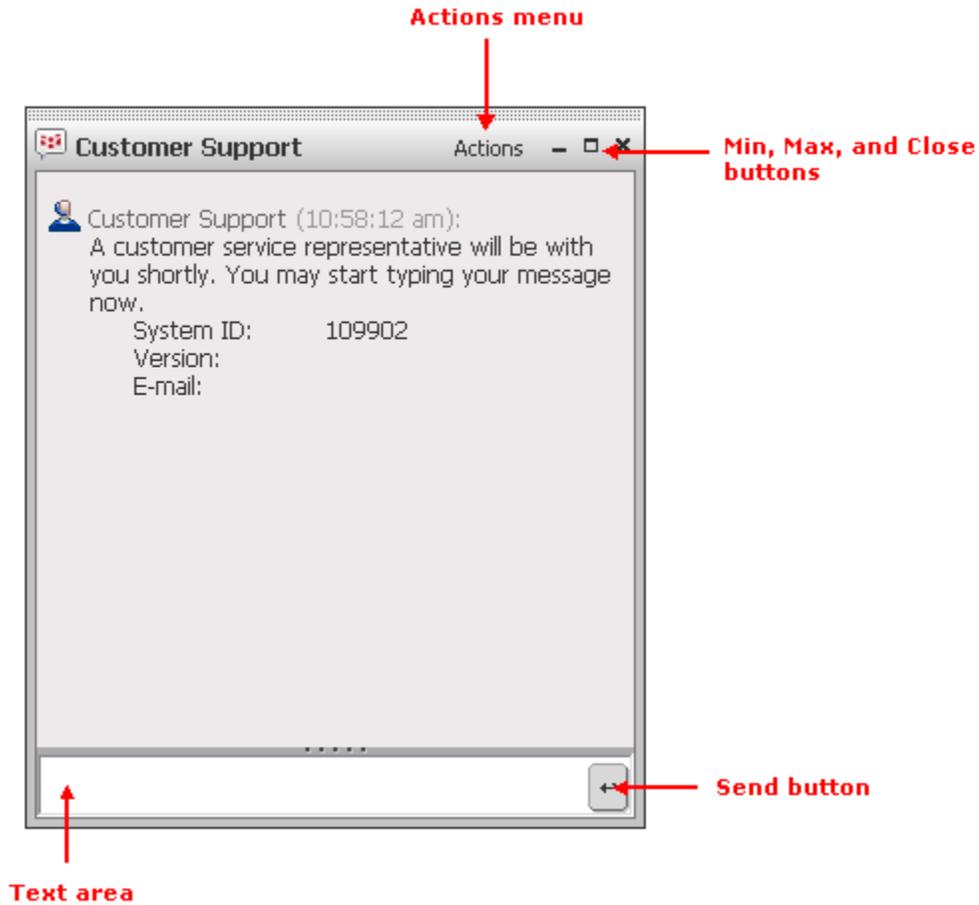


You can choose one of two enablements for IM:

- Full Access (Live Chat and IM)
- Live Chat Only

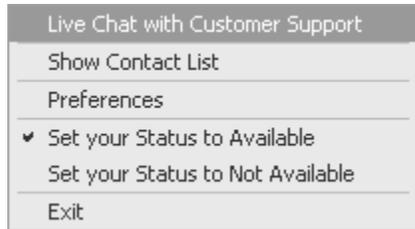
Live Chat Components

When you open the Live Chat window, it looks like this:

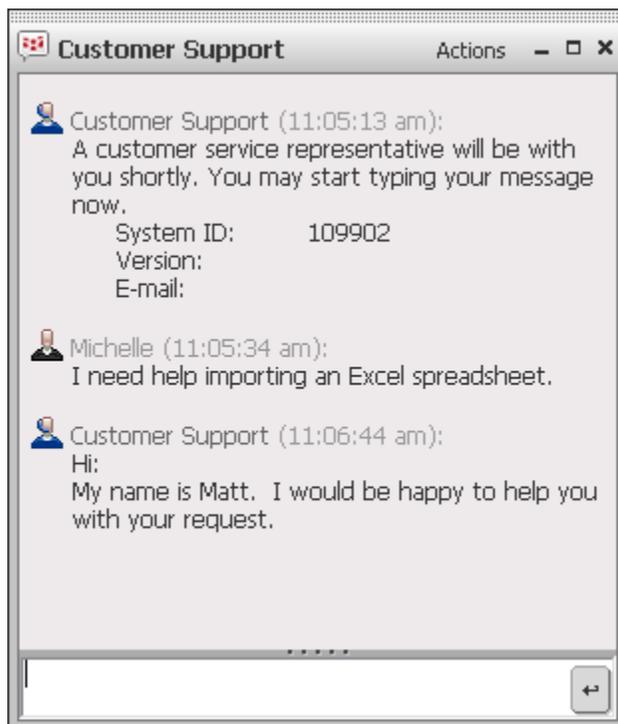


Initiating Live Chat with CQG Customer Support

1. Click the Live Chat and IM icon on your task bar. This menu opens:

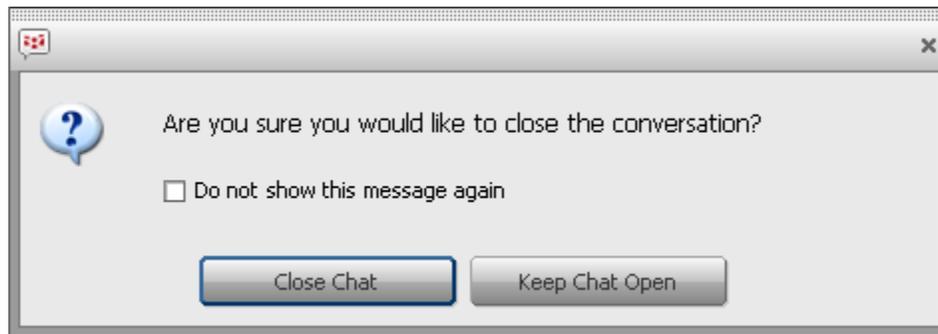


2. Click **Live Chat with Customer Support**. The Live Chat window opens.
3. Type your message in the field at the bottom of the window.
4. Click the send button. Your message is received immediately by CQG Customer Support (CSP). Your chat window will look like this:



5. When you are finished your Live Chat conversation, click the close button at the top of the Live Chat window.

This message is displayed:



6. Click **Close Chat**.

To use the Communications Toolbar

CQG offers a Communications Toolbar, which can be added using the Toolbar Manager. You can use this toolbar for Live Chat.



To initiate Live Chat, click the **LiveChat** button.

To send a screen shot with Live Chat

1. Click **Actions**.
2. Click **Send Screenshot**. The system will automatically take a picture of your current screen and send it to CSP.

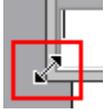
To paste an image in a Live Chat message

1. Click **Actions**.
2. Click **Paste Image**. The system will automatically place the image from your clipboard in the message field. You can send it immediately or add a comment and then send it.

In order to send an image, you must first save it to your clipboard.

To re-size the window

1. Hover your mouse in the corner of the window until your cursor looks like this:



2. Click and drag the cursor until the window is the size that you want it, and then release.

In this same way, you can also move each of the window borders to lengthen and widen the window.

To minimize the window

Click the minimize button at the top of the Live Chat window. The window will be minimized and will appear on your task bar, similar to this:



Click **Customer Support** on your task bar to display the Live Chat window again.

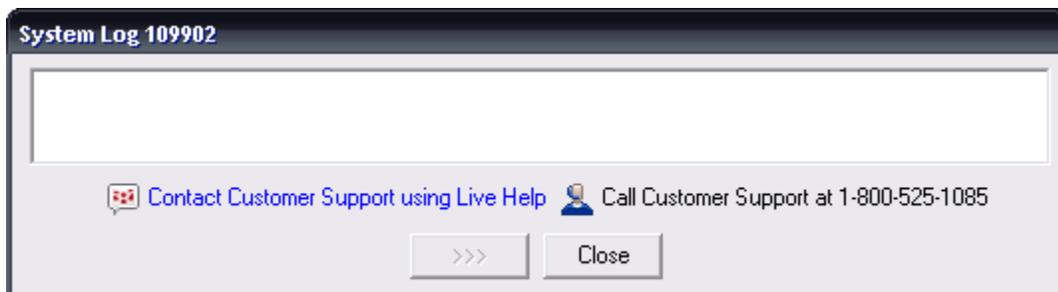
To maximize the window

Click the maximize button at the top of the Live Chat window. The window will be maximized to fit your screen.

Click that button again to return to the standard size.

To open Live Chat from CQG windows

CQG Integrated Client also has links to Live Chat on the login screen and on the System Log, like this:

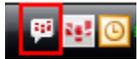


Click the link to start a conversation with CSP.

Instant Messaging

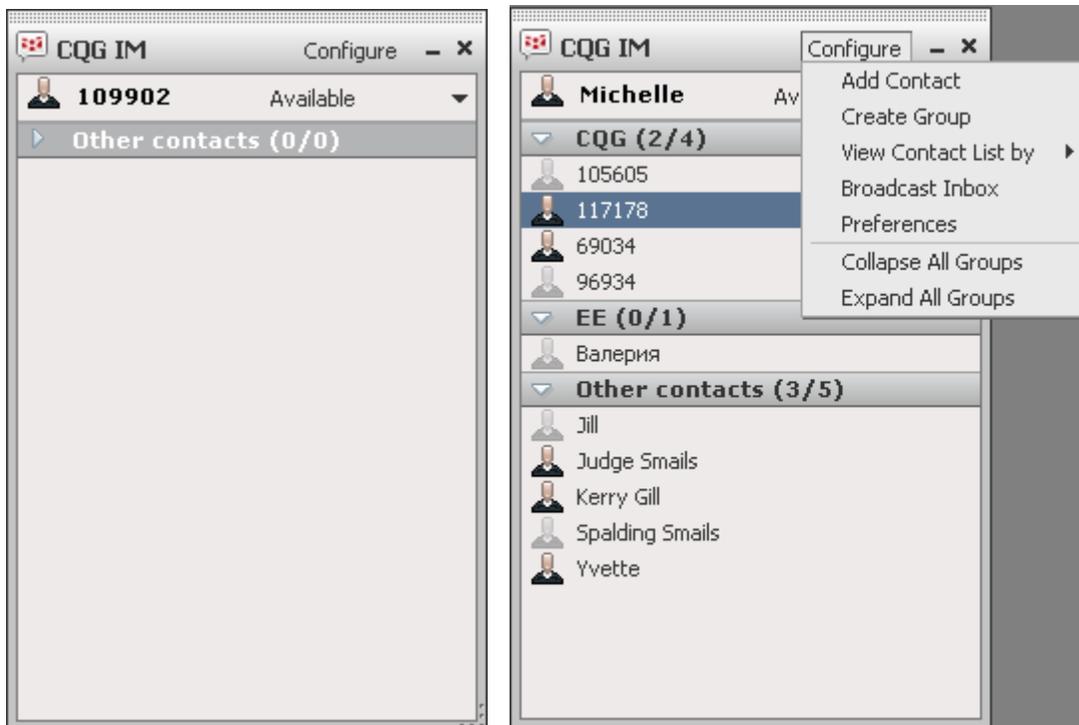
COG's IM allows you to communicate with other COG users without having to use a separate instant messaging application.

Using IM, you can share pictures of your screen with other users. The Live Chat and IM icon is displayed on your taskbar, like this:



IM Window

The IM window when you first open it and after you have added contacts:



Configuring IM

Preferences can be accessed in two ways:

- Click **Configure** and then click **Preferences**.
- Click the **Live Chat and IM icon** and then click **Preferences**.

To change your display name

1. Click **Configure**.
2. Click **Preferences**. The Preferences window opens.
3. In the **My display name** field enter the name you want other users to see.

Users who do not specify a name will be identified by their system numbers.

To set timeout threshold

1. Click **Configure**.
2. Click **Preferences**. The Preferences window opens.
3. Select a time, between 5 and 50 seconds, for messages to remain active before timing out.

To change your status

You can let other users know if you are available.

To the right of your name on the IM window is an availability drop down. Click the arrow to change your status.

You can also click the **Live Chat and IM icon** to set your status.

If you would like your status to automatically be set to available each time you log on:

1. Click **Configure**.
2. Click **Preferences**. The Preferences window opens.
3. Select the **Change my status** check box.

Managing Contacts

You can add both individual contacts and groups. Manage these contacts using the Configure menu and the right-click menu.

To add individual contacts

1. Click **Configure**.
2. Click **Add Contact**. This window opens:



3. Enter the system number of your contact.
4. Click **Add**. If you have entered an incorrect number, you will receive this message:



5. Continue to add contacts.
6. When you are finished, close the window.

To create a group

1. Click **Configure**.
2. Click **Create Group**.
3. Enter a name for the group.
4. Click **Create**. The group will be displayed on your contact list.

To move a contact to a group

1. Right-click on a contact.
2. Click **Move to Group**.
3. Click the group name.

You can also drag and drop the contact into the group.

To set contact alerts

1. Right-click on a contact.
2. Click **Alert Me When Contact is Available**. A check mark will be placed near the alert to let you know that alert is active.

To sort the contact list

1. Click **Configure**.
2. Click **View Contact List by**.
3. Click **Group Name** or **Availability**.

To expand and collapse all groups

1. Click **Configure**.
2. Click **Collapse** or **Expand**.

To block/unblock a contact

1. Right-click on a contact.
2. Click **Block Contact**. That contact will not be able to IM you, and you will appear unavailable to that user.
3. Click **Block**.

To unblock a user, select **Unblock Contact**.

To remove a contact

1. Right-click on the contact.
2. Click **Remove from Contacts**.
3. Click **Delete**.

To rename a group

1. Right-click on the group.
2. Click **Rename Group**.
3. Enter the new name.
4. Click **Rename**.

To delete a group

1. Right-click on the group.
2. Click **Remove Group**.
3. Click **Delete**. You will not delete the contacts within that group.

Initiating a conversation

1. Click the Live Chat and IM icon on your taskbar.
2. Click **Show Contact List**.
3. Double-click the name of the contact. The IM window will open.
4. Type your message in the field at the bottom of the window.
5. Click the send button.

You can also right-click on a contact name and then click **Start Conversation**.

To use the Communications Toolbar

COG offers a Communications Toolbar, which can be added using the Toolbar Manager. You can use this toolbar for IM.



To open an IM window, click the **IM** button.

To send a broadcast message to a group of people

1. Right-click on a group.
2. Click **Broadcast Message**. The conversation window will open. The message you send will be sent to all contacts in that group.

To open the Broadcast Inbox

1. Click **Configure**.
2. Click **Broadcast Inbox**. Broadcast messages will be displayed here.

Understanding IM Icons

The icons on the IM window let you know the status of your contacts.

 = contact is not available

 = contact is available

 = contact is writing

The Live Chat and IM menu (opened by clicking the icon) identifies which of your contacts are available and whether you have open conversations.

 = contact is available

 = active messaging with contact

The CQG Web Browser

CQG provides direct access to CQG's website through **TheWeb** button.

Use the browser like any browser, noting that navigation buttons are on the toolbar and not on the browser window.

Opening the CQG Web Browser

Click the **TheWeb** button on the toolbar to open the browser.

If the button is not displayed, click the **More** button, and then click **TheWeb**.

To add the **TheWeb** button to the toolbar:

1. Click the **Setup** button.
2. Select **Customize Toolbar**. This displays the Toolbar Manager window.
3. Click the >>> button in the **Add/Remove** column in the **Chart, Quote, News...** row.
4. Click **TheWeb** in the button column.
5. Click the **Close** buttons on the Customize Application Toolbar and Toolbar Manager windows.

CQG Web Browser Toolbar

The CQG Web Browser contains these buttons, which function in the same way as in any other Web browser:

<< >> button

Click the **Forward** and **Back** button to display the previously viewed web page.

Right-click the **Forward** and **Back** button to display a subsequently viewed web page.

Home button

Click this button to return to the default web page.

Search button

Click this button to open the default search engine.

Stop button

Click this button to halt the current search.

Refresh button

Click this button to refresh the page.

Faves button

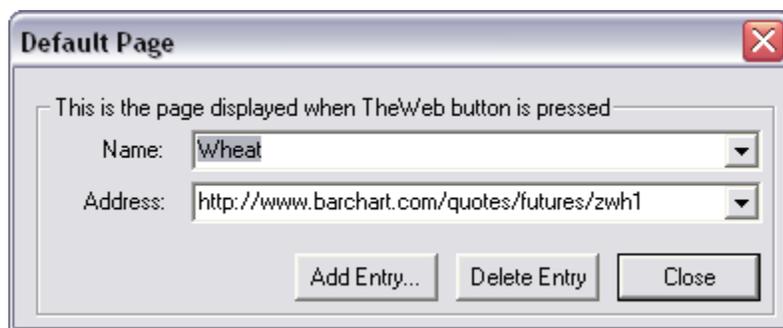
Click this button to open the Favorites list from your PC's default browser.

Setting Web Preferences

Web preferences include setting the default home page, changing the font size, and showing the address bar.

To create a list of default web pages

1. Click **TheWeb** button and make sure the [address bar](#) is visible.
2. Go to the web page you'd like to make the default.
3. Copy the url of that page to the clipboard.
4. Click the **Setup** button.
5. Click **The Web Preferences**. You can also right-click the **Home** button.
6. Paste the address in the **Address** box.
7. Type a name for the page in the **Name** box.

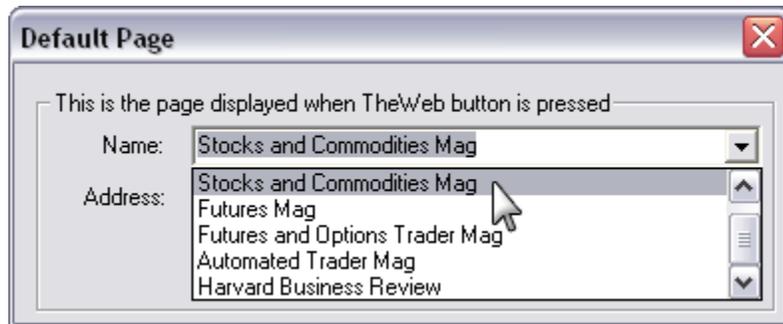


8. To add other addresses, click the **Add Entry** button.
 9. Type the name and url.
 10. Repeat steps 8 and 9 until you have added all of the default pages you'd like. The last selected page is the current default.
 11. Click **Close**.
- To delete an entry, click the **Delete Entry** button.
 - To edit an entry, make the necessary changes, then click **Close**.

[To change the default web page](#)

To change the default web page

1. Right-click the **Home** button.
2. Using either the **Name** or **Address** menu, select the default page.



3. Click **Close**.

If the web page you would like as the default is not part of the list already, you can [add it to the list](#).

To change web page font size

1. Click the **Setup** button.
2. Select **The Web Fonts**.
3. Select the desired font size from: **Largest**, **Larger**, **Medium**, **Smaller**, and **Smallest**.

To show the address bar

1. Click the **Setup** button.
2. Click **Show address bar**, so that the check mark appears.

If you choose not to show the address bar, type the url in the entry field at the top-left of the window:



CQG Data

CQG receives its data directly from the exchanges. Immediately after CQG has been enabled, the system begins collecting and displaying real-time data from the CQG network.

This data is continually monitored, both visually and electronically, to filter out bad ticks. When bad ticks are detected, corrections are immediately processed and sent to users via the CQG Data Network. Likewise, when inserts, deletes and fast markets indications are received, the system immediately sends them to users.

In the event of an interruption in the operation of CQG or the data source, the CQG network will automatically correct the data and fill in the gaps that occurred as a result of the interruption. CQG fills in these gaps during the database update transmission.

Ordering Data

To order, call 1-888-233-1173 (US) or 44-(0)-20-7827-9500 (Europe).

You can also place an order on the [Data Factory Web site](#).

Go to: <https://www.cqgdatafactory.com/>.

The CQG Data Factory

http://www.cqg.com/GetFile.aspx?aliaspath=%2fImages%2fDataFactoryHDlarge1_jpgCQG's Data Factory offers decades of historical market data and intraday numbers from 1987. This data can be used with CQG's analysis tools or with other data analysis tools.

CQG provides Data Factory data on a per commodity basis. Each commodity may contain more than one contract month.

Data Categories

- Financial futures
- Commodity futures
- Cash commodity investments
- Cash currencies and currency futures
- Equity indices
- Treasury benchmarks

Data Types

- Time and sales (tick-by-tick)
- Intraday bar data (1-240 minute intervals)
- Daily bar data (open, high, low, and last)
- Daily volume and open interest

Tullett Prebon historical data is offered as:

- tick-based data
- intraday data (from one-minute snaps to hourly snaps)
- daily data

Data Format

- ASCII fixed-width delimited raw data (space, comma, or tab separated)

Data is delivered for a CQG trading day that typically runs from 16:00 one day to 15:59 the next day (all time stamps are US Central Time). This is not the same as a calendar day. The evening session will be included in the next trading day's data. Sessions are set up in accordance with exchange specifications. The exception is that Data Factory data requires an additional session for sessions spanning 00:00 CT. Sessions may not be consistent across contracts, but tend to be consistent for a specific contract over time.

The data is delivered with CQG PC symbols. These symbols may or may not correspond to Exchange symbols.

CQG Integrated Client Charting and Studies User Guide

November 14, 2012 | Version 13.5

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Charting and Studies in CQG IC

CQG provides charting with flexible time and price scaling. Keep the pages or create new ones quickly and easily for a different perspective.

CQG provides more than one hundred studies and indicators. Plus we provide access to a number of third-party services that can enhance analysis and help make trading decisions.

About this Document

This document is one of several user guides for CQG Integrated Client (CQG IC).

To ensure that you have the most recent copy of this guide, please [go to the user guide page on CQG's website](#).

You can navigate the document in several ways:

- Click a bookmark listed on the left of the page.
- Click an item in the Table of Contents.
- Click a blue, underlined link that takes you to another section of the document. To go back, use Adobe Reader Page Navigation items (**View** menu).

If you are looking for a particular term, it may be easier for you to search the document for it. There are two ways to do that:

- Right-click the page, and then click **Find**.
- Press Ctrl+F on your keyboard.

Please note that images are examples only and are meant to demonstrate and expose system behavior. They do not represent actual trading situations.

This document is intended to be printed double-sided, so it includes blank pages before new chapters.

Related Documents

CQG IC user guides:

- [CQG Basics](#)
- [Advanced Analytics](#)
- [Trading](#) and [CQG Spreader](#)
- [Options](#)

Customer Support

CQG Customer Support can be reached by phone from Sunday, 2:30 p.m. CT through Friday, 5:00 p.m. CT. These hours also apply to Live Chat.

United States	1-800-525-1085
United Kingdom	+44 (0) 20-7827-8270
France	+33 (0) 1-74-18-07-81
Germany	+49 (0) 69-6677-7558-0
Japan	+81 (0) 3-3286-6877
Russia	+7 495-795-2409
Singapore	+65 6494-4911
Sydney	+61 (2) 9235-2009

For questions about CQG Integrated Client, please e-mail websupt@cgg.com 24 hours a day, 7 days a week.

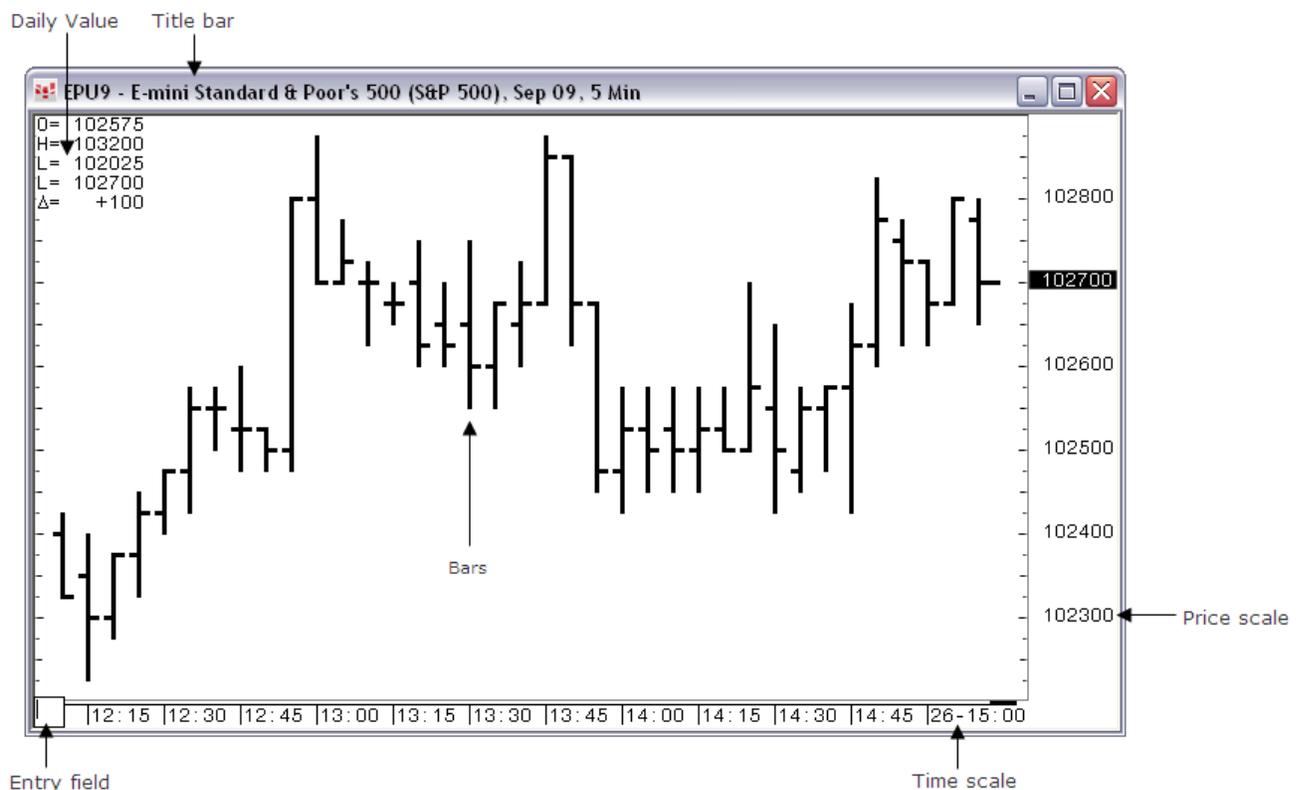
If you have questions about CQG documentation, please [contact the help author](#).

CQG Charts

CQG provides a number of chart alternatives, all offering maximum flexibility that allows you to set up charts and data just the way you like them.

To open a chart, click the **Chart** button on the toolbar. If the button is not displayed, then click the **More** button, and then click **Chart**.

Chart Components



Title Bar

The title bar includes the symbol, contract description, contract date, and chart interval. It will also indicate if continuation has been applied to the chart.

Entry Field

The [entry field](#) is used to enter the symbol for the chart. You can also enter the chart interval in this field.

Price Scale

The price scale can be displayed on either the right or left of the chart. You can also choose to include labels or not. Clicking and dragging moves the scale. [Read more about Price Scale.](#)

Time Scale

Click and drag to the time scale to the left to choose smaller time intervals (e.g. moving from 30-min to 15-min) and to the right to widen the gap between time intervals (e.g. moving from 15-min to 30-min). [Read more about Time Scale.](#)

Bars

The bar display changes depending on the chart type.

Daily Value Box

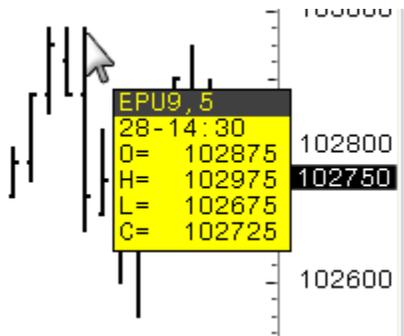
Displays the open, high, low, last, and net change. The Daily Value Box can be hidden by right-clicking on it, and selecting **Hide Daily Value**.

```
O= 130125  
H= 131375  
L= 129625  
C= 130675  
Δ= +575
```

[Add Study Details to Daily Value Box](#)

Mouse Text

Mouse text identifies the contract; interval; time; and open, high, low, and close.



The display of mouse text is controlled in miscellaneous preferences.

Chart Add-Ons

Charts can be enhanced with both analytic and trading tools:

- [Cursors](#)
- [Cursor Value Box](#)
- [Pointer Tools](#)
- [Conditions](#)
- [Studies](#)
- [Order Book](#)
- [SnapTrader](#)

Chart Toolbar

The magnet button, **IntD** button, and **Hist** button are always displayed on the chart toolbar. Other buttons can be added and removed as needed. You can also add Chart Type, Pointer Tools, Studies, and Zoom toolbars.

Magnet button

The **Magnet** button is used in two ways: as a snap mechanism with a pointer tool and to activate highlighting on the pop up value box.

Off: 

On: 

The magnet strength can be adjusted. The strength denotes how close the point of the mouse has to be to the low (directly below it) for the line to snap and lock on the low. A setting of 50 is good for most people.

This button is always displayed.

To use the magnet as a snap mechanism with a pointer tool

1. Click the **Magnet** button to turn it on.
2. Select a pointer tool.
3. Move the cursor towards the value you wish to plot with the pointer tool.
4. When the value is highlighted in the pop up value box, click the chart. The pointer tool will snap to the value on the chart.

To use the magnet to activate highlighting on the pop up value box

1. Click the **Magnet** button to turn it on.
2. Move the cursor to the desired high or low price on the chart. The pop up value box will be displayed, and the high or low value will be highlighted.

To set magnet strength

1. Right-click the **Magnet** button. The **Chart Field Values** window opens.
2. Either enter a value or use the arrows to select a value for **Magnet Strength**. The higher the value, the stronger the magnet.
3. Click **OK**.

SnapTrader button

Adds the SnapTrader to the chart. This button is not visible if your system is not enabled for trading.

Scroll buttons



These buttons allow you to scroll left and right and up and down.

- Click to scroll to the left on a chart. Right-click to scroll to the right on a chart.
- Click to scroll up on a chart by 5 units on the vertical axis. Right-click to scroll down on a chart by 5 units on the vertical axis.

Scale buttons



These buttons allow you to move up and down the price and times scales. The price scale arrows are vertical, and the time scale arrows are horizontal, just like the axes on the chart.

- Click to expand the chart time scale, decreasing the amount of data displayed. Right-click to compress the chart time scale horizontally, thereby increasing the amount of data displayed.
Keyboard equivalents: **SHIFT** + ← and **SHIFT** + →
- Click to expand the chart value/price scale vertically, thereby giving the more definition to the display. Right-click to compress the chart value/price scale vertically, thereby giving the display less definition.
Keyboard equivalents: **SHIFT** + ↑ and **SHIFT** + ↓

Tracer button

Opens the **Formula Tracer**.

ReScI button

The Rescale button is a convenient tool to reset the chart scales to their default values.

Click the ReScI button to restore only the vertical, value/price scale to the default spacing. Keyboard shortcut = **Home**.

Right-click the **ReScI** button to restore both the Value/Price Scale and the Time Scale to the default spacing and to activate the AutoScale feature. Once the AutoScale feature is activated, the charts will automatically scale themselves until a manual scaling command is entered. Keyboard shortcut = **Enter**.

This setting applies to all studies on the active chart.

Studies button

Opens the [Add Study](#) window.

AnaLock button

The AnaLock button is used with [overlaid charts](#) and is available only if the [Analog study](#) is enabled.

When this button is turned on, the scales, both time and price, are locked for simultaneous scaling and scrolling of all charts.

When this button is turned off, you can modify each chart's price and time scale separately. Modification is made only to the foreground chart. To change the background chart, bring it to the foreground (right-click a bar for those options).

Press **CTRL** to invert these actions. In this way, you can temporarily change the function of the button without having to turn it on and off.

<IntD> button

Switches from a historical to an intraday chart. This button is always displayed.

1. Click or right-click the **<IntD>** button to change from a historical time interval to the last used intraday time interval.
2. Click again to change to the next smaller intraday time interval.
3. Right-click again to change to the next larger intraday time interval.

Example: Click twice on the **<IntD>** button to change a 60-minute bar chart to a 15-minute bar chart. The time interval sequence *n* is 1, 5, 10, 15, 30, and 60 minutes, and daily.

Note: Charts maintain their continuation settings when switched between daily and intraday using the **<IntD>** and **<Hist>** buttons.

The coloring along the horizontal axis for intraday charts that span more than one day indicates the different days covered by the chart. Additionally, the mouse text indicates the date of the selected bar.

<Hist> button

Switches from an intraday to historical chart. This button is always displayed.

- Click or right-click the Hist button to change from an intraday time interval to the last used historical time interval.
- Click again to change to the next shorter historical time interval.
- Right-click again to change to the next longer historical time interval.

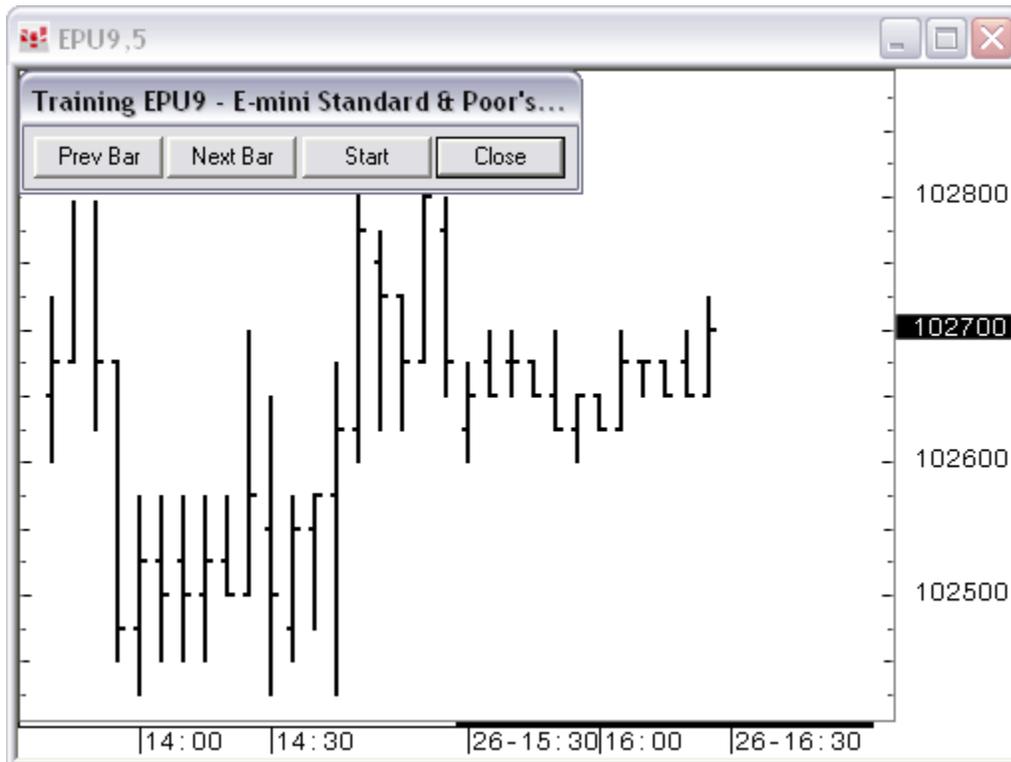
The time interval sequence for the **<Hist>** button is 60 Minutes, Daily, Weekly, Monthly, Quarterly, Semi-Annual, and Annual.

Charts maintain their continuation settings when switched between intraday and historical using the IntD and Hist buttons.

Using Charts in Training Mode

Viewing charts in training mode allows you to see how new data affects previous study values. Additionally, it allows charts to be scrolled one bar at a time. To view a chart in training mode:

Right-click the **Setup** button, and click **Training Mode**. The training toolbar is added at the top of the chart.



- Click the **Start** button to move the chart back 100 bars.
- Click the **Next Bar** button to show the next bar at the right side of the chart.
- Click the **Prev Bar** button to show the previous bar at the left side of the chart.
- Click the **Close** button to complete the training mode process.

Selecting Chart Preferences

Chart preferences include:

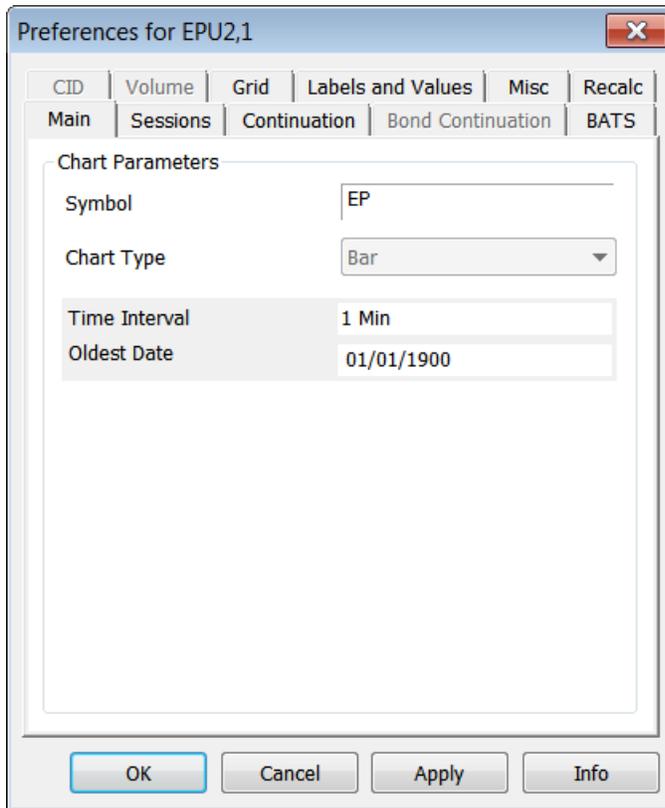
- **Main:** allows you to set time interval and oldest date.
- **Sessions:** allows you to indicate the sessions to be included in the chart.
- **Continuation:** allows you to set preferences specifically for continuation charts.
- **Bond Continuation:** allows you to set preferences specifically for bond continuation charts.
- **BATS:** allows you to choose bids, asks, trades, and settlements display settings.
- **CID:** allows you to select contributors to include as sources on intraday charts.
- **Volume:** allows you to choose volume as a display criteria for bar data.
- **Grid:** allows you to choose how the chart will be divided.
- **Labels and Values:** allows you to set properties for Daily Value and Cursor Value boxes.
- **Misc:** allows to set various display characteristics.
- **Recalc:** allows you to set when data will be recalculated.

To set chart preferences, click the **Setup** button and then click **Chart Preferences**.

Setting Main Preferences

On this window, change the chart's interval, from 1 min to annual, and change the oldest date. Changing the oldest date allows you to see data from a smaller time period, for example from 1995 through today. An added benefit to changing this date is a possible performance improvement, as you are requesting a smaller amount of data.

These preferences apply to the current symbol and chart type. Those fields cannot be changed.

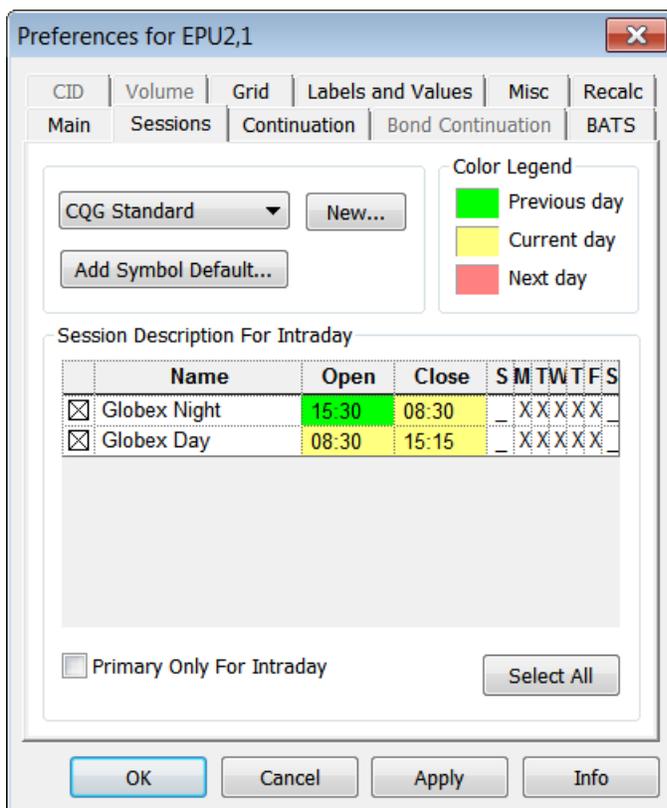


To access these settings, click **Setup**, then **Chart Preferences**, and then click the **Main** tab.

Setting Session Preferences

These settings indicate which session(s) to include on the chart. You can:

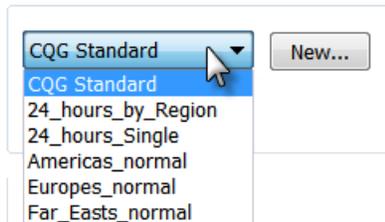
- change the session in use
- modify an existing session (except CQG Standard)
- create custom sessions
- set default sessions for individual symbols



To access these settings, click **Setup**, then **Chart Preferences**, and then click the **Sessions** tab.

Sessions are created on the **Custom Sessions and Symbol Association** window, which has two tabs: **Custom Sessions** and **Set Defaults for Custom Charts**.

To change the session type



Click the arrow, then click the session type you want to use for the active chart and symbol.

- **CQG Standard** = Uses CQG line time, US Central Time, for pit and evening sessions. These are actual trading sessions for each commodity and cannot be modified.
- **24_hours_by_Region** = Divides the day into 3 sessions (CT):
 - Far Eastern = 5:00 p.m. on the previous day until midnight of the current day
 - European = 12:00 a.m. until 7:00 a.m.
 - American = 7:00 a.m. until 5:00 p.m.
- **24_hours_Single** = Starts the session at midnight of the current day and ends the session at midnight the following day.
- **Americas_Normal** = Starts the session at 7:00 a.m. of the current day and ends the session at 5:00 p.m. of the current day.
- **Europes_Normal** = Starts the session at midnight of the current day and ends the session at 7:00 a.m. of the current day.
- **Far_Easts_Normal** = Starts the session at 5:00 p.m. of the previous day and ends the session at midnight of the current day.

To remove a session from the display

To disable a particular session, click the box to clear the X.

Session Description For Intraday

	Name	Open	Close	S	M	T	W	T	F	S
<input type="checkbox"/>	Globex Night	17:00	08:00	_	X	X	X	X	X	X
<input checked="" type="checkbox"/>	Globex Day	08:00	13:30	_	X	X	X	X	X	_
<input checked="" type="checkbox"/>	Globex	13:30	16:15	_	X	X	X	X	X	_

To use only primary session

Click the **Primary Only For Intraday** check box (at the bottom of the window) to display only the primary session on the chart.

This preference will be used for all charts of this contract.

If you would like to use only primary sessions with historical charts, go to miscellaneous preferences and select **Create Daily & Weekly bars from intraday data**.

To create a session

The system allows you to create a copy of an existing session (any session but COG Standard) in order to modify it. In the case of COG Standard, you can create a new session. In both cases, the custom session inherits the settings of the original session.

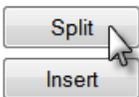
The options selected on this window apply only to the current chart.

Sessions are created on the **Custom Sessions and Symbol Association** window, which is opened from the preferences window.

Note that custom sessions cannot be created for inverse contracts or Market Profile.

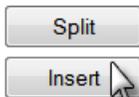
1. If you select COG Standard, click the **New** button, then skip steps 2-4.
2. From the session list, select any session other than COG Standard.
3. The **New** button changes to a **Modify** button. Click it.
4. Click the **Copy** button.
5. Type a name for the session, then click **OK**. The Custom Sessions window opens.
6. To split the session into multiple sessions, click the **Split** button. The divided session is displayed on two lines:

#	P	Name	Open	Close	S	M	T	W	T	F	S
0		Session1	17:00	17:00		X	X	X	X	X	
			17:00	17:00							



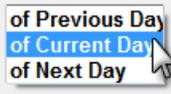
7. To add a session, click the **Insert** button. The additional session is displayed on the next line:

#	P	Name	Open	Close	S	M	T	W	T	F	S
0		Session1	17:00	17:00		X	X	X	X	X	
0		Session1	17:00	17:00		X	X	X	X	X	



8. To designate the primary session, click the **P** field, so that an X is displayed.
9. To change open and close time and day, type a new time or click the arrows on the right of the field. Pick day from the list on the left.

#	P	Name	Open	Close	S	M	T	W	T	F	S
0		First session	00:00	11:59		X		X	X	X	
0		Second session	12:00	23:59		X	X	X	X	X	



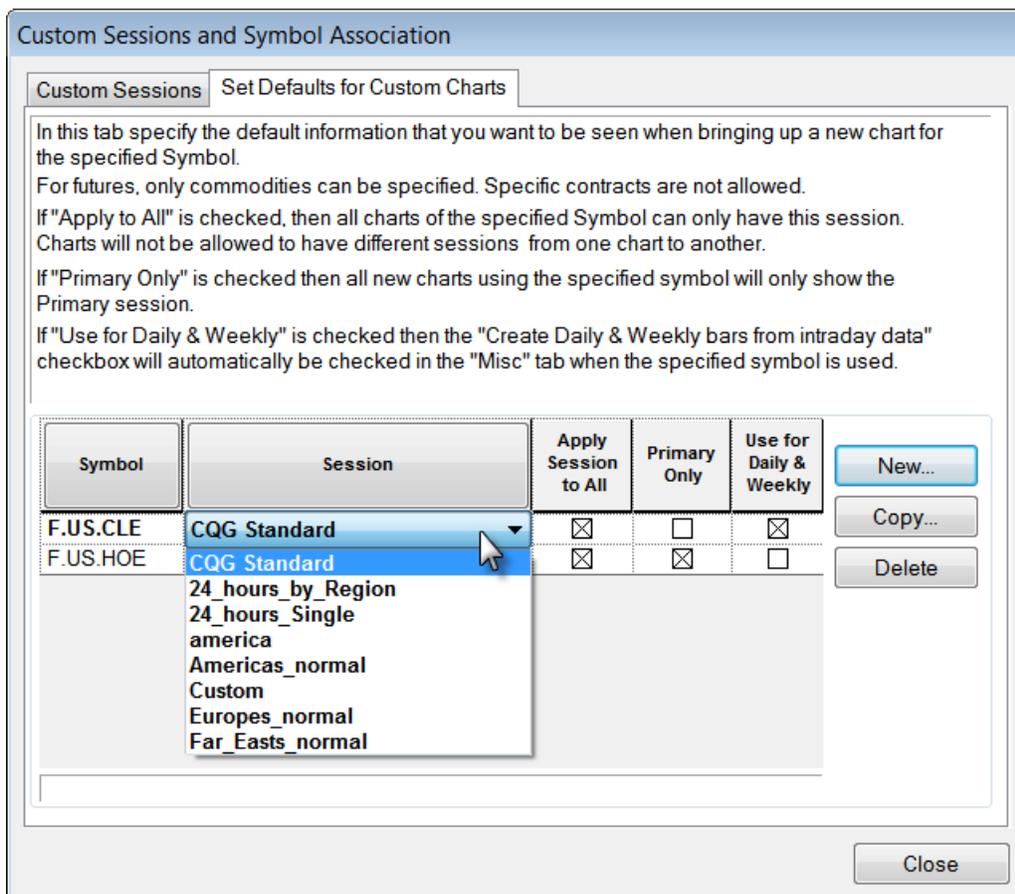
10. To change the days that the session applies to: click a day field to either remove or add the X. An X indicates that the session does apply to that day.

From the **Custom Sessions** window, click the **Set Defaults for Custom Charts tab** [to set default sessions for a symbol](#).

To set default sessions for a symbol

The options selected here apply to all charts for the selected symbol.

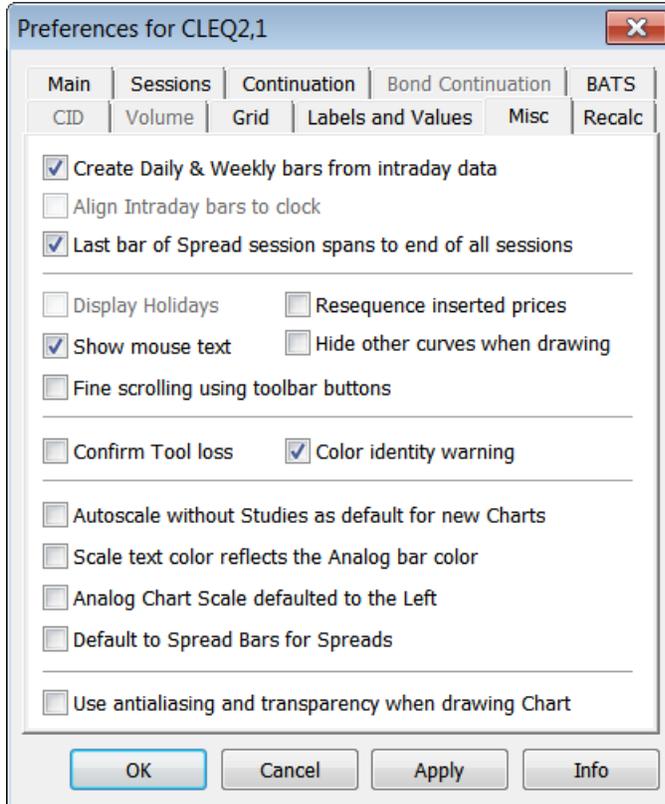
Defaults are set on the **Custom Sessions and Symbol Association** window, which is opened from the preferences window.



1. Click the **Add Symbol Default** button on the preferences window. **The Set Defaults for Custom Charts** window opens.
2. To add additional symbols, click **New**, then type the symbol.
3. Use the **Session** menu to change the session.
4. Select which of the three options you would like to add as default chart settings.

Setting Miscellaneous Preferences

Miscellaneous settings apply to various chart behaviors.



To access these settings, click **Setup**, then **Chart Preferences**, and then click the **Misc** tab.

Preference	Description
Create Daily & Weekly bars from intraday data	<p>When selected, bars are constructed based on the last trade of the day. Otherwise, bars are constructed based on the settlement price. This allows trades that are done after the close of trading to be included in the bar.</p> <p>Note: For instruments with no daily bar activity, COG uses the close of the previous bar when calculating values that depend on previous values, such as moving averages. However, on a chart that displays raw prices, periods where there is no activity are left blank.</p>

Preference	Description
Align Intraday bars to clock	<p>When selected, the bars align to the nearest half-hour point after the first bar. Therefore, when a 30-minute pork belly chart is set to align with the clock, the first bar plots at 9:10, then 9:30, 10:00 and every 30-minutes thereafter.</p> <p>You can accomplish the same goal by entering the minutes in the command line, preceded by an L. For example: PB,L30.</p> <p>Both methods produce a pork belly chart with bars at 9:10, 9:30, 10:00, 10:30, etc.</p> <p>You can unalign clock time by either clearing this check box or by entering the symbol, a comma, R, and the time frame in the command entry box. For example: PB,R60 produces a non-aligned 60-minute chart.</p> <p>Leave the alignment unchanged from the previous chart by entering the symbol, comma, time frame. For example, US,60 displays a chart that has the same alignment characteristic as the previously displayed chart, even if that chart had a different commodity symbol.</p>
Last bar of Spread session spans to end of all sessions	<p>For inter-commodity spreads, or any spread where the two contracts have different trading hours, you can select how to handle the pricing when one entity is not trading.</p> <p>Select this check box to have the spread calculated using the closing value for each subsequent bar of the later closing commodity plotted against the closing value of the contract with the earlier close.</p> <p>Unselect this check box to have the spread stop updating when the early contract closes, with all the values representing concurrent prices between the two commodities.</p>
Display holidays	<p>Daily charts only. When selected, CQG leaves a blank space on the chart to represent the holiday.</p> <p>Note: On charts where Globex is trading on a holiday, the holiday Globex session is included in the bar for the day following the holiday.</p>
Show mouse text	When selected, CQG shows tooltips.
Fine scrolling using toolbar buttons	If selected, allows you to scroll a chart horizontally by one bar at a time, using the Right/Left arrow button, or vertically by the minimum price change, using the Up/Down arrow button.

Preference	Description
Resequence inserted prices	If selected, CQG determines the placement of exchange-inserted prices, rather than placing the inserted prices at the end.
Hide other curves when drawing	When selected, any non-pointer tool studies will be hidden while new pointer tools are being added to the chart.
Confirm Tool loss	When selected, CQG warns you that Trend Tools will be lost when a new chart is displayed.
Color identity warning	If selected, the system warns you if you have chosen the same color for a chart display element as the chart's background.
Autoscale without Studies as default for new Charts	If selected, all new charts will autoscale without studies by default.
Scale text color reflects the Analog bar color	When selected, the vertical scale will be colored the same color as the Chart Analog Overlay study.
Analog Chart Scale defaulted to the left	When selected, the vertical scale for the overlaid study will appear on the left side of the chart.
Default to Spread Bars for Spreads	<p>When selected, the chart type automatically changes from bar to Spread Bar when you enter a synthetic spread. You'll notice this message on the chart:</p>  <p>The chart type reverts to the previous bar chart when you enter a non-synthetic-spread symbol. Changing the chart type manually overrides this setting.</p>
Use antialiasing and transparency when drawing chart	Select this checkbox to improve the look of charts. When it's turned on, study lines are more defined with less pixelization.

Setting Continuation Preferences

Continuation charts are generally available for futures contracts that regularly change lead months. As one month expires, the historical charts transition to the next month. This transition results in the formation of continuation charts.

To change continuation settings, click **Setup**, then **Chart Preferences**, and then click the **Continuation** tab.

Continuation type

Click the button for the continuation type you would like to use. If you do not want to use a continuation type, click the **No Continuation** check box.

No Continuation

Continuation Type

Standard - rollover at expiration

Adjusted - rollover N days prior to expiration and optionally Equalize closes

Active - rollover with trading activity and optionally Equalize closes

By Month; only use contracts for specified month

Type	Description
No Continuation	Sets the current chart to display the data for a single contract month. It plots the specified contract through expiration. The resulting single contract chart is not a continuation chart.
Standard	Displays a chart for the lead month contract through expiration and then displays the chart for the next available contract month. Example: Using the Mar, Jun, Sep, and Dec cycle as an example, if you selected Standard-rollover at expiration, the chart would display data from the Mar contract through expiration and then continue with the Jun, displaying it through the June expiration, and so on for the Sep, and Dec contracts. Colored identification bars appear at the bottom of Daily continuation charts, to indicate a transition between contracts.
Adjusted	Allows you to select the number of days prior to expiration the rollover will occur. This is accomplished by entering the desired number of days in the box under the Rollover Adjustments section. Additionally, CQG will equalize the closes of the old lead-month contract to the new lead-month contract, if the Equalize closes checkbox in the Rollover Adjustments section is selected. CQG does this by adding the difference between the old lead month and the new lead month to the historical data. Continuation charts using the Adjusted preference show the word Adjusted in the title bar. Example: If N = 5 (i.e. 5 days prior to expiration) and SPZ expired on

Type	Description
	<p>12/18, then 5 trading days prior to expiration, or 12/11, the following adjustment would occur:</p> <p>Close SPZ on 12/11 = 954.40 Close SPH on 12/11 = 965.30 Amount of Adjustment = 965.30 – 954.40 = 10.90 This figure (10.90) is added to the older contract data to arrive at the values displayed on the continuation chart for 12/11.</p> <p>Note: Charts using adjusted continuation display the word “Adjusted” in their title bars.</p>
Active	<p>This option sets the chart to display data for the most active contract month. Once the transition occurs between the near-term month and the next month, the further out month remains the active contract until a contract other than that becomes more active. Colored horizontal bars appear at the bottom of the continuation charts, directly above the time scale, to indicate a transition to a new contract. Additionally, you can choose to equalize the closes by selecting Equalize Closes in the Rollover Adjustments section. This equalization is done by adding the difference between the old lead month and the new lead month to the historical data.</p> <p>Determining the Most Active Contract:</p> <p>The most active contract is determined by using tick volume (both daily and tick volume) or by using the near-term month, depending on the algorithm set by CQG.</p> <p>More specifically, for the "Fast" algorithm, the tick count must be 50% larger before the most active contract is changed. Most financial contracts use the fast algorithm.</p> <p>For the "Slow" algorithm, both the volume and the tick count must be at least 10% greater in the next month than the currently most active month for the new contract to take over as the most active. Generally, the non-financial contracts, especially the grains, use the slow algorithm since the new crop may see significant activity, even when it is not the front month. Additionally, short-term interest rate contracts use the slow algorithm.</p> <p>The near term month is used only for inactive contracts such as the EuroYen.</p> <p>Note: Generally, rollovers occur at the end of the regular trading session. However, automatic rollovers can be over-ridden the following morning when conditions warrant.</p> <p>Equalizing the closes:</p> <p>Equalizing the closes makes the expiration comparisons more relevant. The equalization is applied on the day of the rollover (determined by the switch in the most active contract) according the following example:</p> <p>Example: On 12/11/09: SPZ = 954.40 SPH = 965.30 Amount of Adjustment = 965.30 – 954.40 = 10.90</p>

Type	Description
	<p>This figure (10.90) is added to the older contract to arrive at the value displayed on the continuation chart for 12/11/09.</p> <p>To equalize the closes, the Equalize closes checkbox at the bottom of the window must be selected.</p> <p>Note: The Equalize Closes setting defaults to the last-used setting (either On or Off) for Active or Adjusted Continuation charts. If the bar is equalized, the title bar includes "Equalized" in the caption.</p>
By Month	Sets the chart to display only the data for the designated contract month.

Rollover Adjustments

Rollover Adjustments

Roll over trading days before expiration

Equalize closes

Use the arrows to adjust the number of days before expiration you want contracts to be rolled over.

Select the check box to use equalized close.

Setting Bond Continuation Preferences

The Bond Continuation tab allows you to display continuation charts for cash bonds.

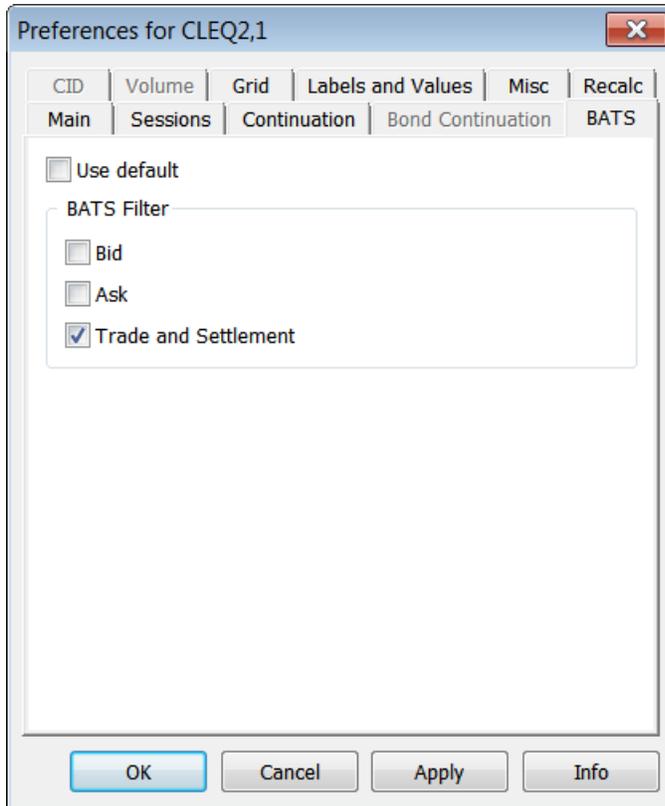
For example, in August 2010 when the US government issued new 10-year bonds, the continuation chart for a 10-year government bond switched from displaying the bond that matures in February 2020 to one that matures in August 2020. Likewise, in February 2011, the chart displayed the bond that matures in February 2021.

Bond Continuation charts are updated manually by CQG.

Type	Description
No Continuation	Sets the current chart to display the data for a single bond issue. It plots the specified issue to maturity. The resulting chart is not a continuation chart.
Active Continuation – rollover with trading activity and optionally equalize opens	Sets the chart to display data for the benchmark. Once the transition occurs between the outgoing benchmark and the new benchmark, the new benchmark remains the active issue until a new benchmark is listed. Colored horizontal bars appear at the bottom of the continuation charts, directly above the time scale, to indicate the time period that issue was the benchmark. Additionally, you have the option to equalize the opens. CQG equalizes opens by adding to the new benchmark the difference between the old benchmark and the new benchmark.
Equalize opens	<p>Makes the expiration comparisons more relevant. The equalization is applied on the day of the rollover (determined by the switch in the most active contract) according to the following example:</p> <p>Example:</p> <p>CUS on 12/11/97 = 954.40 SPH on 12/11/97 = 965.30 Amount of Adjustment = 965.30 – 954.40 = 10.90 This figure (10.90) is added to the older contract to arrive at the value displayed on the continuation chart for 12/11/97.</p>

Setting BATS Preferences

BATS settings apply to price elements on charts.



To access these settings, click **Setup**, then **Chart Preferences**, and then click the **BATS** tab.

Click the **Use default** check box to use the system-selected BATS filter or select **Bid**, **Ask**, **Trade and Settlement**, or a combination. In both cases, the filter in use is indicated by a check mark.

This setting uses tick data, therefore, changes are not automatically applied to daily or weekly charts.

Setting CID Preferences

CID settings apply to data sources.

To clear the list, click the **None** button. To remove an individual contributor, clear the check box.

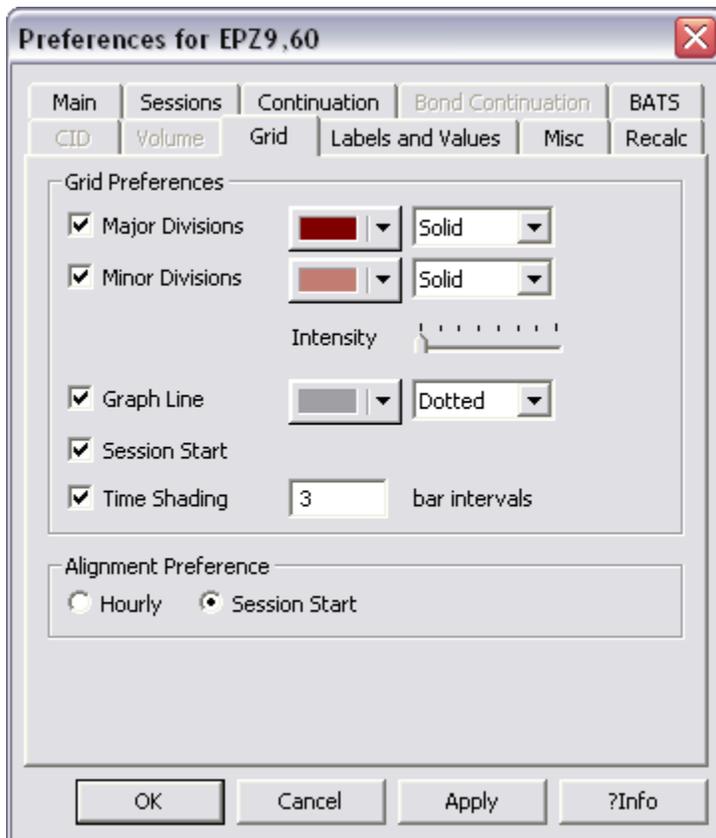
To select the entire list, click the **All** button. To add an individual contributor, select the check box.

The **CID** tab is available for intraday charts only and is not available for point and figure charts.

To access these settings, click **Setup**, then **Chart Preferences**, and then click the **CID** tab.

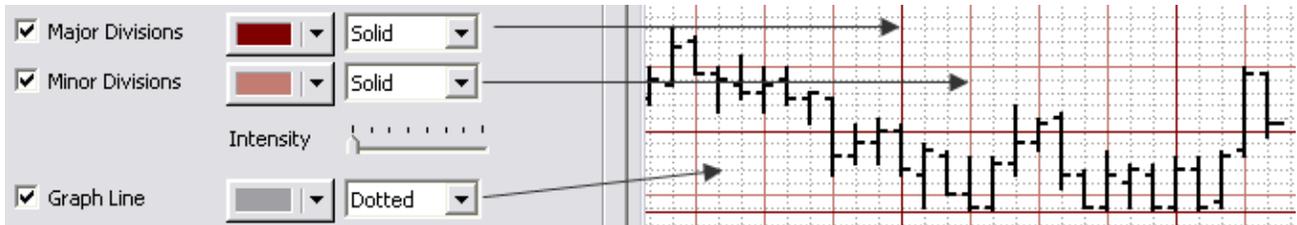
Setting Grid Preferences

Grid settings apply to the lines and shading on charts. To access these settings, click **Setup**, then **Chart Preferences**, and then click the **Grid** tab.



Select Grid Display Settings

Choose to display major division, minor division, and graph lines and whether those lines should be solid or dotted.



The **Intensity** slider allows you to brighten or dim the grid lines.

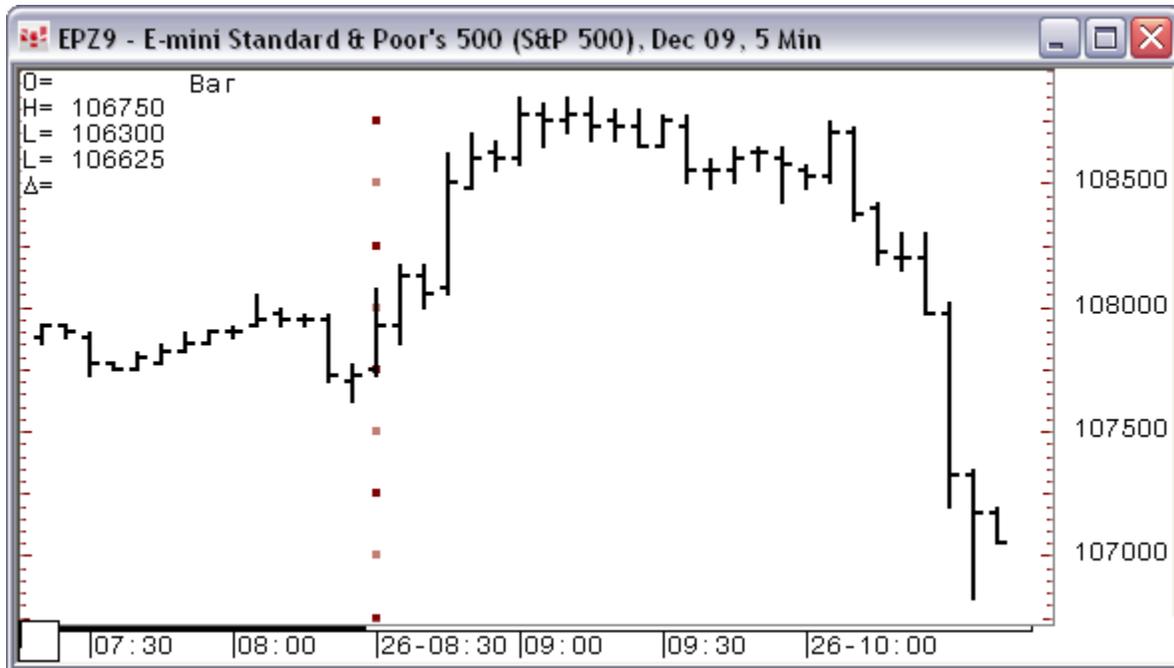
Major and minor divisions are calculated as:

Chart Interval	Major Division	Minor Division	Graph Line
1-Minute	30 Minutes	15 Minutes	Vert. Line 1/min
5-Minute	Daily	2 hours	Vert. Line 1/5 mins
30-Minute	Weekly	Places the study on top of another display. If the box is not selected, the study will be based on the chart or study indicated in the Applied To box, but it will be in a separate window.	Vert. Line 1/30 mins
60-Minute	Weekly	Daily	Vert. Line 1/60 mins
Daily	Monthly	Weekly	1/day
Weekly	Yearly	Monthly	1/week
Monthly	Every 4 years		1/month
Quarterly	Every 4 years	Every 2 years	1/quarter
Semi-Annual		Every 2 years	2/yr
Annual		Every 2 years	1/yr

The frequency of the horizontal lines depends on the scale of the vertical axis.

Display Session Start

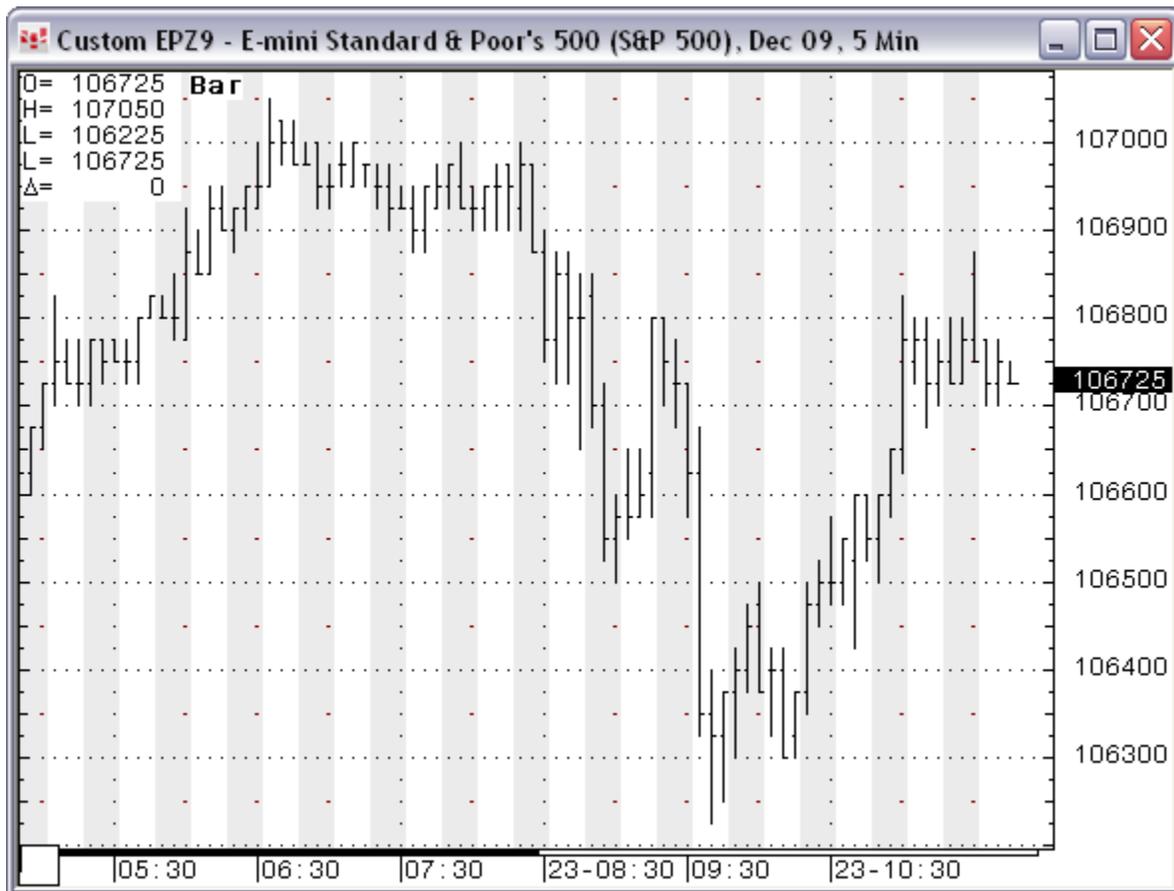
Click the **Session Start** check box to include a vertical line at the session start. This line picks up the colors and intensity from the major and minor divisions settings.



Set Time Shading

Time Shading bar intervals

Select the **Time Shading** check box to shade increments of time on a chart, like this:



Enter the increment in the **bar intervals** field.

This shading is off by default.

Choose Alignment

Alignment Preference

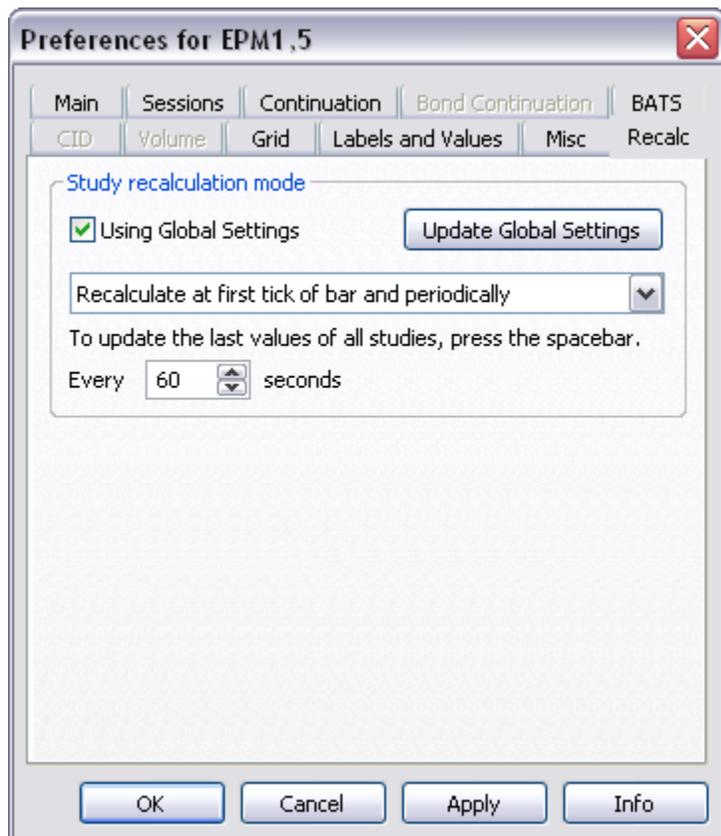
Hourly Session Start

Choose whether the gridlines are geared to clock hours or to the session start. This feature is particularly relevant to contracts such as the Japanese Yen or any contract where the trading session does not start on the hour.

Setting Recalc Preferences

Recalculation settings apply to the calculation mode to be used with Trading System, Condition, and Study Alerts; Custom Quote Boards; Market Scans; and Signal Evaluators as well as charts.

To access these settings, click **Setup**, then **Chart Preferences**, and then click the **Recalc** tab.



Using Global Settings

The recalculation frequency setting can be used globally or for an individual chart.

To use the recalculation frequency as a global setting, i.e. for all applications that rely on recalculation, click the **Update Global Settings** button.

To use the recalculation frequency for an individual chart (if it differs from the global setting), clear the **Using Global Settings** button.

For example:

Suppose the global setting is to recalculate on every bar.

If **Using Global Settings** is selected for a chart, then the recalculation frequency is to recalculate on every bar.

If I change the recalculation frequency to every tick and leave the **Using Global Settings** check box selected, then the system asks to confirm the change to global settings.

If you want to change the recalculation frequency to every tick for this cart and not as a change to global settings, then clear the **Using Global Settings** button.

Recalculation

Since updating study bars can use a significant amount of processor capacity, you may want to modify how often study bars are updated.

Choices include:

Recalculate on every tick: Updates on every tick. This frequency makes the most demands on system resources and may produce values and signals that are meaningless until the bar is completed.

Recalculate at end of bar (default): Updates when the current bar is completed. This frequency makes the least demands on system resources.

Recalculate at first tick of bar and periodically: Updates on the first tick of every bar and every number of seconds, which you set.

Note that you can manually update the bar by pressing the space bar. This is especially helpful for bars that are displayed before they are finished (i.e. current bar).

Setting Volume Preferences

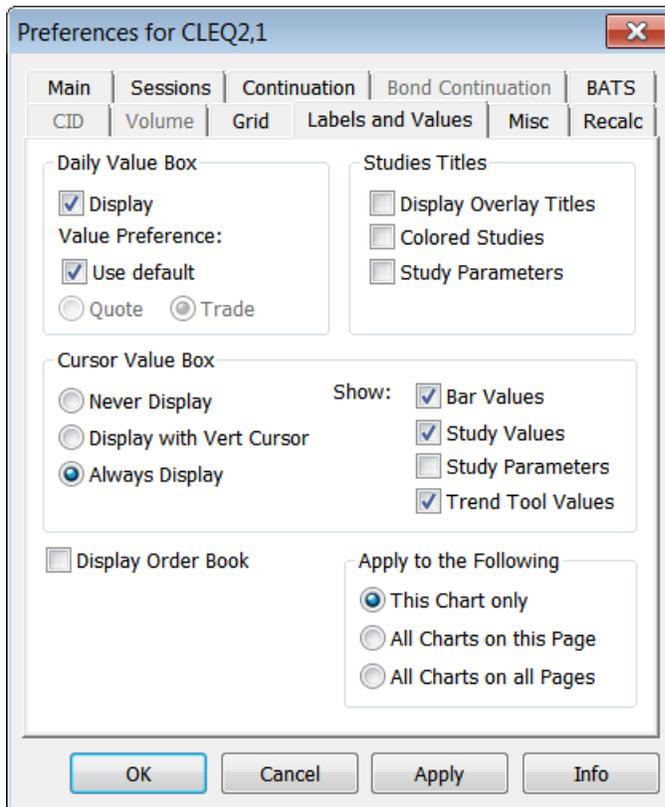
Volume settings apply to the volume ranges used on charts. To access these settings, click **Setup**, then **Chart Preferences**, and then click the **Volume** tab.

You can elect to use volume as the criteria for displaying bar data. You can elect to display bars reflecting a range of volumes or bars with volume less than or greater than a user-specified amount.

1. Click the **from** down arrow button. This displays a menu allowing you to select a volume range. Choices include:
 - From:** Allows you to select a range of volumes for displaying bars.
 - Larger than:** Allows you to select volume values greater than a designated amount for displaying bars.
 - Less than:** Allows you to select volume values less than a designated amount for displaying bars.
2. Click the **Remove** button to remove one of the bar volume criteria. Click the **Remove All** button to remove all the volume range criteria.

Setting Labels and Values Preferences

These preferences are used to change the display of the Daily Value Box, study titles, the Cursor Value Box, and the Order Book.



To access these settings, click **Setup**, then **Chart Preferences**, and then click the **Labels and Values** tab.

Daily Value Box

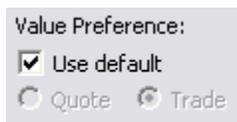


To display the Daily Value Box, click the **Display** check box in the Daily Value Box section of preferences.

The Daily Value Box in the upper-left corner of the chart displays the open, high, low, last trade, close, and net change from the prior close.

```
O= 9866 AMA(10, 2, 30)
H= 9890
L= 9719
L= 9731A
Δ= .. -138
```

Using the [Studies Titles](#) parameter, you can choose to display the study name or parameters on the Daily Value Box.



This setting allows you to control how the last and net change values are displayed on the chart.

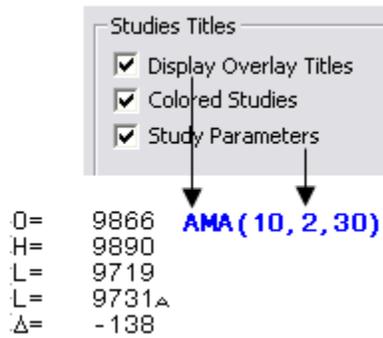
If **Use default** is selected, then the system uses your preferences, including a BATS filter. If preferences aren't set, then it uses the CQG default. If the BATS filter is using bids or asks, then bid and ask values are used in the bars. The last and net change values are based on the last quote (trade, bid, or ask) received. Otherwise, they are based on the last trade or settlement.

If the **Quote** button is selected, then the last and net change values are based on the last quote (trade, bid, or ask) received.

If the **Trade** button is selected, then last and net change values are based on the last trade or settlement received.

Study Titles

Study titles and parameters can be displayed on the [Daily Value Box](#).

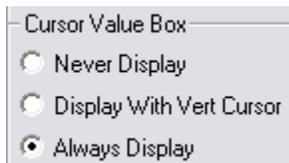


Click **Display Overlay Titles** to include the study name in the box.

Click **Colored Studies** to change the study name and parameters from black.

Click **Study Parameters** to include study parameters in the box.

Cursor Value Box

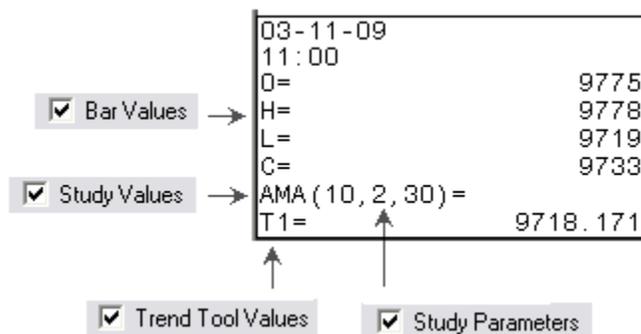


- Click **Never Display** to hide the [Cursor Value Box](#).
- Click **Display with Vert Cursor** to show the Cursor Value Box only in conjunction with a vertical cursor.
- Click **Always Display** to show the Cursor Value Box at all times.

You can add study and trend data to the Cursor Value Box using the Show parameter.

Bar, study, and trend data can be displayed on the [Cursor Value Box](#).

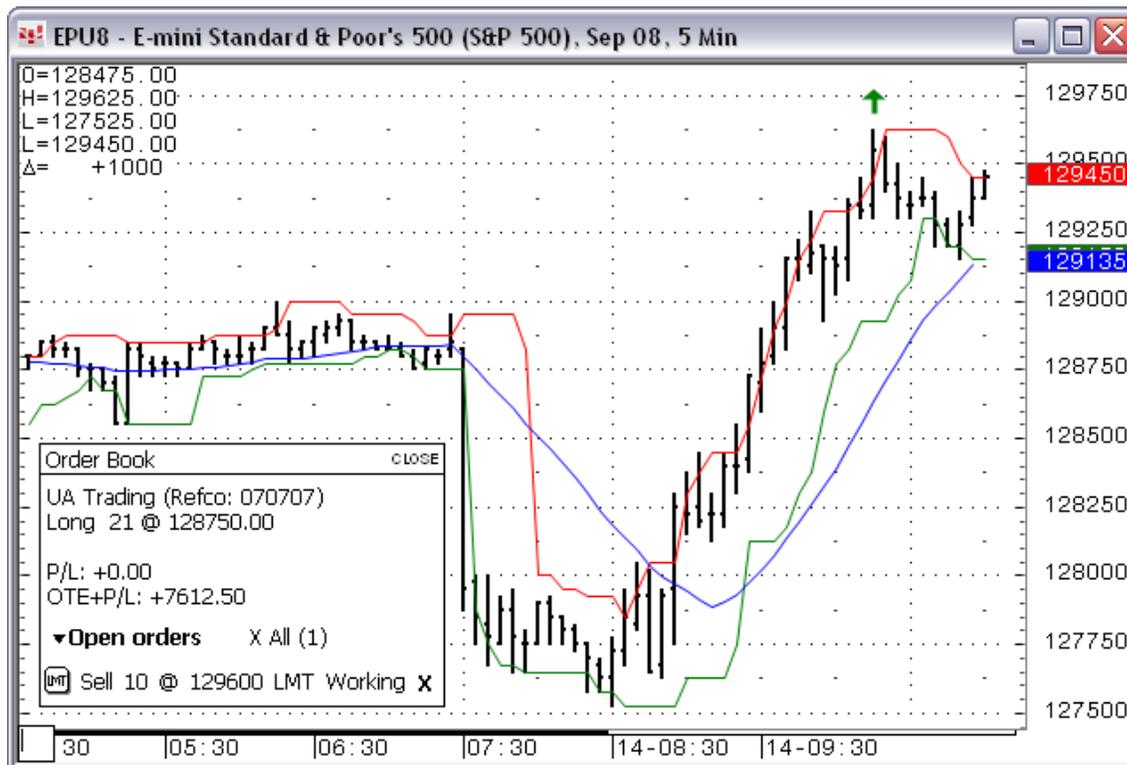
- Click **Bar Values** to include the open, high, low, and close for the bar.
- Click **Study Values** to include a study in the box.
- Click **Trend Tool Values** to include the trend value in the box.
- Click **Study Parameters** to include study parameters in the box.



Display the Order Book

Display Order Book

The [Order Book](#) can be displayed on the chart, like this:



Click the **Display Order Book** check box in the Trading section to include the Order Book on the chart.

Setting Chart, Study, and Pointer Tool Parameters

There are several ways to access chart, study, and pointer tool parameters:

- **Studies** button > **Basic Studies** tab > **Setup** button
- Right-click the chart, study, or tool and then click **Modify** study
- Right-click the chart and then click **Modify All Studies**

Parameters that contain arrows (>>>) indicate that a secondary parameter window opens when that parameter is selected. To return to the primary window, use the back button on the secondary window.

Common Parameters

Some charts, studies, and pointer tools share common parameters:

- Info
- Display
- MarkIt
- OB/OS

The **Info** button is not an actual parameter. Clicking this button opens the online help for the study.

Display Parameter

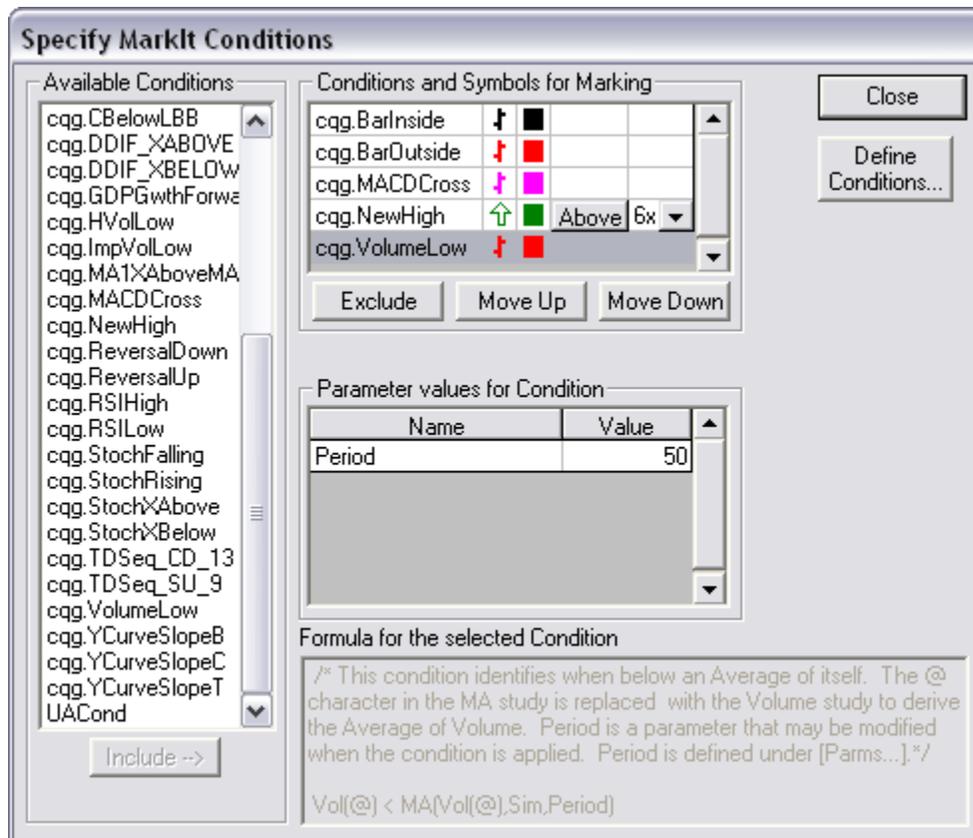
Please note that display parameters vary between studies.

Display parameters typically control how the study looks on the chart. They include:

- **Color:** Select a color for the line.
- **Weight:** Choose how thick you want the study line.
- **Line Style/Display:** Choose a line style, such as line or histogram.
- **Shape:** Choose the symbol used to mark a trade on a price bar (e.g. Order Display study).
- **Display/Enable:** Click this check box to display the line.
- **Share Scale:** Determines whether sharing of the vertical scales between studies is accepted.
 - Auto** = CQG decides if sharing the vertical scale is feasible;
 - On** = The vertical scales will be shared, regardless of which studies are displayed;
 - Off** = The vertical scale will not be shared between studies.

MarkIt Parameter

The MarkIt parameter allows you to add conditions to studies. Clicking the **MarkIt** cell opens this window:



See also: [Working with Conditions and Alerts on Charts](#)

OB/OS Parameter

OB/OS parameters apply to overbought/oversold indicators:

- **Color:** Select a color for the line.
- **Weight:** Choose how thick you want the study line.
- **Type:** Choose **Fixed** or **Dynamic**.
- **Std Dev:** The multiplier of the Standard Deviation used to derive high and low.
- **Lookback:** The number of bars the study should compare to the current bar.
- **Level:** Selects the percentage value of average OB/OS used to calculate the predictor OB/OS levels.
- **Display:** Click this check box to display the line.
- **Style:** Choose a line style.

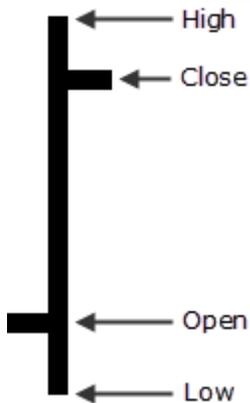
Chart Types

CQG offers over a dozen chart types, including our own TFlow. If you are not familiar with the singular opportunity that TFlow provides, read more about it on [CQG's website](#).

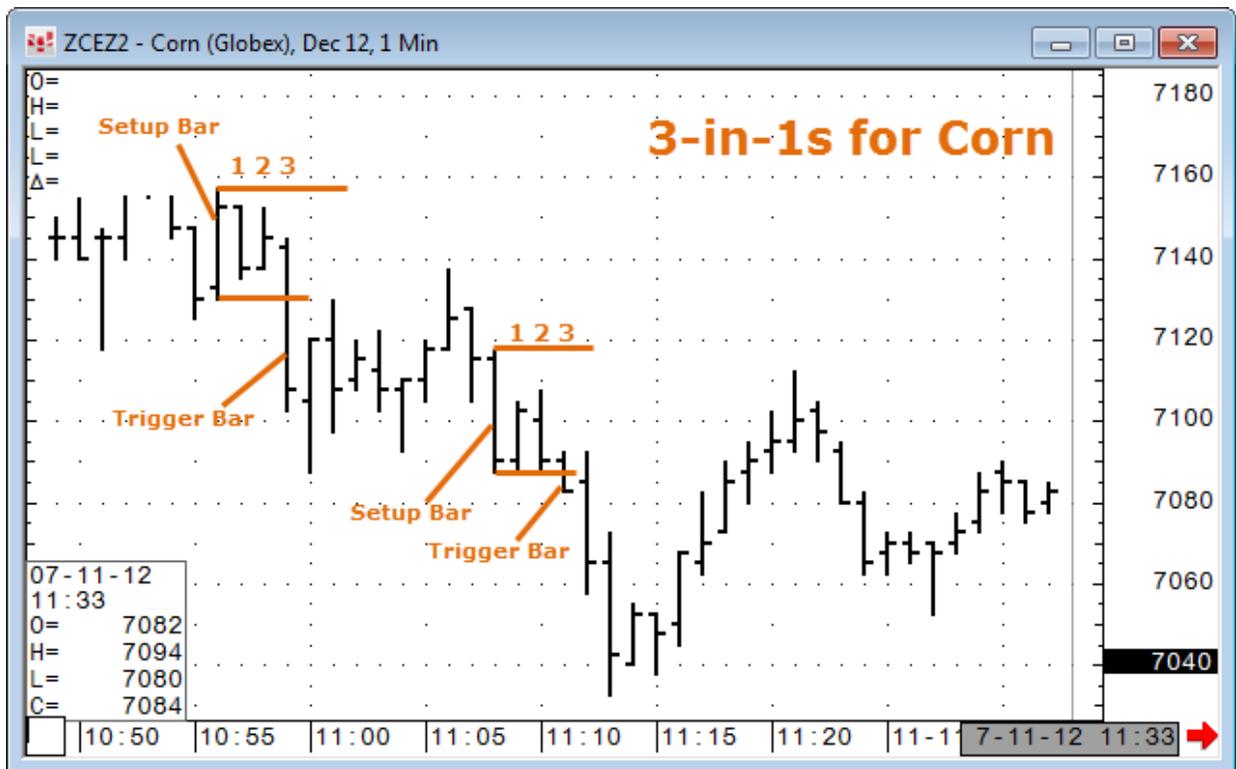
- [Bar](#)
- [Candlestick](#)
- [Constant Volume Bar](#)
- Equalize Sessions
- [Fill Gap](#)
- [Line](#)
- [Market Profile](#)
- [No Gap](#)
- [Percent Bar](#)
- [Point and Figure](#)
- [Spread Bar](#)
- [Tick](#)
- [Tick Chart Smoothing](#)
- [TFlow](#)
- [Time-Based TFlow](#)
- Yield

Bar (Bar)

Bar charts are constructed from the open, high, low, and close prices that occurred during the time interval of the bar. The opening price for the time interval appears as a dash on the left side of the bar. The highest and lowest prices during the specified interval appear on the top and bottom of the bar respectively, and the final price for the interval appears as a dash on the right side of the bar.



Applying bar patterns to expose potential trends is one way of using bar charts. In this example, we use 3-in-1s on a corn contract.



Bar Parameters

- [Color](#)
- [MarkIt](#)

CandleStick (CndI)

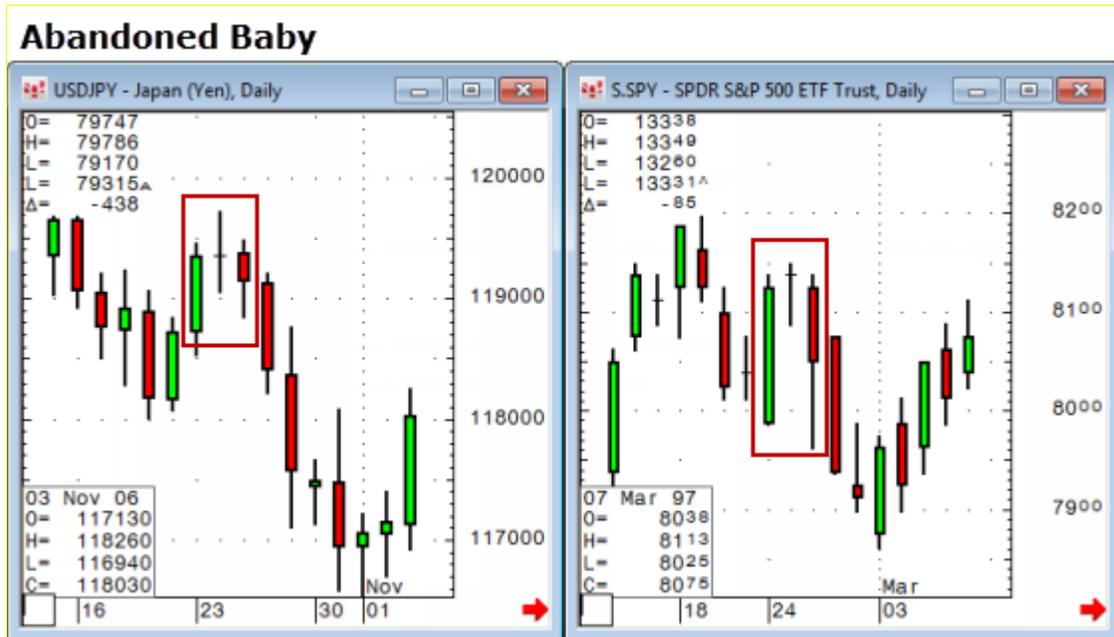


Candlestick charts represent an alternate way of displaying bar charts. In addition to displaying chart data using candlesticks, CQG offers you the ability to display candlestick formations.

These charts focus on the relationship between the opening price and the closing price and can help identify trends and daily volatility.

They can be used in various markets with various time intervals and various technical analysis methodologies.

This image shows both bearish and bullish reversal patterns in candlestick chart for different markets:



In the FX market, the Abandoned Baby pattern is similar to the Bearish Evening Doji Star pattern, while out of the FX market, the Abandoned Babies require gaps between the closing and opening prices of the second and third candles.

These formations are more fully described in Steve Nison's book, [Japanese Candlestick Charting Techniques](#).

Candlesticks Parameters

- [Color](#)
- [MarkIt](#)

Constant Volume Bar (CVB)

CVB bars are built based on volume - tick or exchange volume when available. Time is not a factor.

Each bar in a Constant Volume Bar chart contains a specified volume level. This volume level is reached by accumulating the volume of each of the underlying bars. When the volume level is reached, the next Constant Volume Bar begins to accumulate volume from the underlying bars.

When you have a custom BATS filter on the chart to process best bid/ask quotes, each quote affects the volume output in these ways:

- Total tick volume is increased.
- Bid/Ask tick volume, filtered tick volume, filtered bid/ask tick volume are not increased.
- Trader volume, filtered trade volume, bid/ask trade volume, and filtered bid/ask trade volume are not increased.

You can apply large trade detection to volume using the **Aggressive** parameter.

Suppose these limit orders are working at a single price:

10 lots, 1 lot, 2 lots, 1 lot, 10 lots, 100 lots

An order is placed for 1 lot and fills against the first working order, making the quantities:

9 (partially filled), 1, 2, 1, 10, 100

Next, an order is placed for 3 lots, so the order sizes become:

6, 1, 2, 1, 10, 100

Then, an order is placed for 100 lots, so the order sizes become:

0 (filled), 0, 0, 0, 0, 20

So, the fill amounts were:

1, 3, 6, 1, 2, 1, 10, 80

Constant volume bars indicate the number of lots (104) or the number of ticks (8) depending on the value selected in the **Type** parameter.

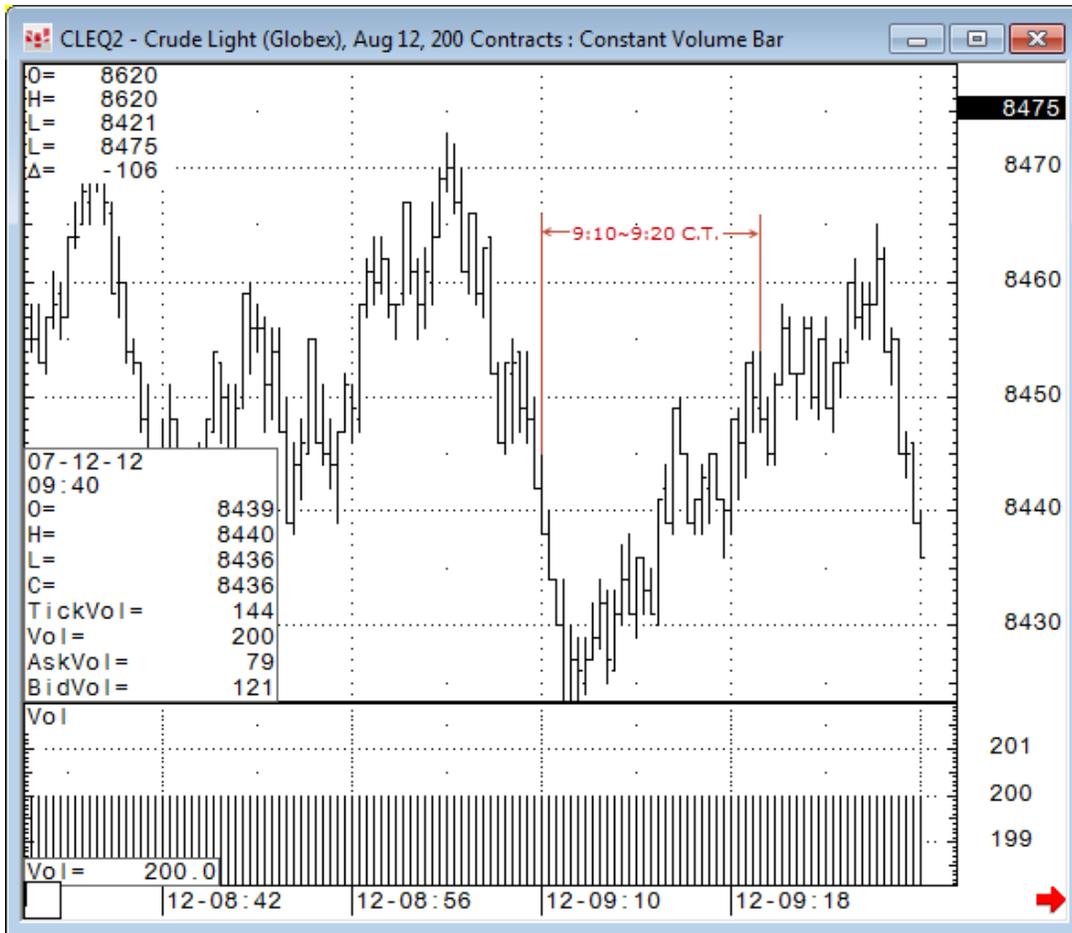
Missing from this information is any indication that an order for 100 lots was triggered.

Both lots and ticks provide information about the passive side of trading. With the aggressive parameter turned on, the number of orders (3) is exposed, revealing the role of aggressors in the current market.

One application of these charts is to expose more information about high spike in volume. In this image, we notice a spike in volume at 9:10-9:20 CT, but the specific candlestick does not provide much information before the closing price.



A constant volume chart may be helpful in this scenario. In this image, a constant volume of 200 is used to better understand the trend hidden in the time-based candlestick chart.



Please note that CVB analysis is not the same as Equal Volume Bar analysis.

Constant Volume Bar analysis is not available for spreads or for contracts being received on a delayed basis.

Constant Volume Bars Parameters

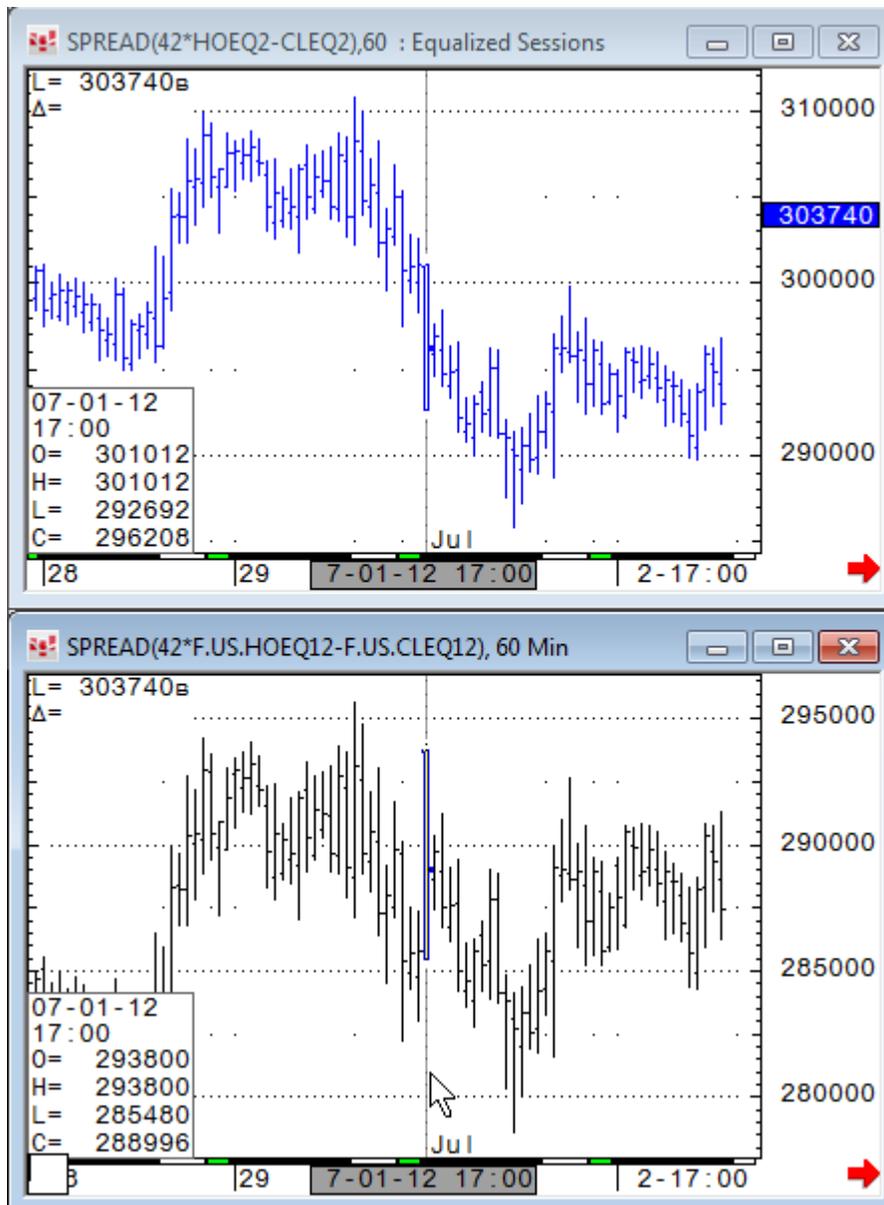
- [Display](#)
- **Volume Level:** Selects the volume covered by each bar.
- **Type:** Select **Exchange or Tick** or **Tick Only**. For Exchange or Tick, exchange volume is used if it's available, otherwise ticks are used. Tick volumes are the number of price changes that occurred during a specified time period.
- **Flat Ticks:** If checked, 0-plus and 0-minus ticks will be used when building the bars.
- **Aggressive:** If checked, large trade detection is applied to quotes. Consecutive trades are considered one large trade if all of the following conditions are met:
 - They all happened on the same side.
 - There were no intervening opposite side trades among them (trade that is split between bid and ask is not considered intervening).
 - They happened within 50 milliseconds of each other (TFlow only).
 - No BBA updates occurred between trades.

If consequent trades are combined into one large trade, they are considered one tick. If trades inside one large trade were executed at different prices, then all prices are used to construct the new OHLC of the CVB bar. Applies only to tick volume. Must be used with flat ticks. Requires enablement.

Equalize Sessions (ES)

Equalize sessions charts adjust the values of all the previous sessions to reflect the opening of the current session. For example, if the opening for the current bar is up $\frac{1}{2}$ from the close of the previous bar, then all the values for the previous bar are adjusted up $\frac{1}{2}$. Likewise, this adjustment will reverberate back to all the previous bars, which are adjusted upward by $\frac{1}{2}$.

These charts can help traders find events with large gaps between the last day closing price and the opening price, as in this example:



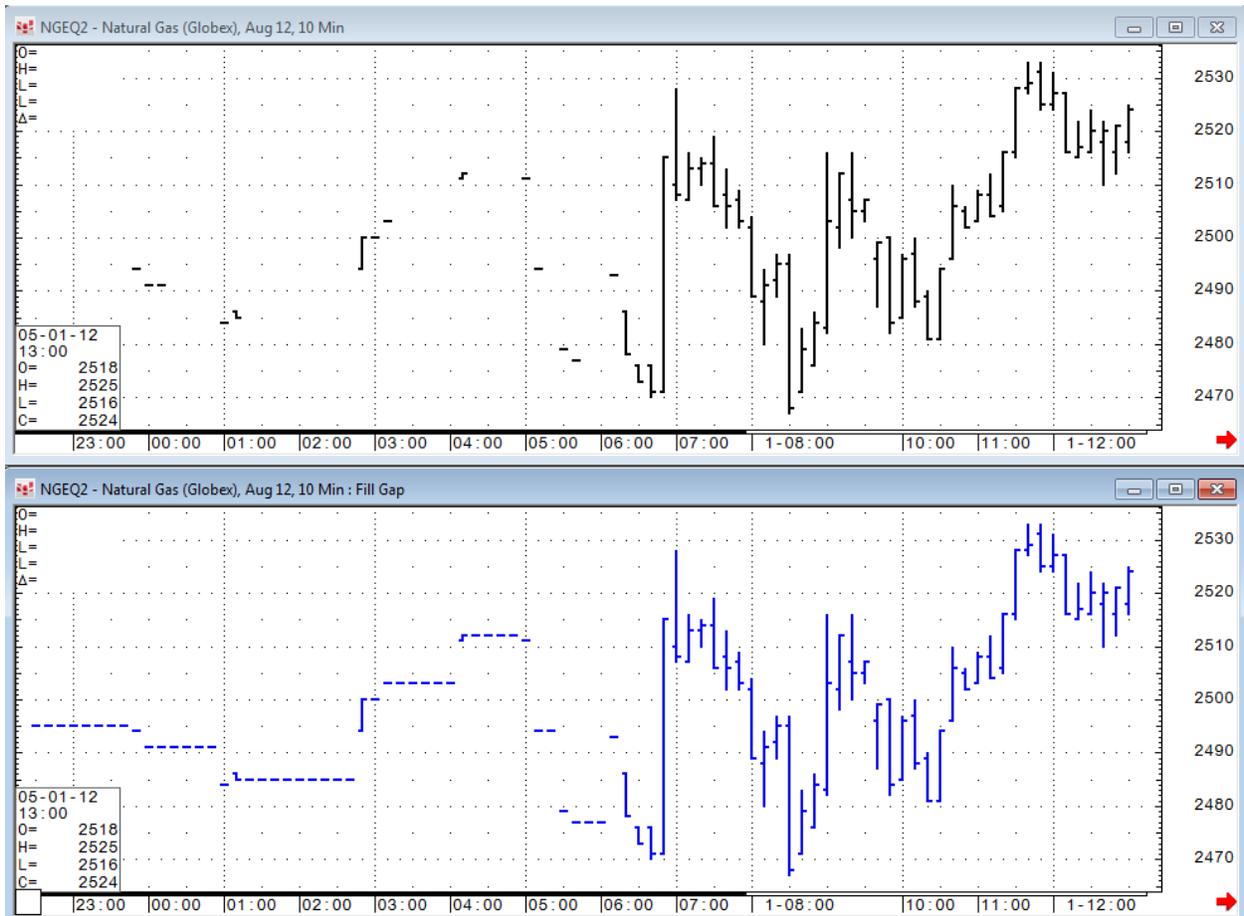
Equalize Sessions Parameters

- [Color, Weight, Display](#)
- [MarkIt](#)

Fill Gap (FG)

A Fill Gap chart fills in the time slots that have no activity using the previous bar's close as the open, high, low, and close for the bar with no activity.

This chart can be helpful for calculations relying on continuous graphing or data. Gaps in activity are filled with the last closing price.



Fill Gap Parameters

- [Color, Weight, Display](#)
- [MarkIt](#)

Line (Line)

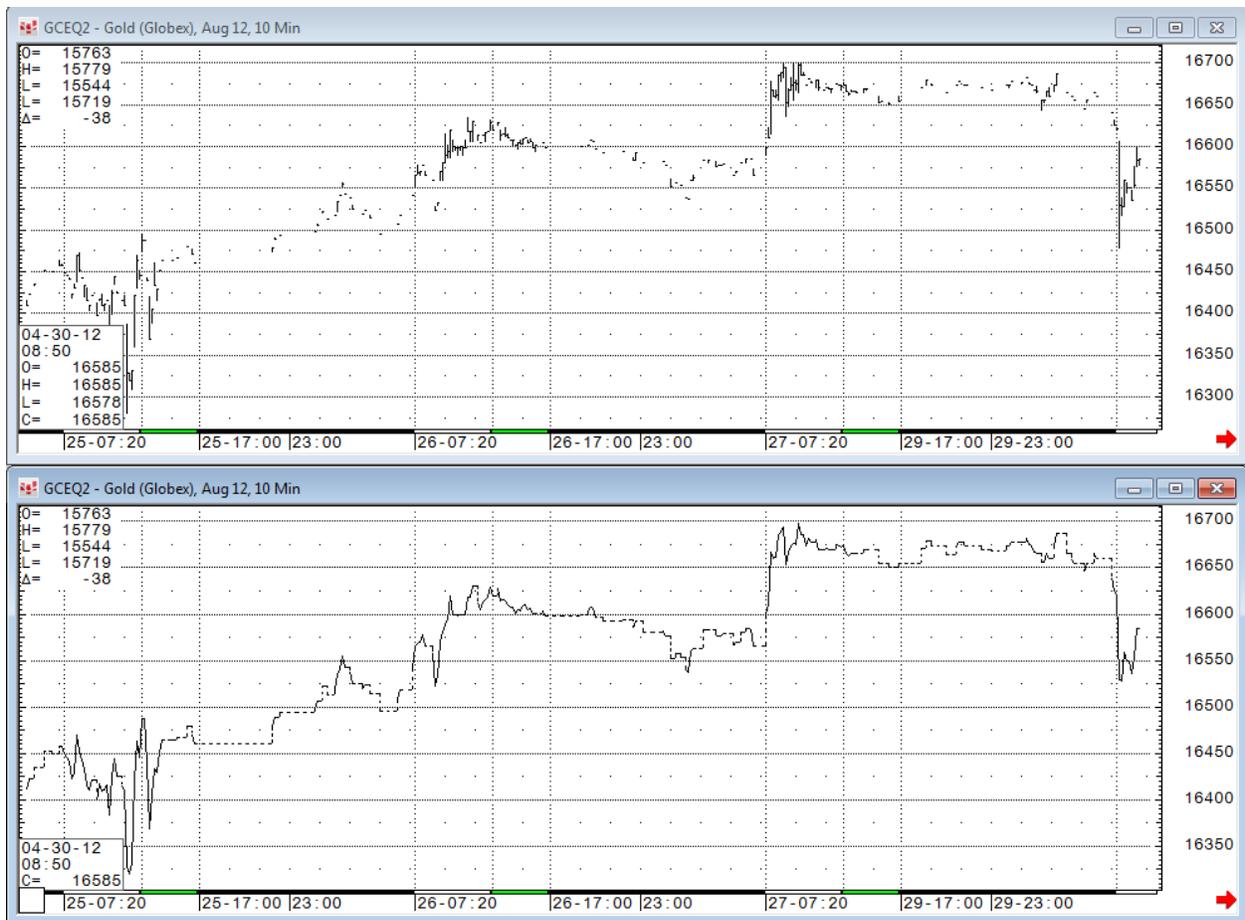
Connects successive values on a chart. The **Price** parameter setting determines which values are connected.

This chart type may appeal to those who want to use the change in a particular price, for example, close, as a determinant.

Consider the differences between a candlestick chart and a line chart.



Line charts can also be used for markets with little activity. Gaps are filled in with a dotted line for a smoother display.



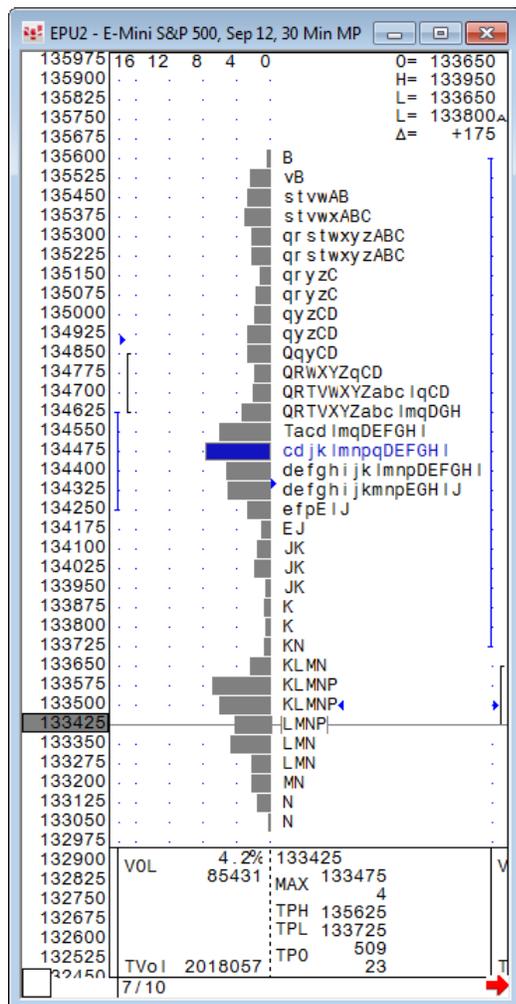
Line Parameters

- [Color, Weight, Display](#)
- [MarkIt](#)
- Price

Market Profile (MP)

Market Profile charts display price distributions over a period of time. The Market Profile feature includes Market Profile [distributions](#) and **CQG** [volume](#) profiles.

Please note that your chart may look considerably different depending on the display parameters you have chosen.



You can work with Market Profile charts in many of the same ways you work with other charts. The only study that can be added to the Market Profile is the Order Display study.

Most of the features common to all CQG charts are available for Market Profile also, such as adding conditions to the chart.

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See also: [Working with Order Study Values on Market Profile](#)

Market Profile Components

COG has created a simple, yet elegant instance of Market Profile charts, which include TPO distribution, volume bars, and helpful markers and indicators. COG standard chart elements, such as the cursor value box and [horizontal lines](#), have been adapted for the Market Profile chart.

Time Price Opportunity (TPO) Distribution

```

134325 | .
134250 | . w
134175 | . w
134100 | . vw
134025 | . vwx
133950 | . qr vwxCN
133875 | . nqr st vxy ZBCGHKN
133800 | . mnqr stxyz ABCGH I JKN
133725 | . djklm nq tyz ABCDEFGH I JKN
133650 | . Qcde i jk lmpqz ABCDEFGH I JKNP
133575 | . QRTYbcdeghi jk lmpq ABCDEFG I JKNP
133500 | . QRTVWXYbcefghmp ABDEF I JKNP
133425 | . QTVWXYZabefm BDEF IKN
133350 | . ZabfBDEKMN
133275 | . ZDEKMN
133200 | . KLMN
133125 | . KLMN
133050 | . KLMN
132975 | . KLM
132900 | . KL
132825 | . KL
132750 | . L
132675 | .
    
```

Market Profile distributions are constructed of TPOs (Time Price Opportunities). Each TPO letter identifies a time when the market traded at the price indicated on the vertical axis. Please note that COG line time (United States Central Standard Time) is used.

TPO letter values change depending on whether the chart is 30-min, daily, or monthly.

30-Min

TPO	Time	TPO	US CST Time
A	800	a	2000
B	830	b	2030
C	900	c	2100
D	930	d	2130
E	1000	e	2200
F	1030	f	2230
G	1100	g	2300
H	1130	h	2330
I	1200	i	2400
J	1230	j	30

TPO	Time	TPO	US CST Time
K	1300	k	100
L	1330	l	130
M	1400	m	200
N	1430	n	230
P	1500	p	300
Q	1530	q	330
R	1600	r	400
S	1630	s	430
T	1700	t	500
V	1730	v	530
W	1800	w	600
X	1830	x	630
Y	1900	y	700
Z	1930	z	730

When a contract opens during a particular TPO, the first thirty minutes of trading for that contract are plotted using the letter of the TPO that was in progress at the opening. Subsequent trades are plotted using the letter of the TPO in progress at the beginning of the corresponding 30-minute interval. For example, if the opening time of the day session for a symbol is 7:20 a.m., the y TPO applies. The second thirty minutes of trading, which starts at 7:50 a.m., corresponds to the z TPO.

For time periods shorter than 30-minutes, a TPO applies to the same 30-minute period. For example, a 5-minute Market Profile would contain six 5-minute A TPOs.

Daily

TPO	Date	TPO	Date
A	1	R	17
B	2	S	18
C	3	T	19
D	4	V	20
E	5	W	21
F	6	X	22
G	7	Y	23

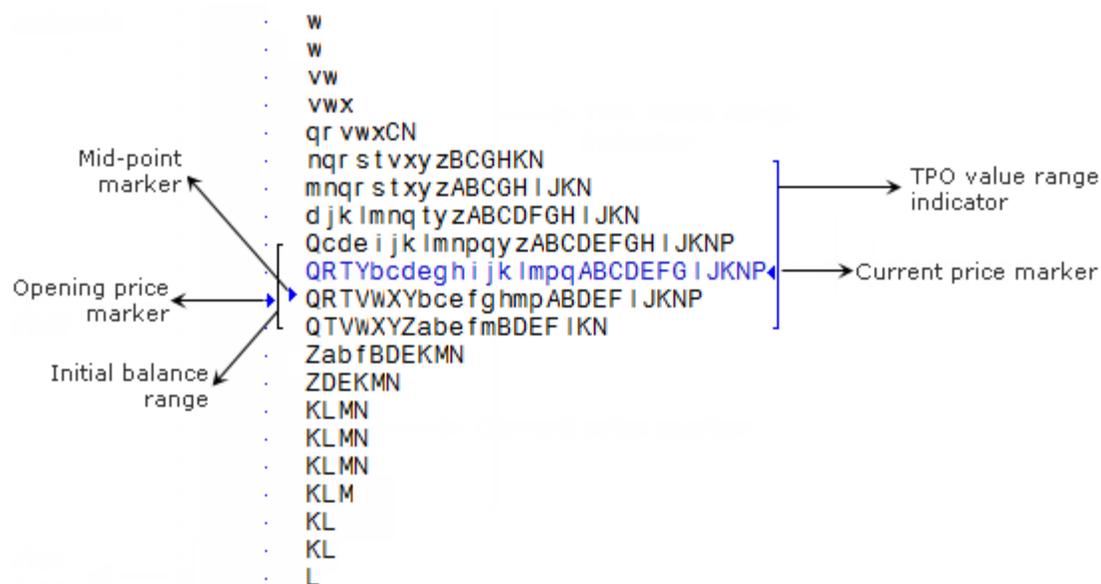
TPO	Date	TPO	Date
H	8	Z	24
I	9	a	25
J	10	b	26
K	11	c	27
L	12	d	28
M	13	e	29
N	14	f	30
P	15	g	31
Q	16		

Monthly

TPO	Month	TPO	Month
A	January	G	July
B	February	H	August
C	March	I	September
D	April	J	October
E	May	K	November
F	June	L	December

Both upper and lower case u and o are not used.

Markers and Indicators



Initial balance range: Identifies the first two trading periods of a distribution. Change the number of trading periods identified by changing the **IBR Period** parameter.

Opening price marker: Identifies the opening price of the trading session displayed.

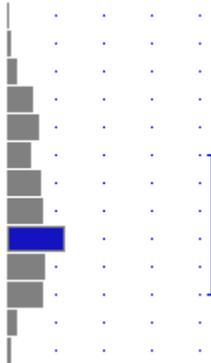
Mid-point marker: Identifies the midpoint of the trading range for each distribution.

Current price marker: Identifies the current price for an active session or the closing price for a closed session.

TPO value range indicator: Identifies the range where 70% of the TPOs occurred.

Volume Profiles

Volume profiles are horizontal bar graphs that appear to the right of each Market Profile distribution.



The line to the right of the volume is the volume value area, which identifies the range in which 70% of each contract's actual volume occurred.

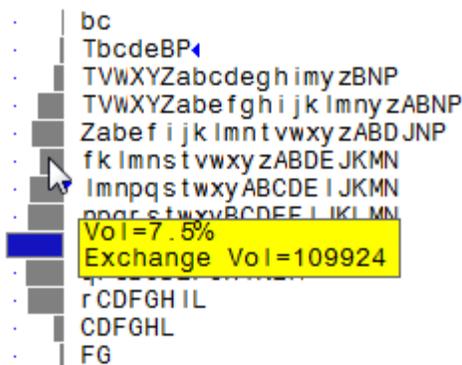
There are two types of volume profiles: tick volume and actual (exchange) volume.

Tick volume profiles report the number of trades, ignoring the number of contracts and the prices that occurred in a specified futures contract. Each horizontal bar represents the percentage of ticks (price changes) that occurred at each price in a contract's trading range. For some contracts only cumulative volume is available. In those instances, netted volume is used as a proxy for tick volume. Netted volume is calculated by taking the difference between successive cumulative volumes. The tick volume profiles are replaced by actual volume profiles when actual volume information becomes available from those exchanges that transmit volume breakdowns.

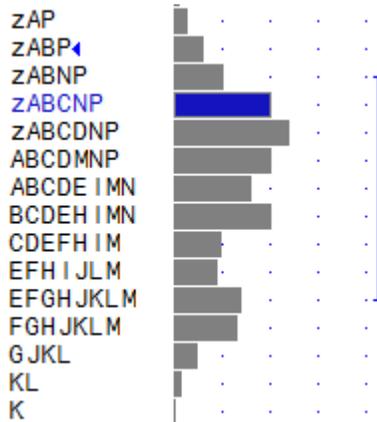
Actual volume profiles not only report the prices, but also report the volume that occurred at each price. The exchanges that provide actual price-volume information typically do so after trades have cleared.

Use the [volume buttons](#) to display volume on the chart. You can remove the volume using those buttons or by right-clicking the chart and then clicking **Volume**.

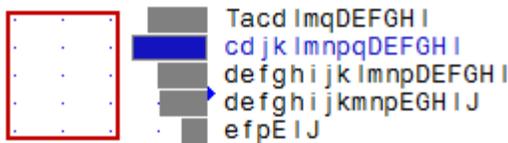
Hover your mouse over the volume to display a tooltip that provides both actual volume and volume percentage:



Right-click the volume, and then click **Move Volume to the Right** or **Move Volume to the Left** to move the volume bars. Here the bars have been moved to the right (in the previous image, they are on the left):



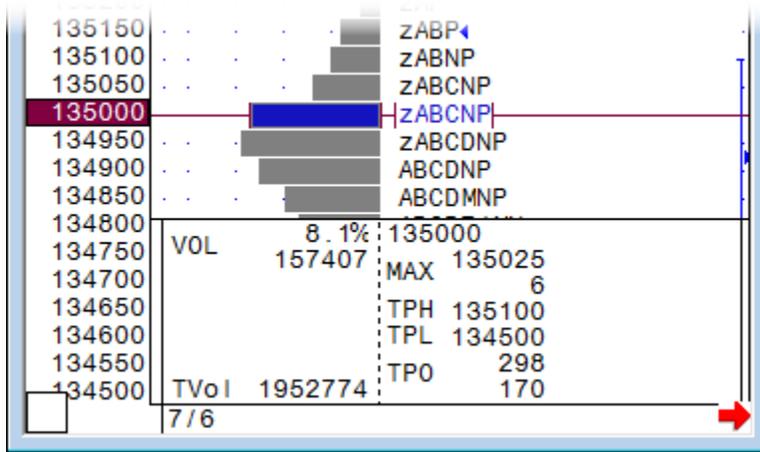
Session Separators



Session separators are dotted vertical lines that appear in the background of a Market Profile. They identify the beginning of each trading session. For longer period Market Profiles, they mark the beginning of each distribution. For example, on monthly Market Profiles, they indicate the beginning of the year.

Market Profile Cursor Value Box

The values in the box correspond to the location of the horizontal line cursor on the chart. For example, the top price in the Cursor Value Box indicates that the cursor is at 130050:



If no cursor is active, then the information pertains to the most recent horizontal line.

VOL	Percent and actual volume at this price. In the example, 1.4% and 36127.
TVol	Total volume. Here, 2610632.
MAX	Price that has the maximum number of TPOs for the row selected. It is followed by the number of TPOs for this price. In the example, the price is 130075 and the number of TPOs is 27. If there are several prices in a row with the same number of TPOs, the price closest to the center of the price range is used.
TPH	Time Price High
TPL	Time Price Low
TPO	TPO counts above and below the cursor. However, tails that are only 1 TPO long are not counted. In the example, there are 601 TPOs above the cursor and 274 TPOs below the cursor.

Market Profile Toolbar

The Market Profile toolbar includes most of the same buttons of a chart toolbar with these additions:

1/X button

Click this button to invert the Market Profile, so that the vertical scale values are 1/price.

Volume button

Adds actual volume profile to the Market Profile.

TickVol button

Adds an tick volume profile to the Market Profile.

Split button

Displays [split market profile distributions](#).

Compact button

Click this button to change the look from normal to compact.

Market Profile Parameters

- **Display:** Choose display properties, such as color and line weight, for TPO Text, TPO Background, Value Area, Value Area Shading, Point of Control (1-5), Initial Balance Range, Open Price Marker, Mid Price Marker, Current Price Marker, Split Markers, Volume, and Volume Border. Point of Control has additional display parameters. POC Distance determines how many ticks between POCs. For example, a setting of 5 indicates that a range of 5 ticks is ignored when searching for the next POC.
- **MarkIt**
- **Type:** Determines the type of [volume](#) displayed with the Market Profile. Options include: tick only, exchange only, exchange or tick, and none.

Actual volumes represent the total number of contracts traded during the selected chart interval.

Tick volumes are the number of price changes that occurred during a specified time period.

For Exchange or Tick, exchange volume will be used if it's available, otherwise ticks will be used.

- **IBR Period:** Determines the number of TPOs used for the [Initial Balance Range](#).
- **Line Spacing:** Determines the TPO vertical line spacing as a percentage of the specified font size.
- **Value Scale:** Determines the scale of the Market Profile by setting the number of minimum price ticks represented by each TPO.
- **Tick Size:** Allows you to enter a tick value, which represents the minimum price move.
- **Resolution:** Determines the resolution of the TPOs. Choices are: **High**, **Medium**, and **Low**.

Resolution refers to how the bars are built, and it only applies to spread Market Profiles. Bars are built for each time frame within the High, Medium and Low resolution classifications like this:

	Intraday	Daily	Weekly	Monthly	Quarterly	Semi-Annually	Annually
High Resolution	1	5	60	Daily	Weekly	Monthly	Quarterly
Medium Resolution	5	30	Daily	Weekly	Monthly	Quarterly	Semi-Annually
Low Resolution	10	60	Weekly	Monthly	Quarterly	Semi-Annually	Annually

In other words, the bars for a daily spread chart with high resolution selected would be built by examining the differences in the closing prices for the respective contracts at each 5-minute interval and constructing the High, Low and Close for that bar based on those differences. Likewise, for a spread Market Profile with a medium resolution, the bars would be built from the closing values for each 30-minute interval.

- **Look:** Select **Normal** or **Compact**. A compact view changes the letters to lines in order to condense the view.

Changing the Price Scale

COG sets the initial Market Profile scale to display complete distributions. If the distributions are relatively tight, the scale may be shown in one-tick increments. When large distributions are displayed, the scale is often displayed in multiple tick increments, allowing the distributions to fit within the Market Profile window.

To rescale the prices

Dragging the scale up and down rescales the prices to the maximum of a one-unit increment. The increment is set as the **Value Scale parameter** and does not need to be the same as the tick size.

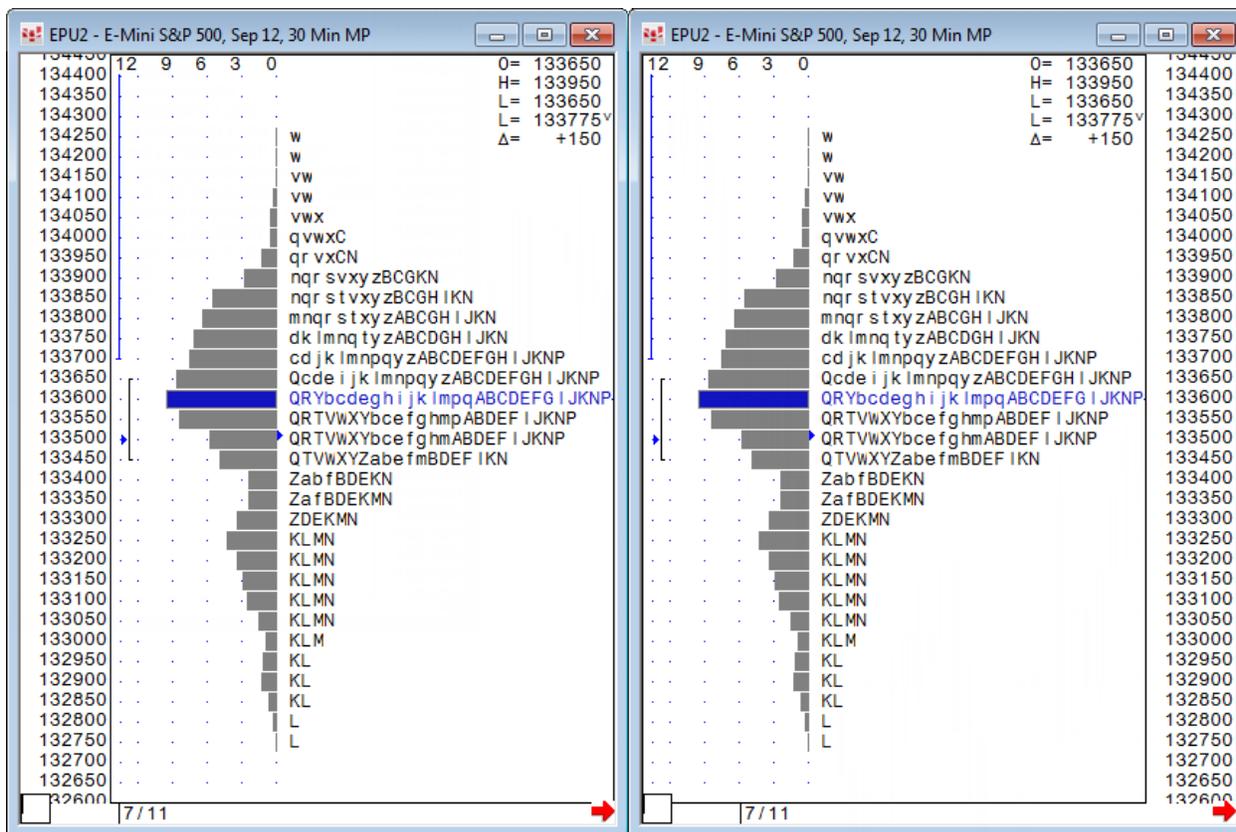
You can also enter a number in the Command Entry box. For example, entering a 5 would change the price scale to reflect minimum increments of 5 units.

When the price scale is manually adjusted, the resulting scale is centered on the price previously at the center of the price scale. However, if the price cursor is displayed when the scale is manually adjusted, the resulting scale is centered around the price identified by the cursor.

To move the scale to the right or left of the chart

Right-click the scale, and then click **Move Scale to the Right** or **Move Scale to the Left**.

This image shows the scale on the left and then on the right.



To use Auto Scale

The auto scale feature takes all the profiles visible on the current screen and scales them vertically so that each profile is completely visible and all the visible profiles completely fill the screen.

Right-click the scale, and then click **Auto Scale**.

To invert the scale

Like a bar chart, you can easily invert a **Market Profile**, so that the vertical scale values are 1/price.

Right-click the scale, and then click **Invert**.

To reset the default

Resetting the vertical scale to the default moves the display the most current profile and activates the auto scaling feature, i.e., takes all the profiles visible on the current screen and scales them vertically so that each profile is completely visible and all the visible profiles completely fill the screen.

To hide prices

You can choose to display both price and volume or one or the other.

1. Right-click the chart. The price and volume options are at the top of the menu.
2. Clear the checkmark from **Prices** to hide price. Only volume is shown.

Changing TPO Distribution Profiles

You can look at the TPO distribution in several ways. First, the profile is either default or session:

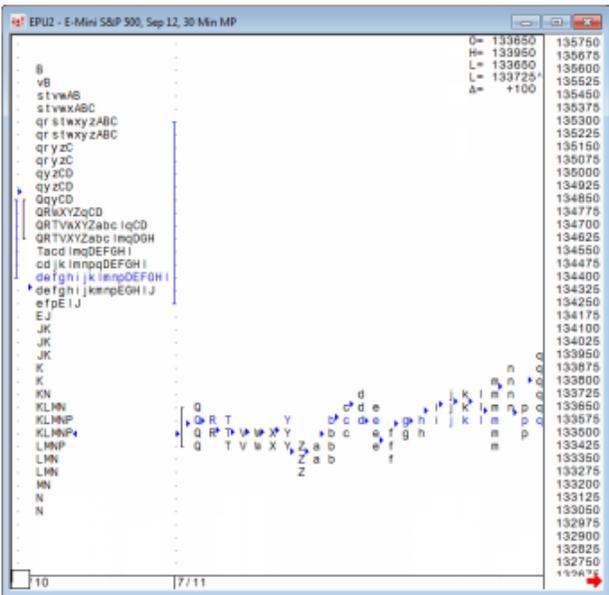
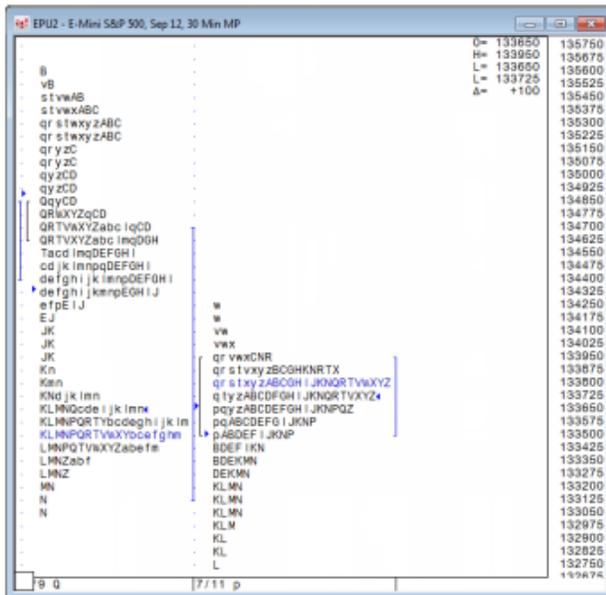
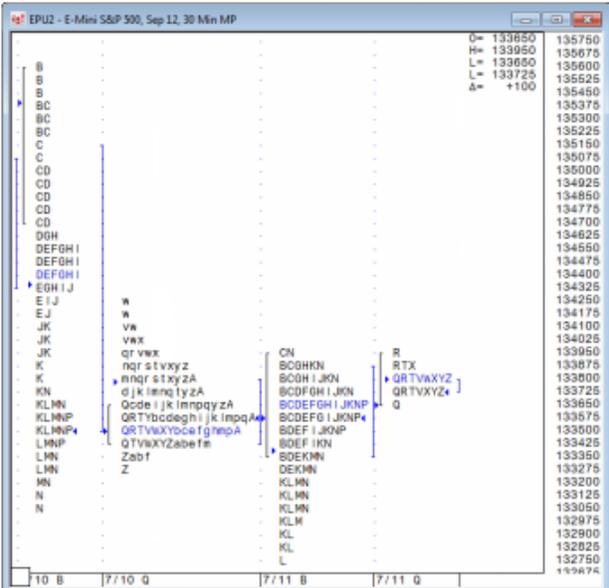
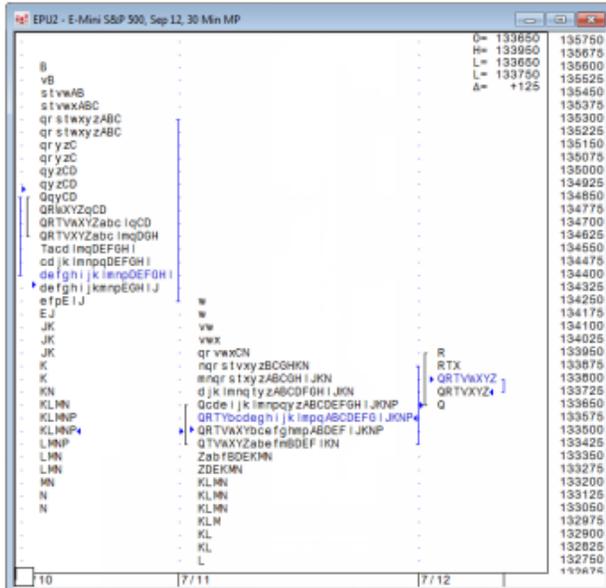
- **default profile:** shows the distribution for each day (24 hours)
- **session profile:** shows the distribution for each session

Then, each of those profile types can be combined, split, or neither.

- **combined:** shows the (daily or session) distribution for a custom period of time, such as 48 hours or one week
- **split:** shows the distribution for each 30-min period or for a custom period of time, such as two hours

Default

Sessions



Combined

Split

To change the position of the distributions in the window

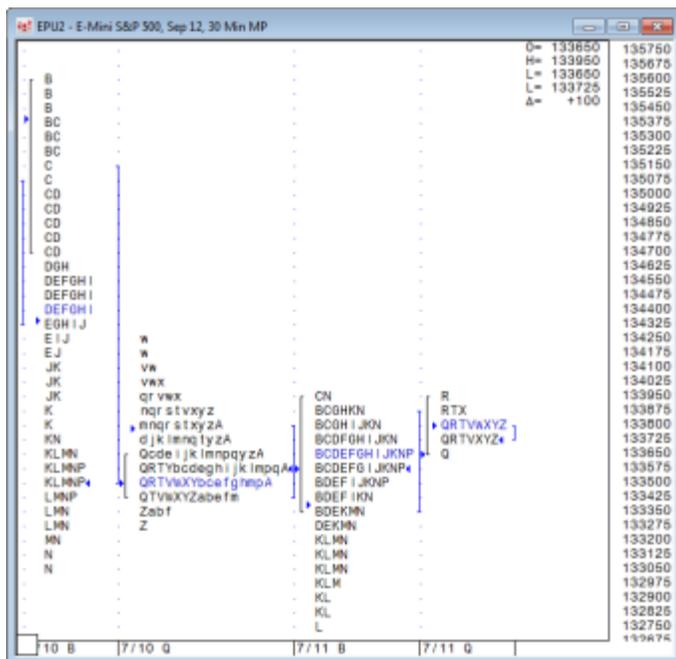
You can change the position or location of the Market Profile distributions within the window without changing the profile. This is helpful when some part of the distribution does not appear in a smaller window.

1. Click the Market Profile and drag the mouse up, down, left, or right.
2. When you have the distributions repositioned, release your hold on the mouse.

To display distributions by session

1. Right-click the Market Profile. You can also right-click the time scale.
2. Click **Session Profiles**.

This image shows distribution by session. Notice the session indicators near the date at the bottom of the window. This symbol has a session at Q and at B.



To return to default sessions, right-click the Market Profile, and then click **Session Profiles** to remove the check mark.

To combine distributions

1. Click and drag the current date to the left. Notice that the date and time indicator changes.
2. When you get to the date and time you want, release your hold on the mouse. The combined distribution is from that date and time to the current date and time.

This image shows combined distribution. Notice that B repeats in the same line.

```
Kn
Km
KNdjkImn
KLMNQcdeijkImn
KLMNPQRTYbcdeghijkIm
KLMNPQRTVWXYbcefghm
```

To return to the default profile in all time frames, right-click the Market Profile, and then click **Default Profiles**. You can also right-click the time scale.

To return to the default profile in this time frame only, right-click the time scale for this time frame, and click **Restore Original Profile**.

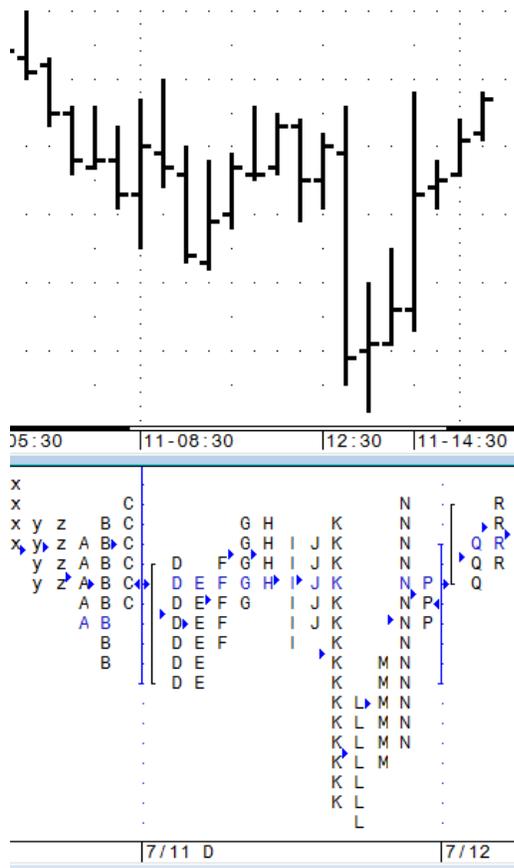
To split distributions

Splitting distributions allows you, potentially, to see each price a contract traded at during the specified time period.

You can split the distribution at each 30-min time period or at a specific time.

To split into 30-min sections, click the **Split** button. You can also right-click the Market Profile, and click **Add Splits**.

This image shows a 30-min split. Notice its similarity to a chart.



To split at a certain time, click the letter for that time. Let's consider a simple example. Suppose I want to see everything that happened before and after 9:00 a.m. I click the C and the chart splits at C.

w
vw
qvwxC
nqr svxyzBCG
mnqr stvxyzABCGH I J
cd jk lmnopq tyzABCDEFGH I J
QRYbcdegh i j k lmnopqzABCDEFGH I J KNP
QRTVWXYbce fghmpABDEF I J KNP
QTVWXYZabefmBDEF I KNP
ZafBDE KMN
KLMN
KLMN
KLMN
KL
KL
L

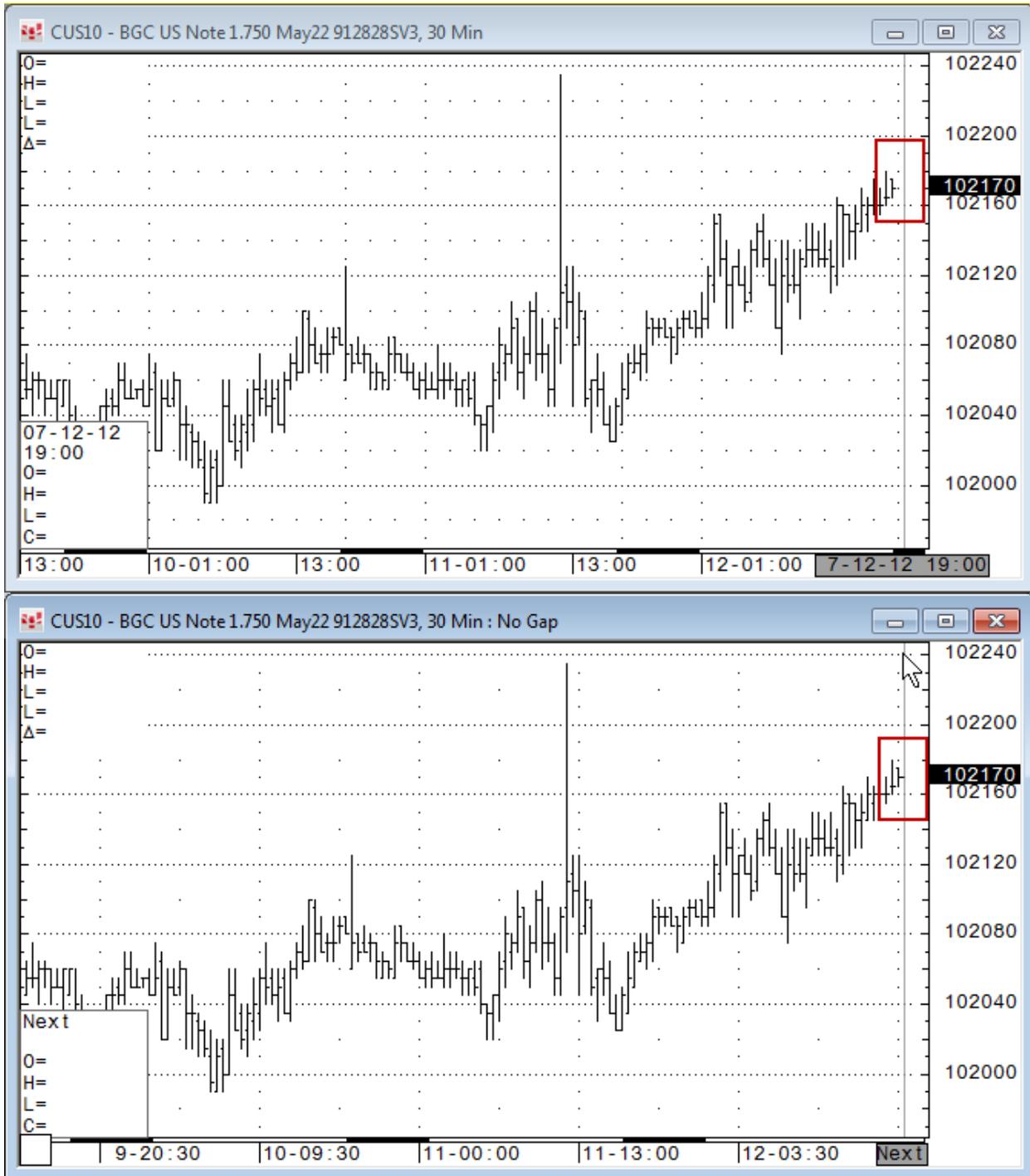
To remove the splits in this time frame only, right-click the Market Profile in the time frame of the split, and click **Remove Splits**.

To remove all splits in every time frame, right-click the Market Profile, and click **Remove All Splits**.

No Gap (NG)

On No Gap charts, various gaps in the chart data are removed.

Through the **Remove From** parameter, you can choose to remove all gaps or only those occurring at certain times.



No Gap Parameters

- [Display](#)
- **Remove From:** Choose to remove gaps occurring at the start of session, end of session, start and end of session, or all gaps.

Percent Bar (PCB)

Percent bar charts are displayed as percentages from a user-selected base price or from the close of a bar determined by the base index.

Base price is defined as the price from which all other values have their percentages derived.

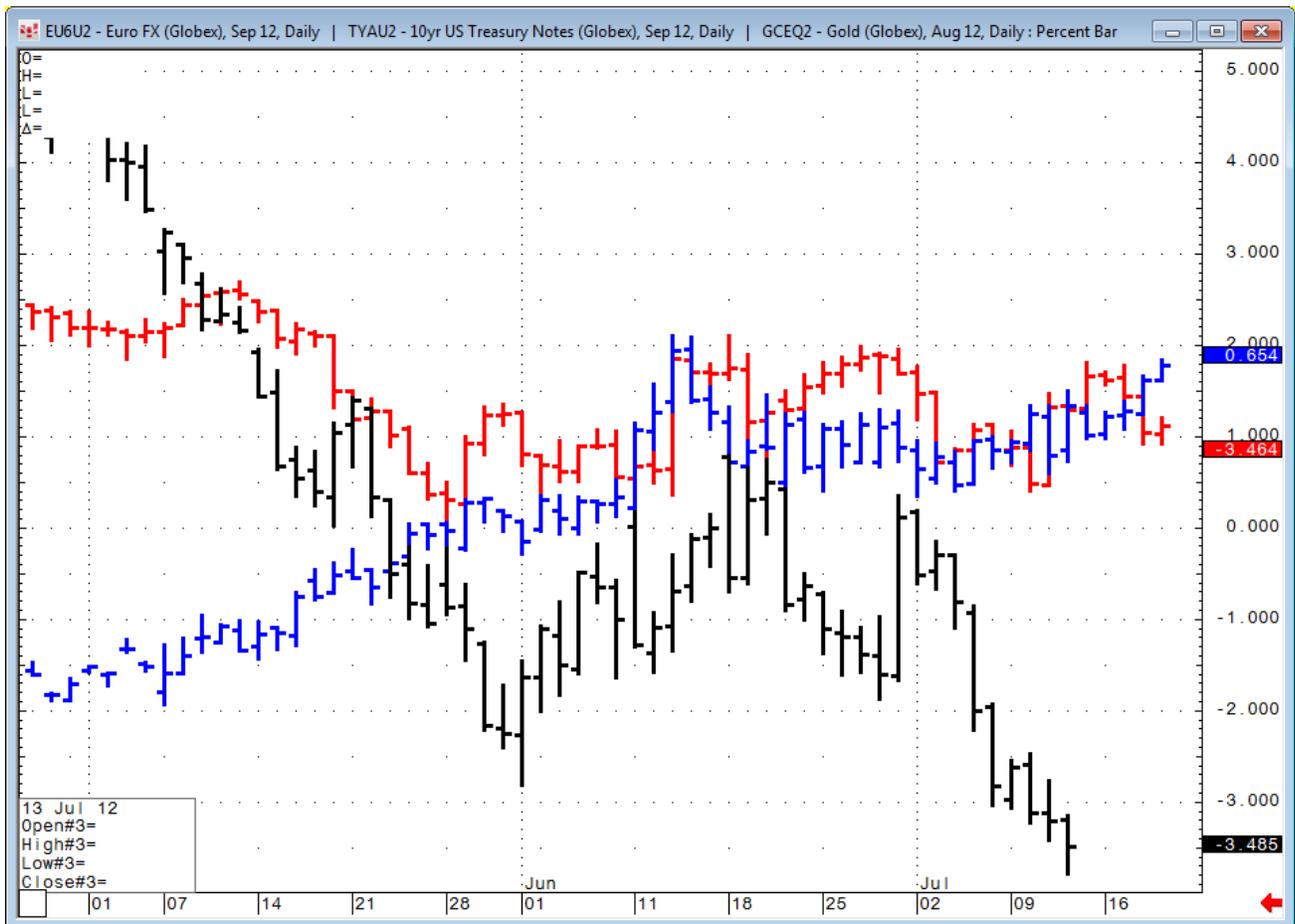
Base index is an offset number of bars from the current bar. The close of the base index bar is used as the price from which all other values have their percentages derived, if Index is select as the **Use** parameter.

If the base price indicates a price (i.e. not 0), the "0% point" is located at the specified base price and the base index value is ignored. all other percentages are derived from this 0% point.

If the base price equals 0, the close of the base index bar is used as the 0% point.

If **Use** is set to **Date**, the 0% point is set to the close value for the date entered.

This chart type can be a good tool for research also. In this image, we see that Eurodollar drops by a higher percentage than gold futures, and that TYA prices increase as interest rates decrease.

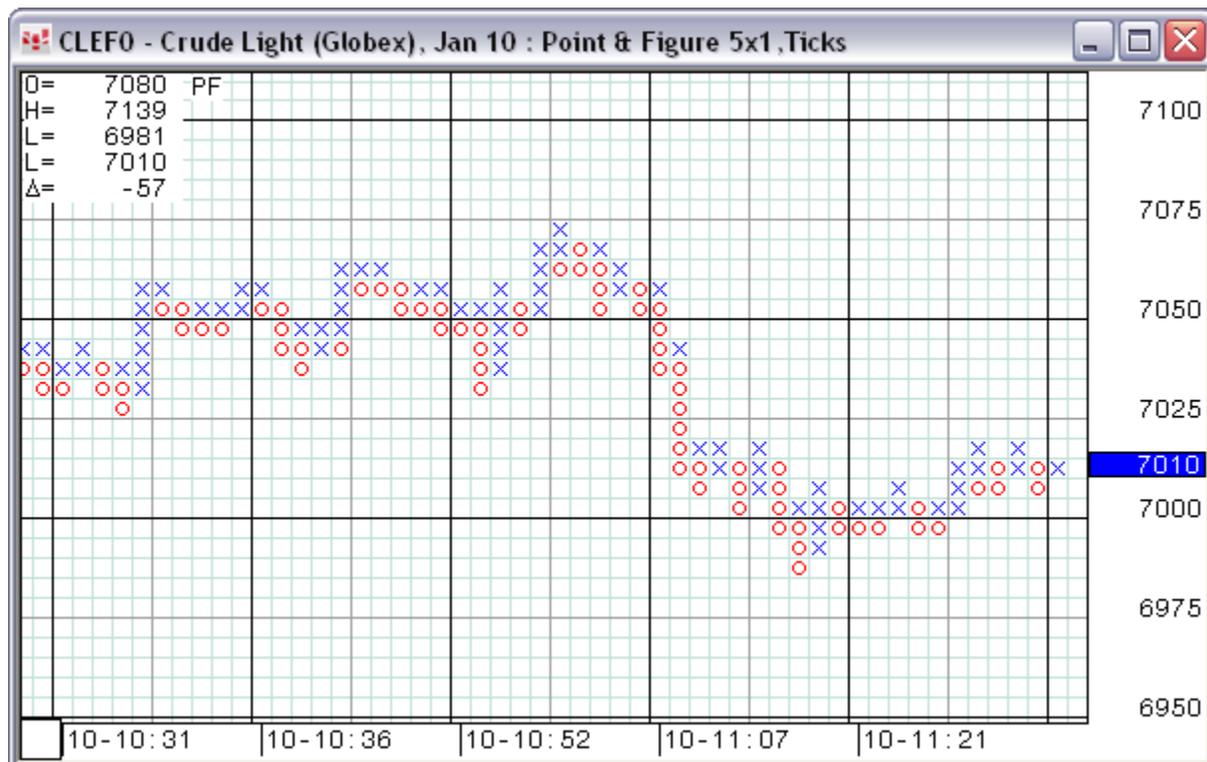


Percent Bar Parameters

- [Color](#)
- [MarkIt](#)
- **Use**: Determines which value is used as the basis for the Percent Bar Chart calculations. This parameter can be set to **Price**, **Index**, or **Date**, as defined below.
- **Price**: Allows the user to set the price to use as the basis for the percent bar chart.
- **Index**: Allows the user to set the offset number used for the base index. the offset is the number used to count back from the current bar, and the base index uses the closing value from that bar.
- **Date**: Allows the user to enter a date. When **Use** is set to **Date**, the close on the date entered in this field is used as the 0% point.

Point and Figure (PF)

Unlike other charts, point and figure charts have no time axis. Instead of plotting price over time, these charts plot the changes of direction in price on a graph-like grid. The grid shows a column of Xs as the price rises followed by a column of Os as the price falls.



Reversals are constructed according to [The Definitive Guide to Point and Figure](#) by Jeremy du Plessis. For instance, notice in the image that columns can contain both X and O. Plessis allows 1-box reversals, helping to make analytics more useful and accurate as well as saving real estate.

Boxes on the grid are exactly 1x1. When you scale the chart, the boxes remain square.

Point and figure charts can help you avoid the noise of minor market movements, as only significant price changes are plotted on the chart.

They also facilitate a quick, visual assessment of the overall trend of the market.

Plotting of price data is dependent on the **Box Size** parameter and the **Reversal** parameter.

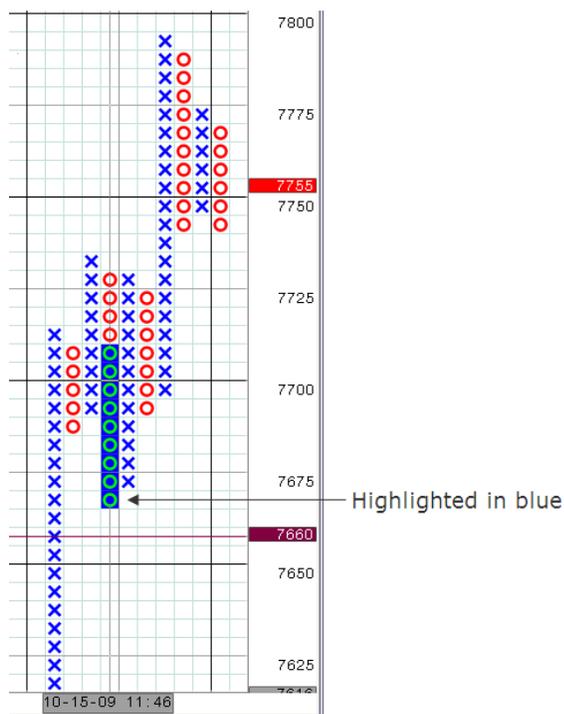
Box Size establishes a price (or tick) unit by which the system calculates Xs and Os. You decide how many price units make up a box. The price must move this many units in the opposite direction to begin a new column. An X is plotted when prices rise by this size, and an O is plotted when prices fall by this size.

This process of plotting Xs or Os continues until the **Reversal** is reached. When prices reverse, they must reverse by this amount multiplied by the box size before a new column is plotted. A new column, therefore, signals a change in the price trend.

No Xs or Os are displayed if prices rise or fall by an amount that is less than the box size.

The **Data Source** parameter specifies the time frame of the data that will be used to build the Point and Figure bars. Using longer term data means the display will be less detailed but faster to display. Conversely, using shorter term or tick data means the display will be more detailed but slower to build.

The convention for plotting point and figure charts dictates that each X column start one O in the most recent column, and each O column start one X below the high in the most recent X column. Therefore, there are situations, especially in volatile markets, where the start of each X or O column does not actually represent a price the market traded. CQG alerts you to those situations by highlighting the Xs and Os, which represent actual trades when the vertical cursor is active.

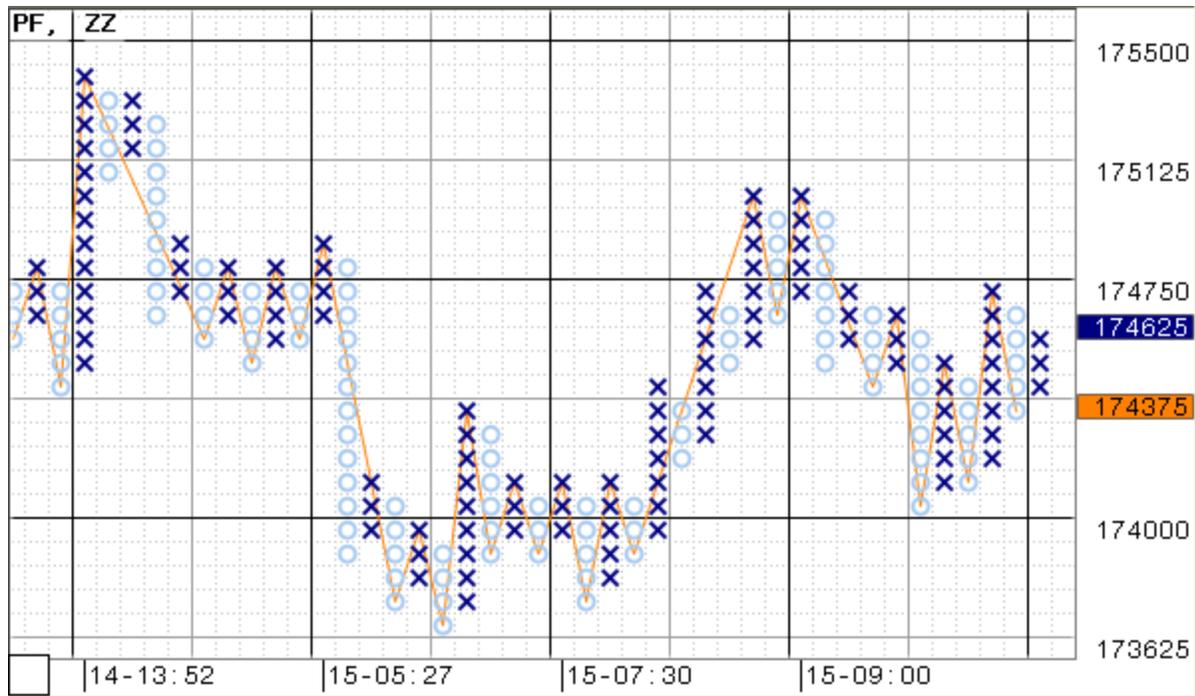


You are also made aware of those situations through the PFHigh and PFLow box where the actual trade prices for each reversal are clearly indicated.

Point and figure charts help establish entry and exit points, determine support and resistance levels, and identify trends and trend reversals.

Price formations are analyzed to expose potential buy and sell signals and breakout from support and resistance levels. Breakouts may indicate where the trend is headed. The longer a price plot moves in the same direction, the stronger the reaction may be on a breakout. An uptrend could indicate that demand has overcome supply, while a downtrend may indicate the opposite.

Connect highs and lows using the ZigZag study:



Point and Figure Parameters

- **Color1:** Color for the Xs.
- **Color2:** Color for the Os.
- **Box Size:** Specifies the number of price or tick units represented by each X and O.
- **Box Units:** Specifies whether tick or display price scale units are used for box size. For example, for an EP chart, 25x3 price is the same as 1x3 tick, because on the price scale the minimal price change (1 tick) is equal to change of display price by 25.
- **Reversal:** Specifies the number of Xs or Os that the market must reverse before the chart shifts to the right and begins plotting the opposite X or O column. Remember that this value is multiplied by the box size.
- **Data Source:** Allows you to select bars or ticks for the time frame for the data. Choices are 1, 5, 15, 30 or 60 minute; daily; or ticks.

The point and figure calculations involving bar data are best illustrated by an example. Suppose the current trend is an uptrend. Initially the system checks the high for each new bar. If the high is high enough that a new box can be filled, we go on to the next bar. In the case where a new box can be filled, the low of the bar is not considered.

If the high of the bar is not high enough to fill a new box, we consider the low. If the low is low enough to cause a reversal from the high of the current up-trend, a new down-trend is created. This downtrend is drawn on the chart extending from one box below the high of the up-trend down to the box corresponding to the low of the bar. If the low is not low enough to cause a reversal, no action is taken and the up-trend remains the current trend.

- **One Step Back:** Tells the system that if the current bar consists of a single box and the market reaches a reversal point, then the next bar is not started. Instead, the current bar continues building in the opposite direction. Only when Reversal = 1. Default = on.
- **Grid Type:** Select **Perfect square** or **Scalable**. If you select **Scalable**, the grid does not remain in a perfect square pattern when you scale it.

These parameters can be found in the **Formula Toolbox Bar Values:**

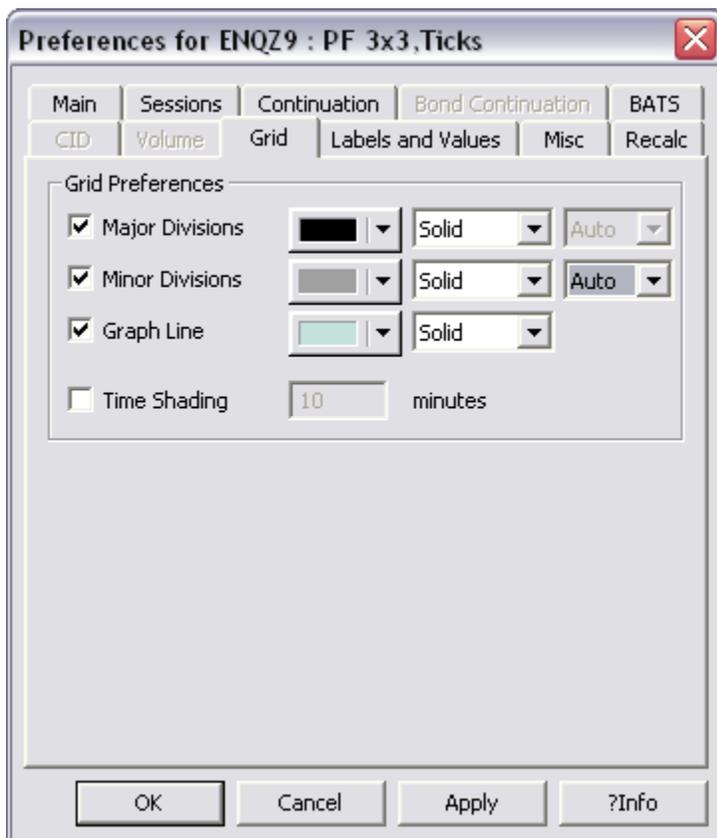
- **PFMid:** The Average of the PFHigh & PFLow.
- **PFHigh:** The high price that triggered the reversal, that is, the top of the highlighted area.
- **PFLow:** The low price that triggered the reversal, that is, the bottom of the highlighted area.
- **PFUp:** Reports a 1 if the Point and figure chart is plotting an X and a zero if the point and figure chart is plotting an O.

They can be used in formulas, conditions, custom studies, user values and alerts.

Point and Figure Grid Preferences

Preferences to change the grid appearance are in chart preferences (**Setup > Chart Preferences > Grid**).

The changes you make to a point and figure chart apply only to point and figure charts.

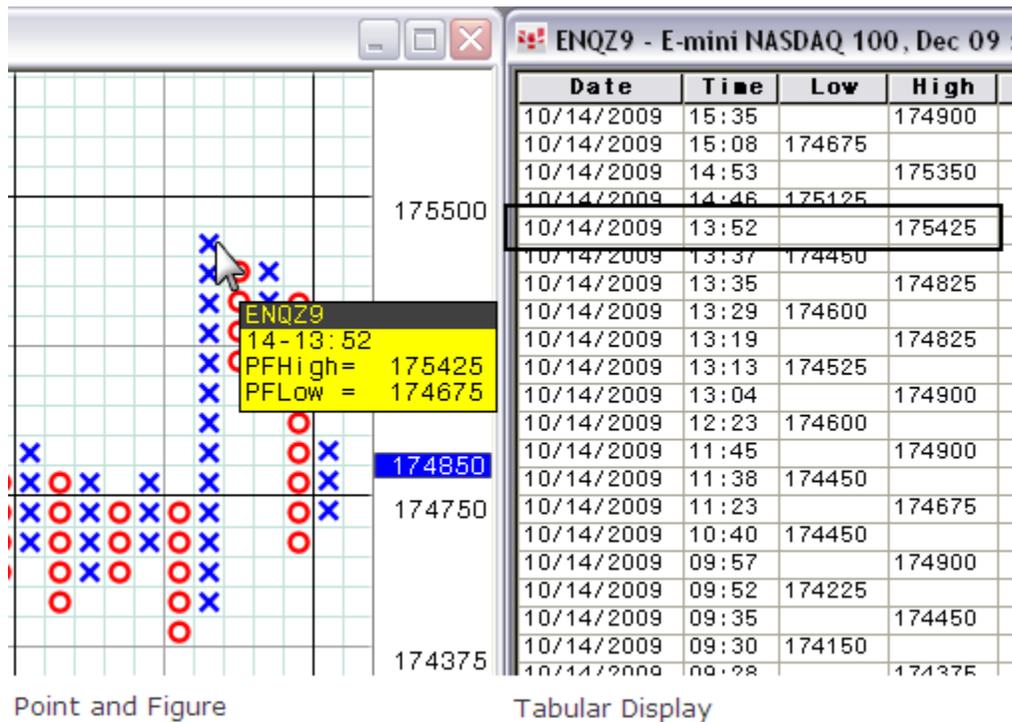


If you select **Auto** for the division lines, then the system automatically sets the block intervals either at 4 and 8 or 5 and 10 depending on the commodity. For example: CLE intervals are set to 5 and 10 because every tick is a penny. EP intervals are set to 4 and 8 because every tick is .25 index points.

When zoomed in, major divisions occur at either 4 or 5 block intervals.

Point and Figure Tabular Display

You are able to view the point and figure chart as a spreadsheet. Right-click the **Print** button and then click **Tabular Display**. A new window will open. The data that is displayed graphically on the chart will be displayed in a spreadsheet.



You can also choose the Long, Short, or Bar-Based view by clicking the button on the toolbar.

The Long view shows the high and low for each bar in a separate row, so you may have several rows in the spreadsheet that all have the same time.

The Short view shows the high and low by minute and not by bar, so you will not see several rows that represent the same time. Instead, those prices that occur at the same time are displayed in additional price columns.

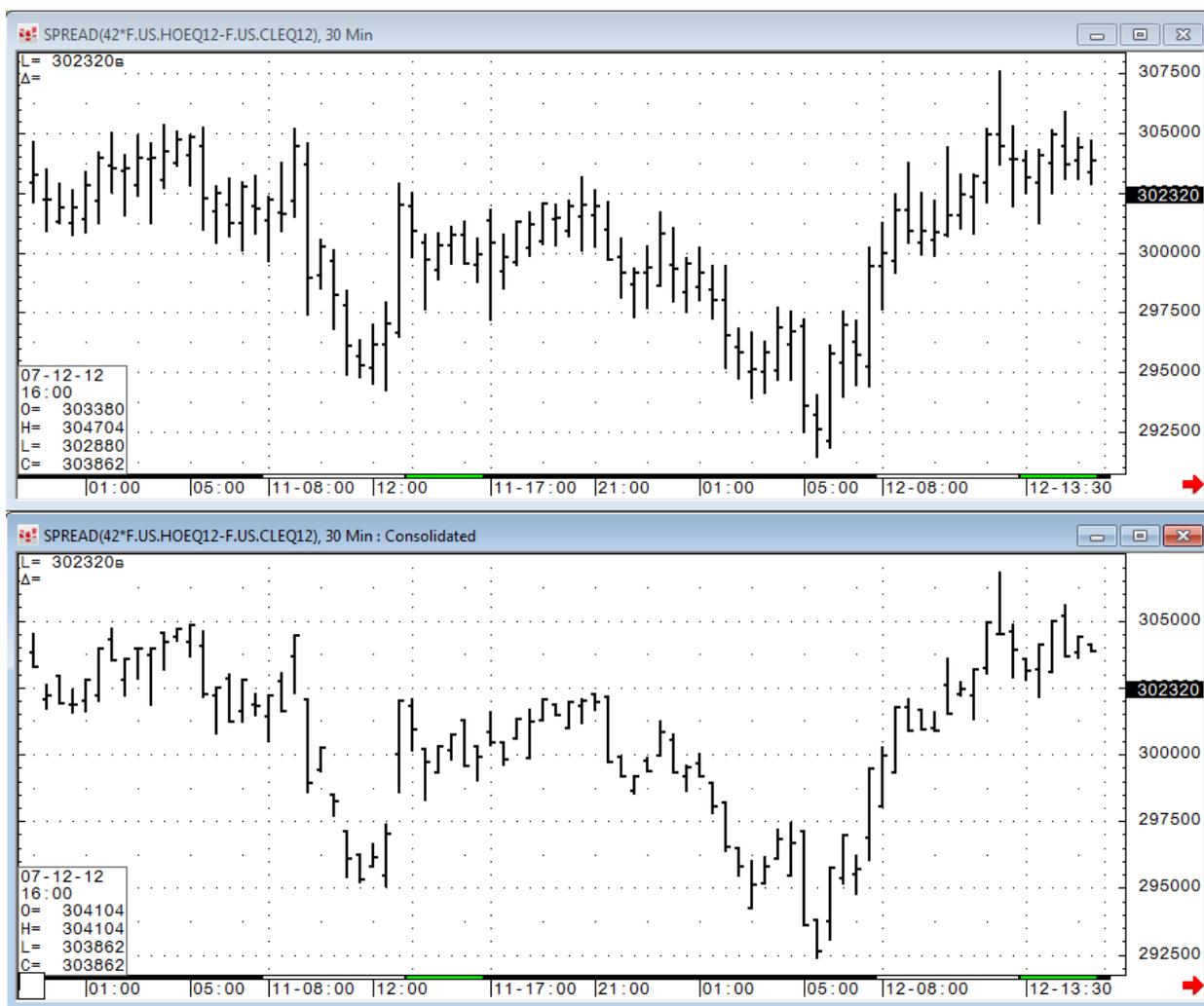
The Bar-Based view displays the PFHigh (high price triggering the reversal), PFLow (low price triggering the reversal), PFMid (average of PFHigh and PFLow), and PFUp (1 = X, 0 = O).

Spread Bar (SprdBar)

Spread bar returns bars for spread values.

For example: `Bar(42*HO-CL,1)` when placed on a 5-minute chart, returns a bar which would represent the crack spread every 1 minute summed up over a 5-minute period. Normal display of a spread is a single line; this function creates a bar by taking the value at intervals smaller than the chart and creating a range.

On a bar chart, the bar interval is dictated by the interval selected for the chart. A spread bar chart allows you to set an interval, allowing more granularity.



Spread Bar Outputs

- **SBOpen:** Returns the Open value for the spread. (Formerly CBOpen)

- **SBTrueRange:** Returns the True Range for the Spread. True Range is the greatest distance of; 1) Current High to Current Low, 2) Previous Close to Current High, or 3) Previous Close to Current Low (Formerly CBTrueRange).

Spread Bar Parameters

- [Display](#)
- **Interval:** Bar interval used to create the consolidated bars. The default setting is 1 min.
- **Max Check:** Turns on or off the Max Check function that restricts the Interval, depending on the chart type displayed when the study is applied. Without Max Check selected, it could take a very long time to consolidate one minute bars on an annual chart, for example. When Max Check is selected:

Chart Interval

Annual, Semi-annual, or Quarterly

Monthly

Weekly

Daily

Interday

Smallest Setup Interval Setting

M (Monthly)

D (Daily)

60 (minutes)

5 (minutes)

Ratio of Setup interval setting to Chart Interval must be ≤ 60 . (For example, on a 120-minute chart, you could not use a 1 minute interval setting.)

TFlow (TFlow)

TFlow offers not only quote data, but also depth of market data. TFlow are built from a DOM data and consist of:

- Low that indicates the lowest bid traded at the start of the bar. If no trades occurred at the bid, this value is the highest bid.
- High that indicates the highest ask traded at the start of the bar. If no trades occurred at the ask, this value is the lowest ask.
- Bid volume (BV) that indicates the volume of the trades at the bid side accumulated over the bar.
- Ask volume (AV) that indicates the volume of the trades at the ask side, accumulated over the bar.

The current TFlow bar is closed and a new bar opened when any of the following price conditions occur (except Fixed Income):

- Last trade is greater than the bar's high.
- Last trade is lower than the bar's low.
- Best bid is greater than or equal to the bar's high and best bid is not equal to best ask.
- Best ask is less than or equal to the bar's low and best ask is not equal to best bid.
- Best bid is greater than traded bid of the current bar.
- Best ask is less than traded ask of the current bar.
- The first tick occurs in a new session.

If both best bid and best ask are updated at the same time, they are processed simultaneously.

In order to compress TFlow market data, you can aggregate TFlow in three ways: bars, range, and smoothing. Aggregated TFlow bars provide the same information as one-tick bars, but they are compressed into a single bar based on a number of bars or range.

Bar aggregation is used to highlight support and resistance levels. Setting the aggregation to three bars (aggregation = bars, aggregation level = 3) tells the system to combine every three bars into one bar.

Range Aggregation compresses market action making better use of screen real estate. Setting the aggregation to a range of five ticks (aggregation = range, aggregation = 5) tells the system to create new bar for every five ticks.

Smoothing Aggregation uses a proprietary algorithm to reduce market noise around the trendlines, allowing you the opportunity to spot key market turns.



To set aggregation preferences

You can set aggregation preferences in two ways: using Chart Preferences or using the TFlow parameters window.

Using Chart Preferences

1. Click the **Setup** button and then click **Chart Preferences**.
2. On the **Main** tab, choose **Bars**, **Range**, or **Smoothing** in the **Aggregation** field.
3. Enter a value in the **Aggregation Level**.

Using TFlow parameters

1. Right-click the chart, and then click **Modify Study Parameters**. The parameters window will open.
2. In the Aggregation field, choose **Bars**, **Range**, or **Smoothing**.
3. Set the aggregation level.
4. Click **OK**.

TFlow Outputs

The cursor value box, QFormulas toolbox, mouse tool tips, and tabular display all contain these outputs:

- High
- Low
- AV = Ask trade volume.
- BV = Bid trade volume.
- AV1 = Ask trade volume of previous bar.
- BV1 = Bid trade volume of previous bar.
- AvgCompr = Number of individual TFlow bars that are included in an aggregated TFlow bar based on aggregation type and aggregation level. If Aggregation = Bars, then AvgCompr = Aggregation Level.

TFlow Parameters

- [MarkIt](#)
- **Volume Threshold (TFlow):** Choose **Percent of Average**, **Percent Rank**, **Actual**, and **No Normalization**.
 - Percent of Average** values are taken as percents of average volume. It is calculated as the arithmetic mean of total volume of all bars in the same session from the previous trading day.
 - Percent of Rank** indicates where the bar falls relative to lookback period.
 - If the previous day's average is not available, then **Actual** volume values will be displayed.
 - No Normalization** changes the bar color to black and removes weighted volume. Range of the bid and ask is displayed.
- **Volume Threshold (TFlow Vol):** Choose how the bars should look based on their volume. For example, if the percentage of volume is greater than 90, then the bid bar is bright red and ask is bright green. Or, if the actual volume is greater than 10, but less than 50, the bid bar is dark red and the ask is dark green.
- **Aggregation:** Select **Bars**, **Range**, or **Smoothing**.
 - Bars = aggregates TFlow bars by number of bars set in Aggregation Level
 - Range = aggregates TFlow bars by number of ticks set in Aggregation Level
 - Smoothing = aggregates TFlow bars using a proprietary algorithm and number of bars set in Aggregation Level
- **Aggregation Level:** Tells the system to create a new bar for every n bars (up to 20) or when the range exceeds n ticks.
- **BVol:** Select the color for bid volume bars for each size of bar.
- **AVol:** Select the color for ask volume bars for each size of bar.

Time-Based TFlow (TTFlow)

The Time-Based TFlow chart displays bars built based on Time & Sales data similar to regular time bars, but with the addition of bid and ask volume. Bid and ask volume is available intraday only. This chart also provides access to historical data.

Time-based bars appear as TFlow bars with open and close markers.

The bid volume is represented by the red part of the bar, and the ask volume is green. The color brightness and the width of Time-Based TFlow bars are based on the current bar's volume relative to the volume history. The preferences offer four preset colors/widths. The higher the volume then the brighter and wider the bars.

Three techniques are available in the preferences to determine the current bar's volume relative to the volume history: percent ranking, percent of average, and actual. These values are explained in parameters.

This chart can be used with the same contracts and studies that you can use with a regular time bar. You cannot use pre-trade analytics or volume studies. Volume information will not be displayed if time and sales trade volume is unavailable.



Time-Based TFlow Outputs

The cursor value box, QFormulas toolbox, mouse tool tips, and tabular display will contain these outputs:

- Open
- High
- Low
- Close
- AV = Ask trade volume
- BV = Bid trade volume

Time-Based TFlow Parameters

- **Volume Threshold:** Choose **Percent of Average**, **Percent Rank**, or **Actual**.

Percent of Average: The four sets of colors/widths are based on the current bars volume relative to a percentage of the average of the previous same session's volume:

0 = Volume is above and up to and including the previous session's average volume times zero percent.

10 = Volume is above and up to and including the previous session's average volume times 10 percent.

50 = Volume is above and up to and including the previous session's average volume times 50 percent.

90 = Volume is above and up to and including the previous session's average volume times 90 percent.

If the previous session's average volume is not available, then the percent values are treated as actual volume values.

Percent Rank: The historical volume over a preset look-back period is ranked by size from the smallest to the largest. The current bar's color/width is determined by which of the four percentile rankings of the distribution of the volume history the current volume reading lands in. The default range of the percentile rankings are:

Zero, up to 10 percent

10 percent up to 50 percent

50 percent up to 90 percent

Greater than 90 percent

Actual: The four sets of colors/widths are based on the current bars volume being greater than a traded volume level, e.g., greater than 5,000 contracts. The preference's threshold parameters are set traded volume levels and the bar's volume is compared to them directly. For example, the levels could be set to 1,000, 5,000, 10,000, and 25,000 contracts (each level marks a range greater than and up to the next level). If the current bar's traded volume were 7,500 contracts, then the color/width would be based on the second group (5,000).

- **BVol**: Select the color for Bid volume bars for each size of bar.
- **AVol**: Select the color for Ask volume bars for each size of bar.

Tick (Tick)

Tick charts display each price traded as a unique point on the chart.

A reported trade that immediately follows an identical trade is considered a flat tick. The second trade, the flat tick, is shown on the tick chart only when the flat tick checkbox is selected.

If bids and asks are not normally used to build bar charts for a particular market, the bids and asks are not shown on tick charts.

When you have a custom BATS filter on the chart to process best bid/ask quotes, each quote affects the volume output in these ways:

- Bid/Ask tick volume, filtered tick volume, filtered bid/ask tick volume are not increased.
- Trader volume, filtered trade volume, bid/ask trade volume, and filtered bid/ask trade volume are not increased.

You can apply large trade detection to volume using the **Aggressive** parameter.

Suppose these limit orders are working at a single price:

10 lots, 1 lot, 2 lots, 1 lot, 10 lots, 100 lots

An order is placed for 1 lot and fills against the first working order, making the quantities:

9 (partially filled), 1, 2, 1, 10, 100

Next, an order is placed for 3 lots, so the order sizes become:

6, 1, 2, 1, 10, 100

Then, an order is placed for 100 lots, so the order sizes become:

0 (filled), 0, 0, 0, 0, 20

So, the fill amounts were:

1, 3, 6, 1, 2, 1, 10, 80

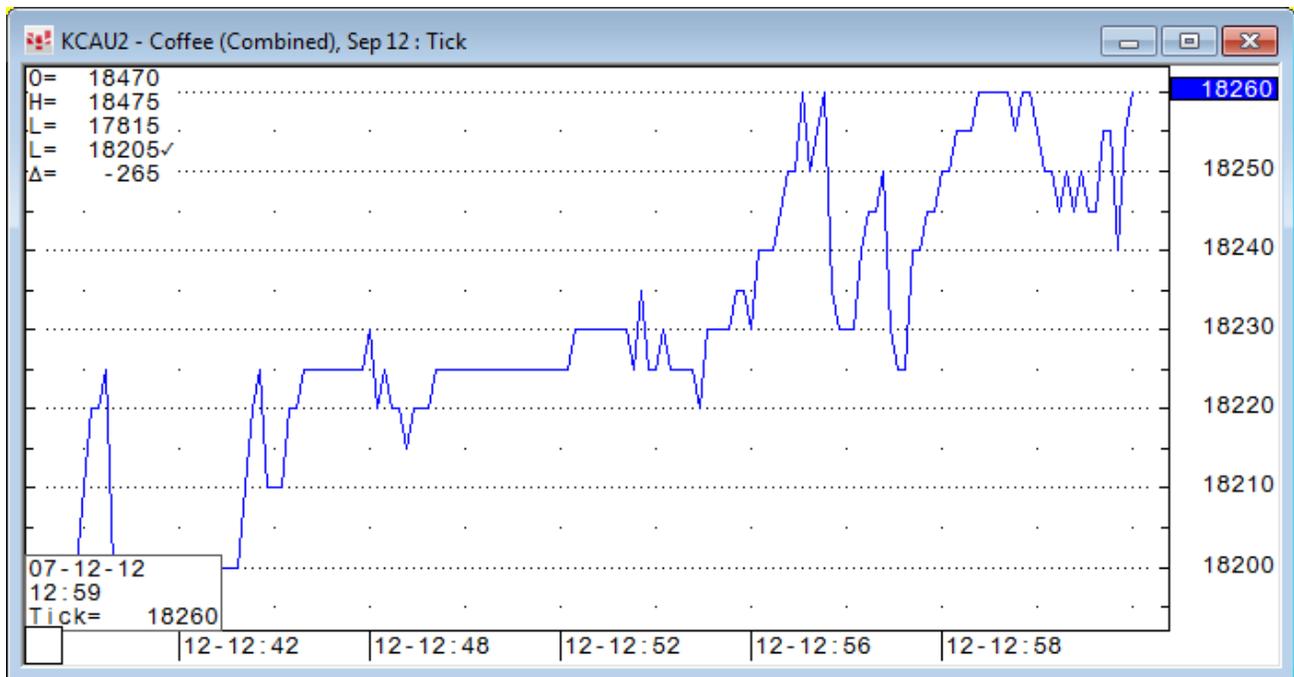
Tick bars indicate the number of ticks (8).

Missing from this information is any indication that an order for 100 lots was triggered.

Ticks provide information about the passive side of trading. With the aggressive parameter turned on, the number of orders (3) is exposed, revealing the role of aggressors in the current market.

Note that tick charts are not available for contracts quoted on a delayed basis.

Tick charts can work well with products that aren't as active.



Tick Parameters

- [Color and Weight](#)
- [MarkIt](#)
- **Flat Ticks:** If checked, 0-plus and 0-minus ticks are used when building bars.
- **Aggressive:** If checked, large trade detection is applied to quotes. Consecutive trades are considered one large trade if all of the following conditions are met:
 - They all happened on the same side.
 - There were no intervening opposite side trades among them (trade that is split between bid and ask is not considered intervening).
 - They happened within 50 milliseconds of each other (TFlow only).
 - No BBA updates occurred between trades.

If consequent trades are combined into one large trade, they are considered one tick. If trades inside one large trade were executed at different prices, then all prices are used to construct the new OHLC of the CVB bar. Applies only to tick volume. Must be used with flat ticks. Requires enablement.

Tick Chart Smoothing (TCS)

This study displays ticks aggregated with a smoothing algorithm. It is based on trade ticks only.

Smooth tick chart bars are built as follows:

- First ticks do not produce bars until the session has only first ticks. The first smoothed bar starts building immediately as the session starts.
- All ticks following the first tick produce a bar. The high and low are calculated as maximum and minimum prices among last n ticks, as set in the parameters.
- If the bar's high and low match or lie within the previous bar, the bar is added to previous bar.

The time of the smoothed tick chart bar is set by the start tick. The smoothing algorithm will restart on session boundaries.

You can apply large trade detection to volume using the **Aggressive** parameter.

Suppose these limit orders are working at a single price:

10 lots, 1 lot, 2 lots, 1 lot, 10 lots, 100 lots

An order is placed for 1 lot and fills against the first working order, making the quantities:

9 (partially filled), 1, 2, 1, 10, 100

Next, an order is placed for 3 lots, so the order sizes become:

6, 1, 2, 1, 10, 100

Then, an order is placed for 100 lots, so the order sizes become:

0 (filled), 0, 0, 0, 0, 20

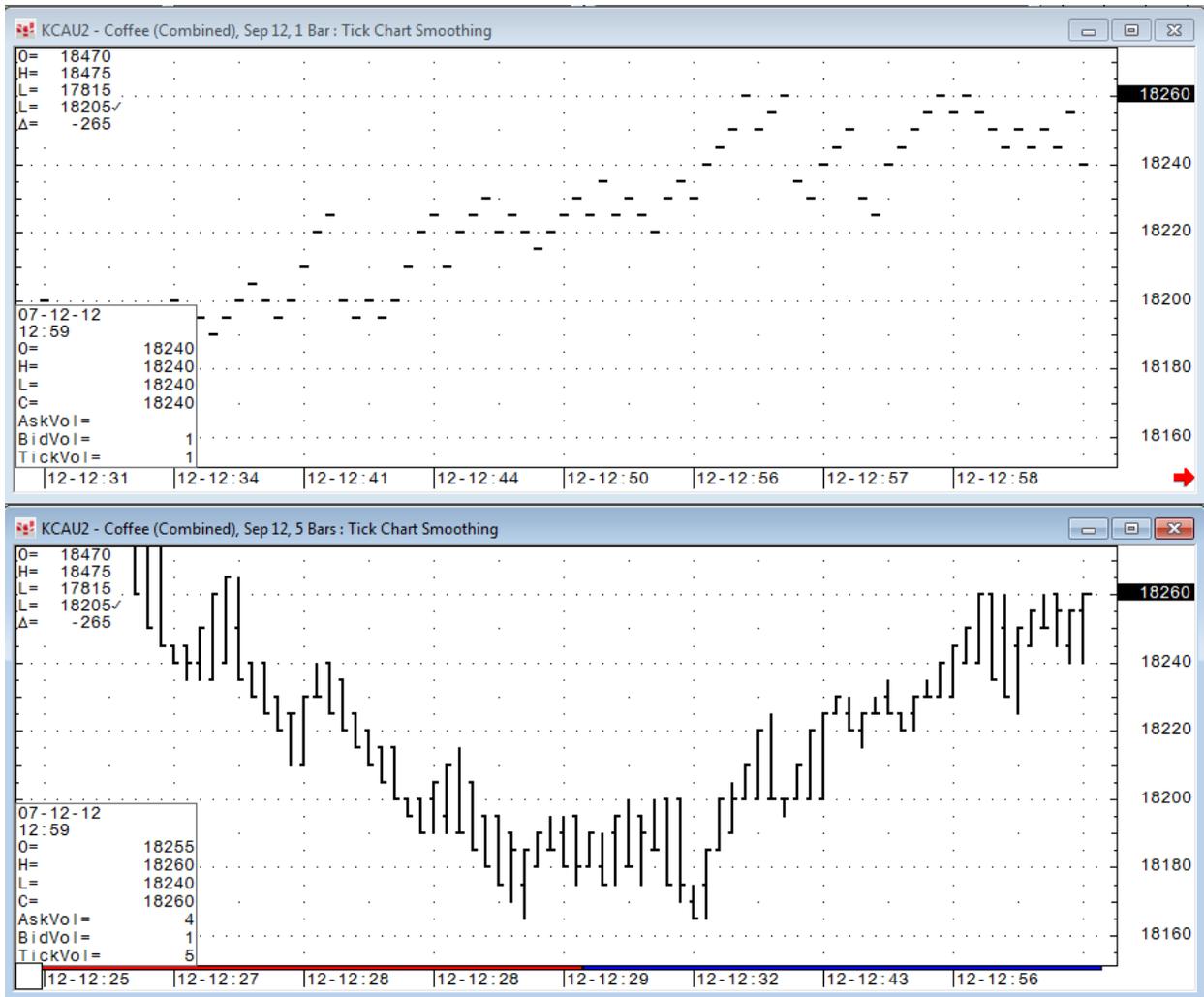
So, the fill amounts were:

1, 3, 6, 1, 2, 1, 10, 80

Tick bars indicate the number of ticks (8).

Missing from this information is any indication that an order for 100 lots was triggered.

Ticks provide information about the passive side of trading. With the aggressive parameter turned on, the number of orders (3) is exposed, revealing the role of aggressors in the current market.



Tick Chart Smoothing Outputs

- Open (start tick of the bar)
- High (highest tick)
- Low (lowest tick)
- Close (price of last trade added to the bar)
- Volume (sum of volumes of included trades)
- TickVol (amount of included ticks)

Tick Chart Smoothing Parameters

- [Color](#)
- [MarkIt](#)
- **AggregationLevel**: Tells the system to create a new bar for every n bars or when the range exceeds n ticks.
- **FlatTicks**: If checked, 0-plus and 0-minus ticks are used when building bars.
- **Aggressive**: If checked, large trade detection is applied to quotes. Consecutive trades are considered one large trade if all of the following conditions are met:
 - They all happened on the same side.
 - There were no intervening opposite side trades among them (trade that is split between bid and ask is not considered intervening).
 - They happened within 50 milliseconds of each other (TFlow only).
 - No BBA updates occurred between trades.

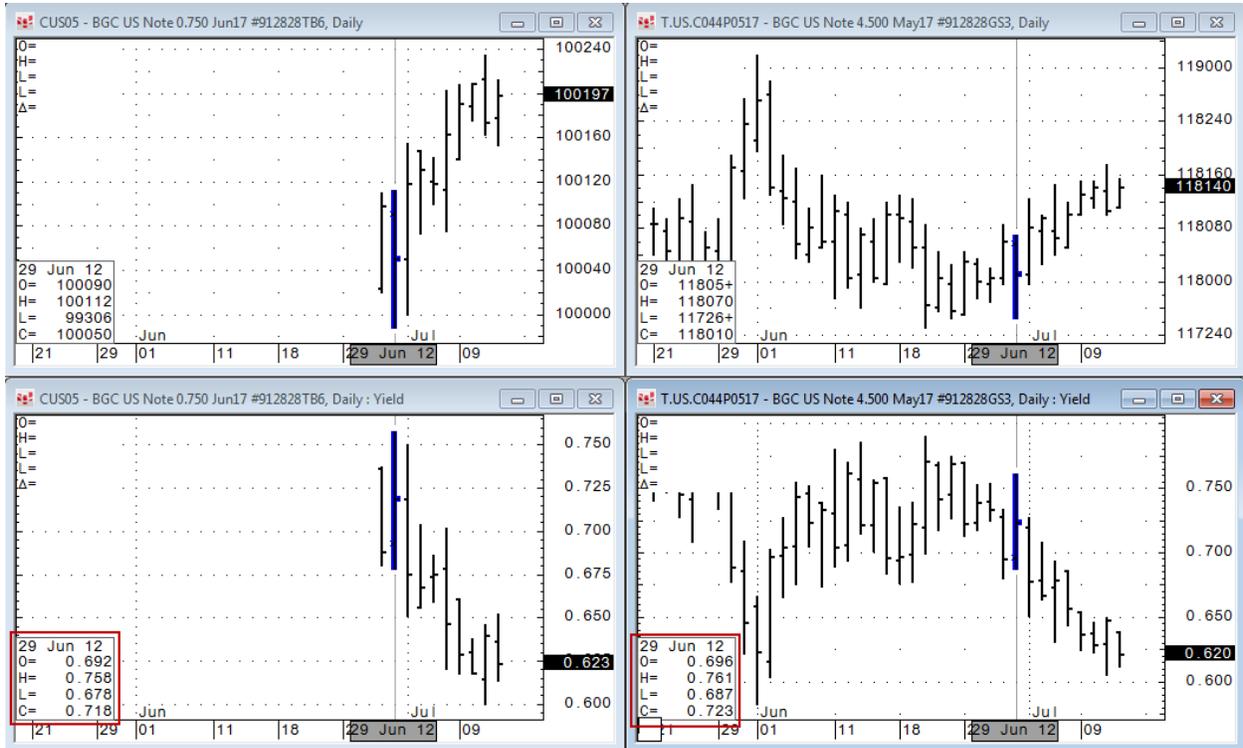
If consequent trades are combined into one large trade, they are considered one tick. If trades inside one large trade were executed at different prices, then all prices are used to construct the new OHLC of the CVB bar. Applies only to tick volume. Must be used with flat ticks. Requires enablement.

Yield (Yield)

Yield charts plot the yield for debt instruments. These charts are used in the fixed income market.

This example considers a bar chart and a yield chart for two fixed income products.

The first product was just auctioned recently, so there is little historical data for use in forecasting. In this case, we can chart an existing product with a similar maturity date (May 2017 and June 2017) to simulate a chart of the more recent product.



Yield Parameters

- [Color](#)
- [MarkIt](#)
- **Mode:** Choose **Default**, **Specific Issue**, or **Custom**.
 - Default** = Calculates yield based on contract's standard coupon and maturity. For example, TYA coupon is 6% and a 10-year maturity from today. Selecting **Default** for Yield(BTC10) uses the maturity, coupon, and price for the benchmark 10-year treasury.
 - Specific Issue** (only with futures) = Calculates yield of the futures contract based on the entered treasury maturity, coupon, and invoice price (futures price * conversion factor for that cash treasury).
 - Custom** = Calculates yield based on a treasury.
- **Calculation:** Parameters for a specific or custom issue.
 - For a specific issue, type a treasury symbol (e.g. B033P1119) or its alias. The convention, maturity, coupon rate, coupon frequency, and day count are provided automatically.
 - For a custom issue, convention, maturity, coupon rate, coupon frequency, day count, and settlement are editable. This mode allows you to use a non-standard settlement date, such as delivery date, in the calculation.
 - Convention:** Choose **Default**, **Standard Bill**, **Simple Bond**, **Moosmuller**, or **Braess-Fangmeyer**.
 - Maturity:** Choose **Default** or **Other**. If you select **Other**, enter a maturity date.
 - Maturity Date:** Editable date when Maturity = Other.
 - CPN Rate:** For a custom issue, select the rate.
 - CPN Freq:** Choose **Annual** or **SemiAnnual**.
 - Day Count:** Choose **Actual/Actual**, **Actual/360**, **Actual/365**, **Actual/365-Japanese**, **Actual/365-ISDA**, or **30/360** as a way to calculate accrued interest: Number of days in the coupon period/Number of days in the year.
 - Settlement:** Choose **Default**, **Next Day**, **Second day**, **Third day**, **Fourth day**, **Fifth day**, or **Other**.
 - Settlement Date:** Editable date when Settlement = Other.

Standard Bill

For bonds with 182 days or less until maturity, the yield, using the Standard Bill model is calculated based on the following formula:

$$\text{Yield} = 100.0 * ((d * A_y) / (A_d - (d * T_{sm})))$$

Where,

$d =$.01 * price (price in this case is the discount rate--the size of the price reduction for a 360-day period).

$A_d =$ Number of days in the year used for quoting discount securities (360).

$A_y =$ Number of days in a year for interest earned (365).

$T_{sm} =$ Days from settlement to maturity.

For a bill with more than 182 days until maturity, the yield is calculated based on the following formula:

$$y_{be} = y_{tm} = 2 \left\{ \frac{-\frac{T_{sm}}{A_y} + \sqrt{\left(\frac{T_{sm}}{A_y}\right)^2 - 2\left(\frac{T_{sm}}{A_y} - 1\right)\left(1 - \frac{F}{P}\right)}}{2\left(\frac{T_{sm}}{A_y}\right) - 1} \right\}$$

Where,

$Y_{be} =$ Bond Equivalent Yield.

$Y_{tm} =$ Yield to Maturity.

$T_{sm} =$ Days from settlement to maturity.

$A_y =$ Number of days in a year for interest earned (365).

$F =$ Face Value.

$P =$ Price.

Simple Bond

The concept of simple yield-to-maturity takes into account the drag to par which occurs if a bond is bought at either a premium or a discount and then held to maturity, at which time it is redeemed at par.

The simple yield on a bond uses the following formula:

$$Y_S = \frac{cF + \frac{R - P}{T_{sm} / 365}}{P}$$

Where,

cF = Annual Coupon (in dollars).

R = Redemptions Value.

P = Clean Price of a bond, i.e. the price paid for the bond without any accrued interest.

T_{sm} = Days from settlement to maturity.

Standard Bond

The standard bond formula is expressed as follows:

$$P = v^{t_{sn}} \left[C \frac{v(v^{N-1} - 1)}{v - 1} + Rv^{N-1} + C_n \right] - AI$$

Where,

- P = Price of the bond.
- v = The annuity variable. $v = (1 + Yw)^{-1}$
- Y_w = Yield to maturity divided by the number of coupons per year.
- t_{sn} = Days from settlement date to the next coupon date.
- C = Coupon payment.
- N = Number of remaining coupon payments.
- R = Redemption value.
- AI = Accrued interest.
- C_n = Next coupon payment.

If there is only one coupon left, the Standard bond model uses the same formula as the Moosmuller method.

Moosmuller

The Moosmuller method, used by the U.S. treasury to determine the price of T-notes and T-bonds, given the yield, is exactly the same as the Standard model, except the Moosmuller method uses money market discounting from the next coupon date back to the settlement date. This difference is seen in the lead factor of the Moosmuller equation shown below:

$$P = \left(\frac{1}{1 + t_{sn} y_w} \right) \left[C \frac{v(v^{N-1} - 1)}{v - 1} + Rv^{N-1} + C_n \right] - AI$$

where

- P = Price of the bond.
- t_{sn} = Days from settlement date to the next coupon date.
- Y_w = Yield to maturity divided by the number of coupons per year.
- C = Coupon payment.
- v = The annuity variable. $v = (1 + Y_w)^{-1}$
- N = Number of remaining coupon payments.
- R = Redemption value.
- C_n = Next coupon payment.
- AI = Accrued interest from the last coupon payment date to the settlement date (as measured by the appropriate day-count convention).

BraessFangmeyer

The BraessFangmeyer method computes prices and yields on an annual basis. Therefore, coupon payments are annual; periodic yields are converted to annual yields before using, and the remaining time to maturity is measured in years.

$$AI_{BF} = C \left[1 - \left(wt_{sm} - \text{int} \left(wt_{sm} \right) \right) \right]$$

where

- AI = Accrued interest from the last coupon payment date to the settlement date (as measured by the appropriate day-count convention).
- C = Coupon payment.
- w = Number of coupon periods per year.
- t_{sm} = Days from settlement to maturity.
- Int = The annuity variable. Int = (1 + Yw)⁽⁻¹⁾

Working with Charts

Entry Field: Entering Symbols, Types, and Intervals

The [entry field](#) is on the bottom left of the chart. Use this field to enter the contract you want to chart and its interval.

- Enter the symbol (**EP**) to chart the current contract.
- Enter the symbol with month and year (**EPZ9**) to chart a specific contract.

If you enter an expired contract, you need to include the two-digit year, e.g. 09.

The symbol can also be a simple spread expression, e.g. EP-ENQ. For sophisticated expressions, it's best to use QFormulas.

You can enter any of these combinations in the entry field:

- symbol (EP)
- symbol with chart interval (EP,5)
- symbol with applied study (EP \RSI)
- symbols with chart interval and study (EP,5 \RSI)
- chart type (\mp)
- symbol with chart type (DD \cvb)
- symbol with chart interval and chart type (DD,30 /mp)
- chart interval (,w)
- study (\rsi)
- reciprocal symbol, lowercase (jy6)

To change the symbol on all open charts at one time, press **CTRL + ENTER** after typing the symbol. If you enter the symbol with a study and press **CTRL + ENTER**, the symbol changes on all open charts and the study is applied to all charts. If a chart already had the study, then the study parameters window opens.

TIP: Create a macro for often-used entries. Go to: **Setup > Customize Toolbar > Macro > Add/Remove > New**. The button is added to the application toolbar at the top of the CQG IC window.

Entering symbols with wildcards

Wildcards are a way to automatically chart the most active, spot, or second month for a contract.

Replace “symbol” with the actual contract symbol.

Shortcut	Opens
symbol?	most active month
symbol?1	spot month
symbol?2	second month out

You can combine wildcards with interval and continuation values, e.g. EP?1,DC.

Wildcards are especially helpful in creating QFormulas for strips that roll over as contracts expire.

Entering symbols with chart type

Shortcut	Opens
\bar	bar chart
\cvb	CVB chart
\cndl	candlestick chart
\line	line chart
\tflow	TFlow chart

Entering symbols with intervals

Replace “symbol” with the actual contract symbol.

Shortcut	Opens
symbol,1	1-min chart (1400-minute maximum display)
symbol,5	5-min chart
symbol,10	10-min chart
symbol,15	15-min chart
symbol,60	60-min chart
symbol,D	daily chart
symbol,W	weekly chart

Shortcut	Opens
symbol,M	monthly chart
symbol,Q	quarterly chart
symbol,S	semiannual chart
symbol,A or Y	annual chart
symbol,WW	weekly historical chart for a single contract, i.e. with no continuation
symbol, MM	monthly historical chart for a single contract, i.e. with no continuation
symbol, QQ	quarterly historical chart for a single contract, i.e. with no continuation

Entering symbols with continuation values

Replace “symbol” with the actual contract symbol.

Shortcut	Opens
symbol,60C	60-min continuation chart
symbol,60CC	60-min continuation chart for specific contract
symbol,A60C	60-min continuation chart, active list
symbol,J60C	60-min continuation chart , adjusted, equalize closes

Shortcut	Opens
symbol,D	By contract
symbol,DC	Standard daily continuation
symbol,DDC	Standard daily continuation by contract
symbol,JDC	Adjusted daily continuation
symbol,JDDC	Adjusted daily continuation by contract
symbol,ADC	Equalized active daily continuation
symbol,ADDC	Equalized active daily continuation by contract

Shortcut	Opens
symbol,WW	By contract
symbol,W	Standard continuation

Shortcut	Opens
symbol,WWC	Standard continuation by week
symbol,JW	Adjusted continuation
symbol,JWWC	Adjusted continuation by week
symbol,AW	Active continuation
symbol,AWWC	Active continuation by week

Shortcut	Opens
symbol,MM	By contract
symbol,M	Standard continuation
symbol,MMC	Standard continuation by month
symbol,JM	Adjusted continuation
symbol,JMMC	Adjusted continuation by month
symbol,AM	Active continuation
symbol,AMMC	Equalized active monthly

Rescaling the chart

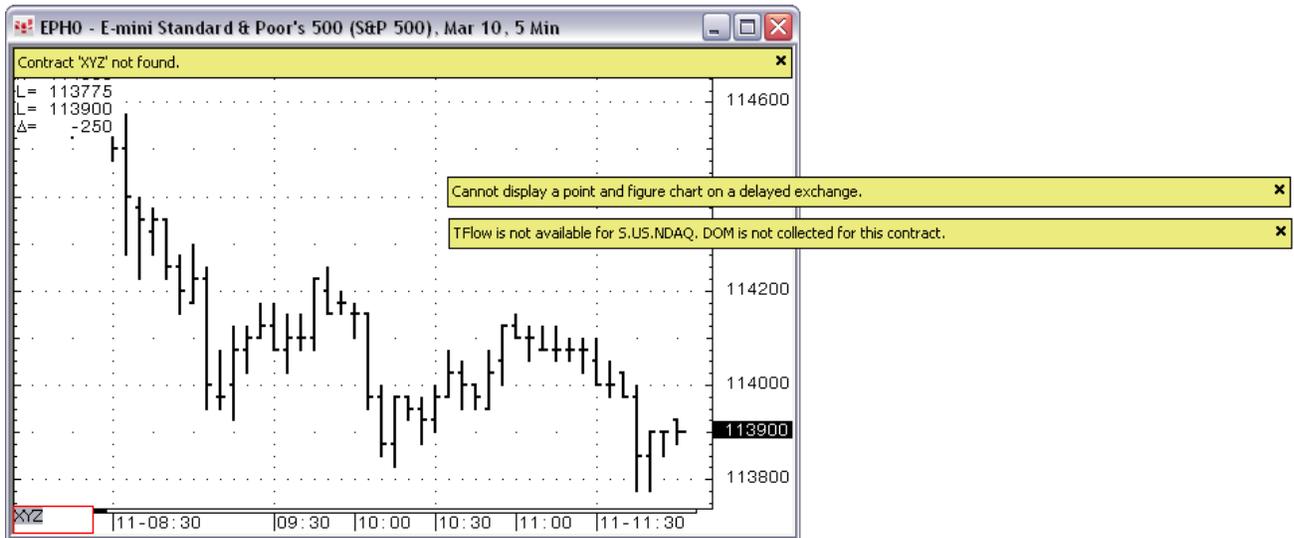
You can use the entry field to rescale the chart.

Shortcut	Action
ENTER	Rescales chart and centers price scale.
CTRL+ENTER	Press CTRL+ENTER without a symbol, and all charts are rescaled.

Embedded Errors

Chart-specific response messages are displayed at the top of the chart window.

To close the message: press **ESC**, click the **X** button, or fix error, e.g. enter a valid symbol.



Keyboard Shortcuts

Shortcut	Action
← → ↑ ↓	Moves active cursor in correspondent direction, and adds a new cursor if one is not present. Corresponds to the scroll buttons.
\study	Adds a study to the chart. Replace "study" with an actual study. Enter \ followed by the study abbreviation, e.g. \RSI.
Ctrl +Alt+D	Opens the Add a Study window.
Ctrl + Alt +G	Opens the Specify Conditions window (on base curve).
Ctrl + Alt +M	Opens the Modify All Study Parameters window.
Ctrl + Alt +Shift+D	Opens the Remove a Study window.
Delete	Removes cursors (horizontal and vertical lines).
Double-click chart	Autoscales the chart according to the current autoscale selection (with or without studies) and centers price scale. Equivalent of ENTER in the entry field.
End	Moves to the current bar.
Enter	Used to rescale the chart. Restores both the Value/Price Scale and the Time Scale to the default spacing and to activate the AutoScale feature. Once the AutoScale feature is activated, the charts automatically scale themselves until a manual scaling command is entered.
Esc	Removes all active pointer tools and changes pointer tool selection to None .
F10	Hides the Daily Value Box, Cursor Value Box, SnapTrader, and Order Book, if displayed. Press F10 again to show the tools again.
F11	When Trade Value Box is displayed, shows/hides Account Picker.
Home	Used to rescale the chart. Restores only the vertical, value/price scale to the default spacing.
Page Up Page Down	Scrolls to the top and bottom of visible curves.
Shift + ↑ Shift + ↓	Adjusts the price scale.
Shift + ← Shift + →	Adjusts the time scale.

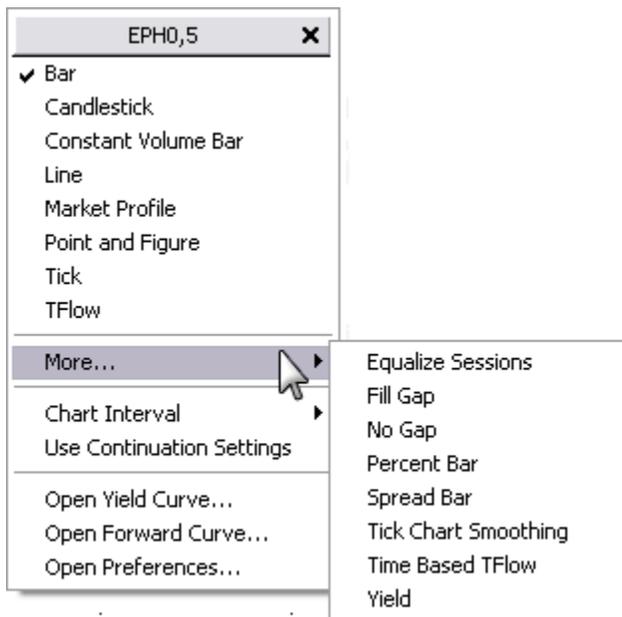
Changing the Chart Type, Interval, and Symbol

There are several ways to change the type, interval, and contract:

- [Entry field](#)
- [Chart buttons](#)
- [Right-click menus](#)

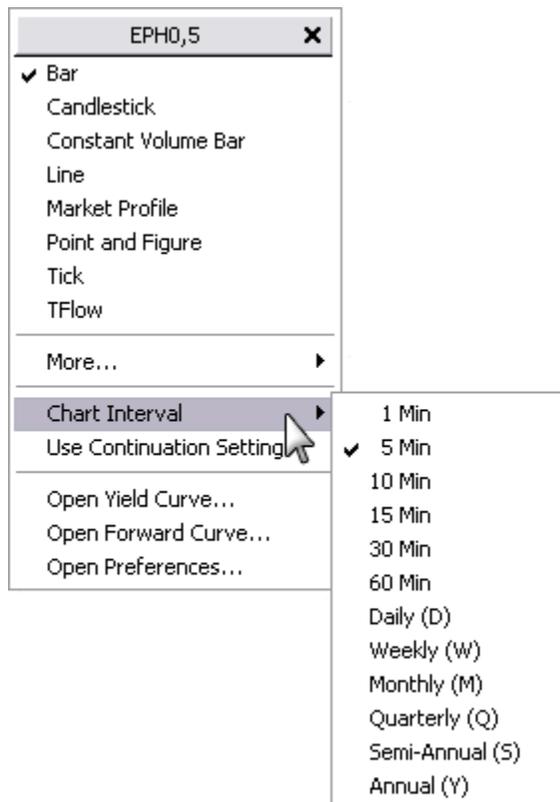
To change the chart type

1. Right-click the chart's title bar.
2. Click the chart type, or point to **More** and then click the chart type.



To change the chart interval

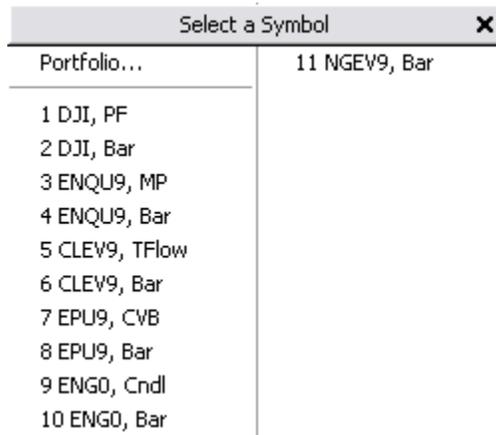
1. Right-click the chart's title bar.
2. Point to **Chart Interval**.
3. Click the interval.



To change the symbol

Type a symbol in the entry field.

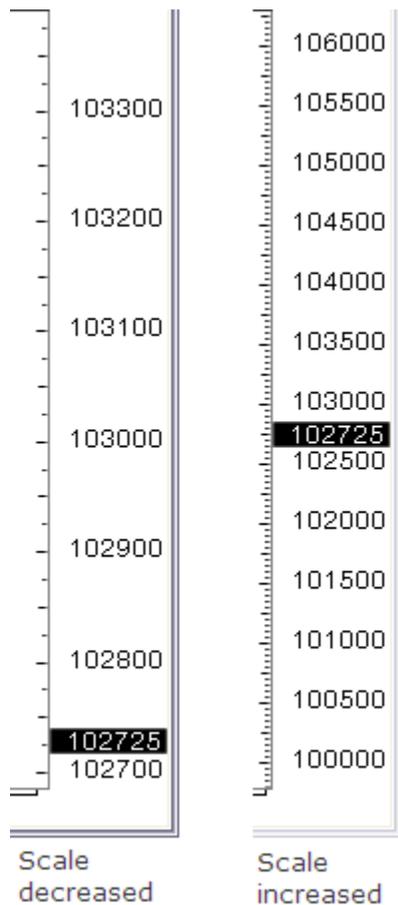
You can also right-click the entry field to select from a portfolio or to see most recently used symbols and their chart types.



To change the symbol and interval at the same time, it's best to [type both](#) directly in the entry field.

Price Scale

Click and drag the price scale to expand the number of prices shown. Dragging up decreases the scale, while dragging down increases the scale.



In this image, the price scale is to the right on the chart and labels are shown. The label is indicated by the black background.

You can change the price scale using its right-click menu.

To hide the labels, right-click the price scale, then click **Hide All Labels**.

To move the price scale

This option moves the price scale to the left or right of the chart.

1. Right-click the price scale.
2. Click **Place Scale to Left** or **Place Scale to Right**.

To share grids between charts

Used with overlaid charts in auto scale mode. When selected, verticals scales on overlaid charts line up, so that major demarcations are directly across from each other.

1. Right-click the price scale.
2. Click **Share Grids**.

To share the same scale between charts

Used with overlaid charts. When selected, the same scale is used for both charts. If not selected, the scale for the foreground chart is used, and the background chart is laced on top of it.

1. Right-click the price scale.
2. Click **Same Scale**.

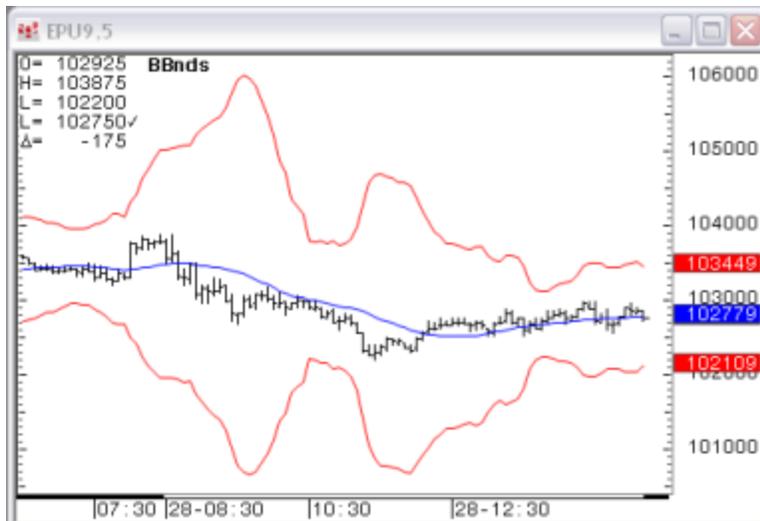
To automatically scale with and without studies

Rescaling allows the system to fit the chart and associated studies and conditions in the space available on the chart window. It ensures, by rescaling, that as the market changes, all bars, conditions, and study values are displayed in the window.

If you opt to rescale without study, it fits the chart in the space available while ignoring studies. In this way, the view of bars is optimized even if that means studies are not visible in the chart window.

1. Right-click the price scale.
2. Click **Auto Scale** or **Auto Scale without Studies** (only present when study is applied to chart).

Notice in this image that the bottom chart has the display of the bars optimized:



Auto scale



Auto scale without studies

This option applies only to the chart selected.

To use logarithmic or linear scale

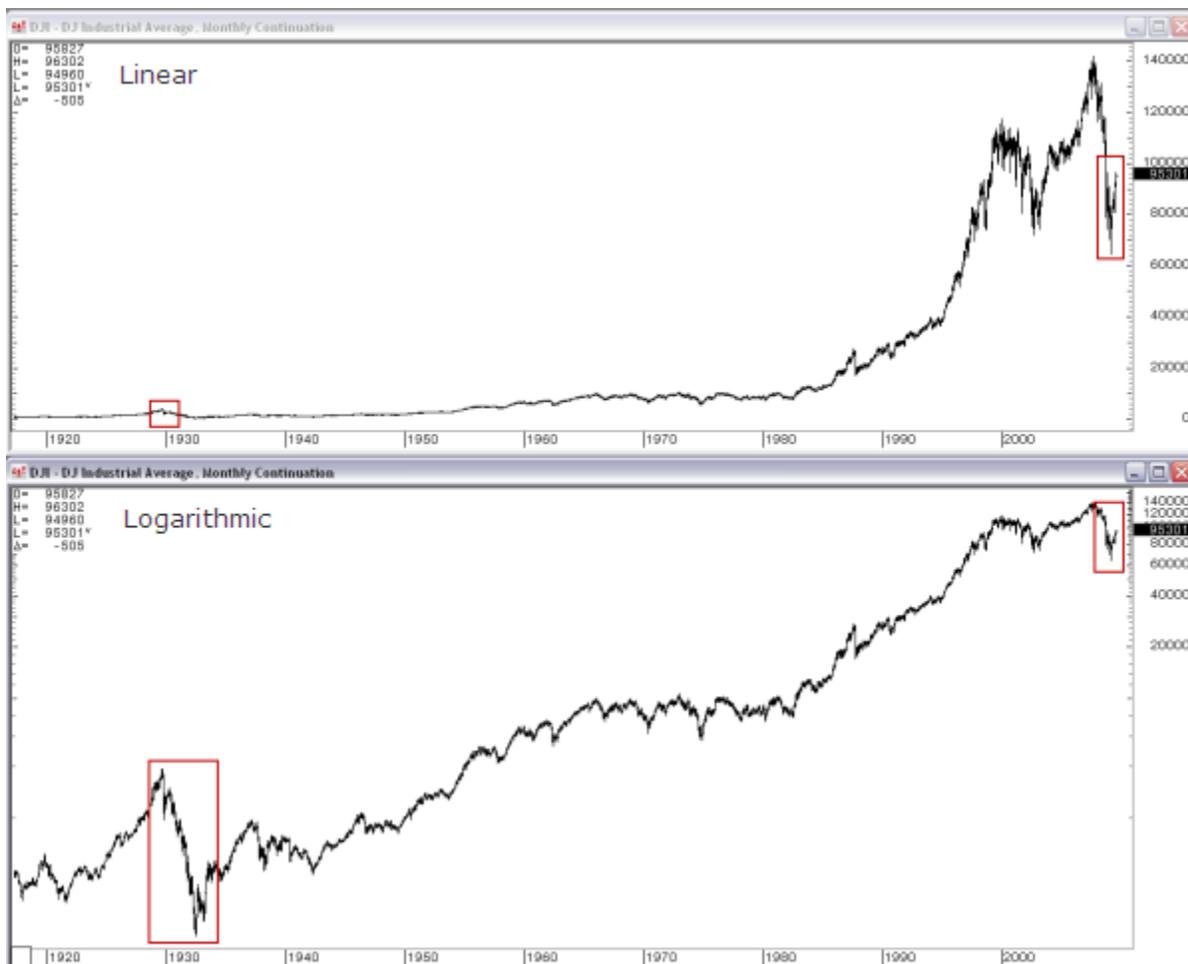
This scale applies to daily or historical charts only.

1. Right-click the price scale.
2. Point to **Scale Type**.
3. Click **Log** or **Linear**.

Log is a mathematical treatment; a change in the logarithm of a variable is approximately its percentage change. The Y-axis of a linear chart arranges prices equidistantly. A change of \$2 is indicated in equal increments every time there's a \$2 change. With a log chart, that equal price distribution is no longer the case. Instead, the Y-axis of a log chart distributes prices according to percentage change. A \$2 change may be 10% at one time and only 1% another time. Log charts expose that relationship.

Log charts are an effective way to look at the history of a symbol. It might also be a beneficial way to look at contracts with a lot of price movement.

Notice in this image that a logarithmic view provides a clearer picture to compare the DJI c. 1929-1930 with now:



To flip the price scale

This menu option is shown only by enablement. Sorts prices in ascending order rather than descending.

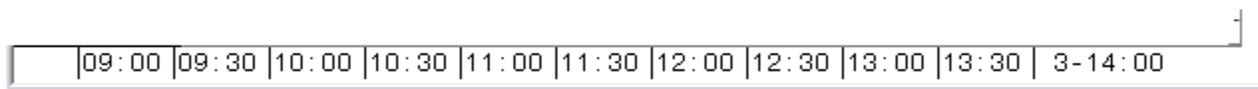
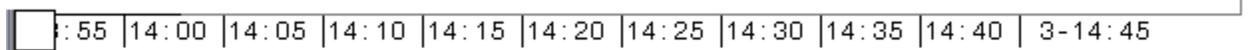
1. Right-click the price scale.
2. Click **Flip**.

Flipping the scale works with any expression that includes an inverse relationship, such as currencies, bonds, and spreads.

Time Scale

Click and drag the price scale to the right to shorten the time intervals and to the left to lengthen the time intervals.

Scale at 5-min intervals



Scale at 30-min intervals

You can change the time scale using its right-click menu.

To scroll the chart

Click and drag the chart to move back and forward on the chart without moving the time scale.

When the data displayed in the rightmost position on the chart is not the most current data, a red warning arrow appears in the lower-right corner of the chart:



This arrow also appears when an expired contract is displayed.

An arrow pointing to the left indicates that the data displayed is the most current but is not in the rightmost position in the chart.



Click the arrows to go to the current data.

To use fine scrolling

Fine scrolling allows you to scroll a chart horizontally one bar at a time using the left and right arrow buttons or vertically by the minimum price change using the up and down arrow buttons. To turn this preference on:

1. Click the **Setup** button.
2. Click **Chart Preferences**.
3. Click the **Misc** tab.
4. Select **Fine Scrolling Using Toolbar Buttons**.

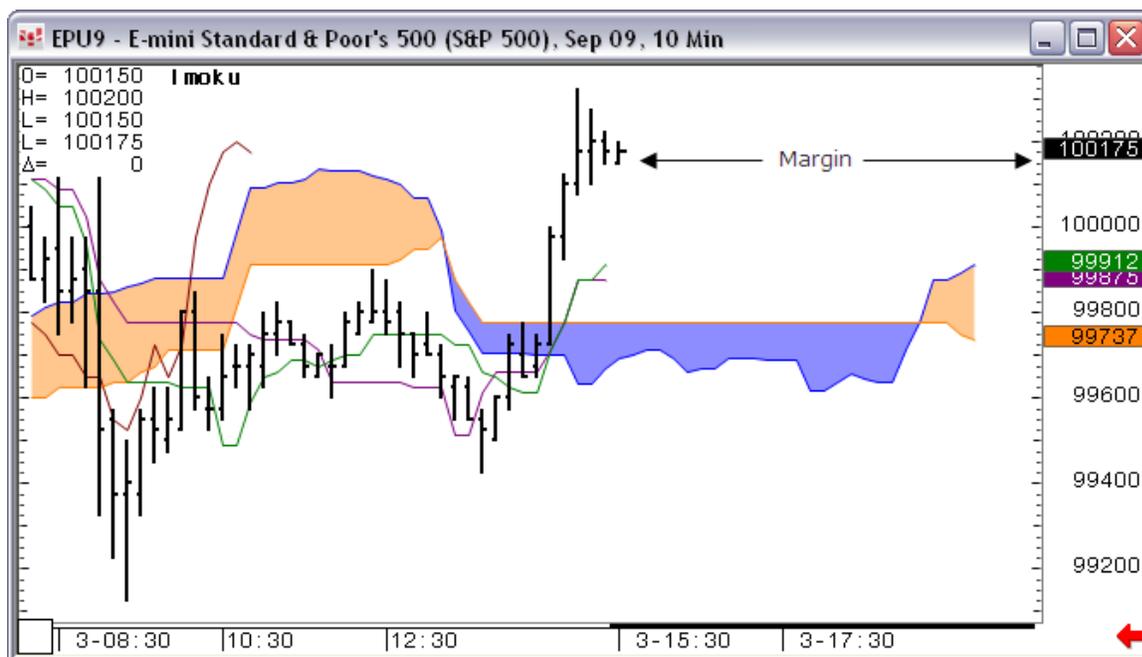
To go to a different date

This option changes the display, so the selected date is the rightmost bar.

1. Right-click the time scale.
2. Click **Go To Date**.
3. Click the drop-down arrow to open the calendar.
4. Click the date you want to close the calendar.
5. Click **OK**.

To maintain right margins

This option is helpful when used with charts with studies that show values in the future, such as Imoku.



1. Drag the bars to the left to create a margin.
2. Right-click the time scale.
3. Click **Maintain Right Margins**. As the chart moves, bars are drawn as the border of your margin, and not at the right side of chart as typical.

To set default spacing

1. Move the chart to your desired time scale spacing.
2. Right-click the time scale.
3. Click **Set Default Spacing**. The menu item is checked and is used as the default going forward.

To revert to default spacing

1. Right-click the time scale.
2. Click **Revert to Default Spacing**.

To maximize compression

This option compresses the time scale, so that you can see the maximum amount of history that your resolution allows.

1. Right-click the time scale.
2. Click **Max Compression**.

You can use the **Revert to Default Spacing** to change from maximum compression mode.

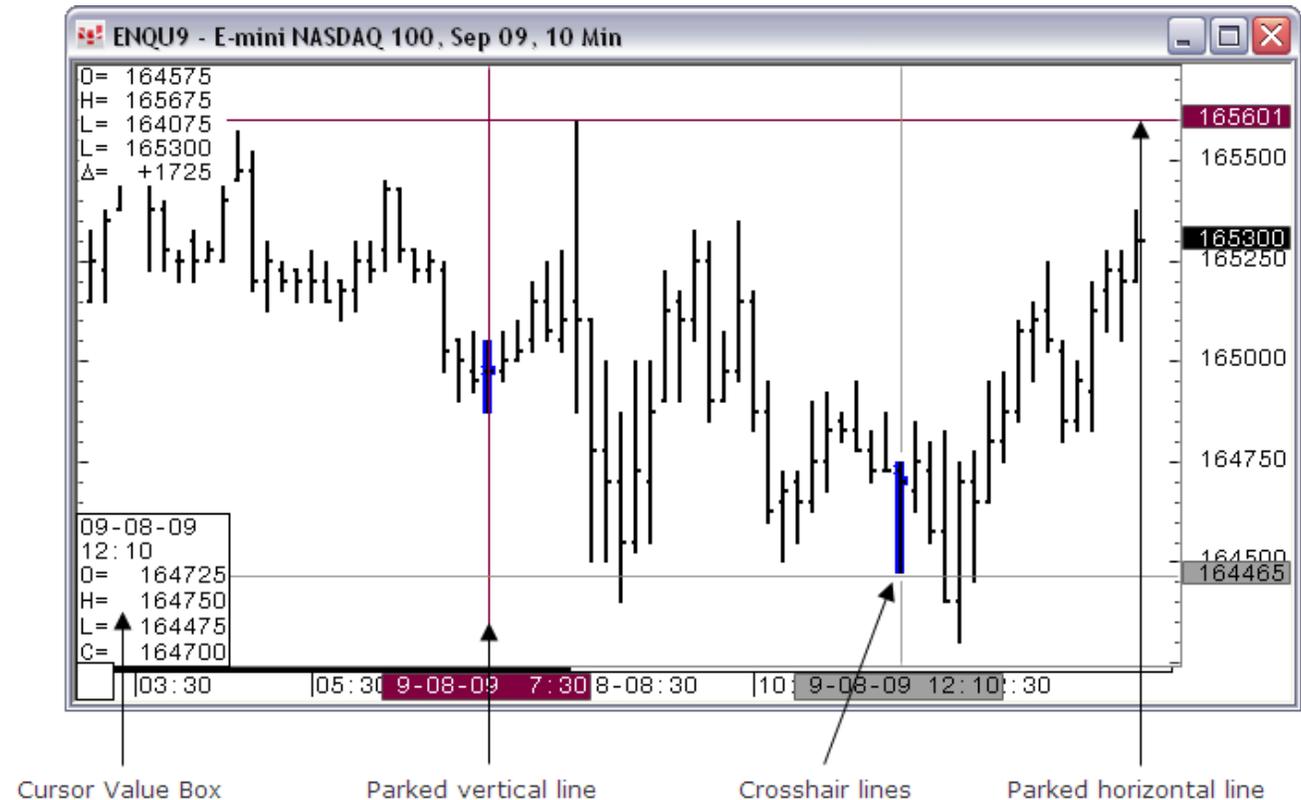
To flip the scale

This menu option is shown only by enablement. Sorts dates in descending order rather than ascending.

1. Right-click the time scale.
2. Click **Flip**.

Adding Lines (Cursors) to Charts

You can place three types of lines (also referred to as cursors) on a chart: vertical, horizontal, and crosshair. The cursor value box values correspond to the selected vertical line. Global cursors allow you to link lines on separate charts.

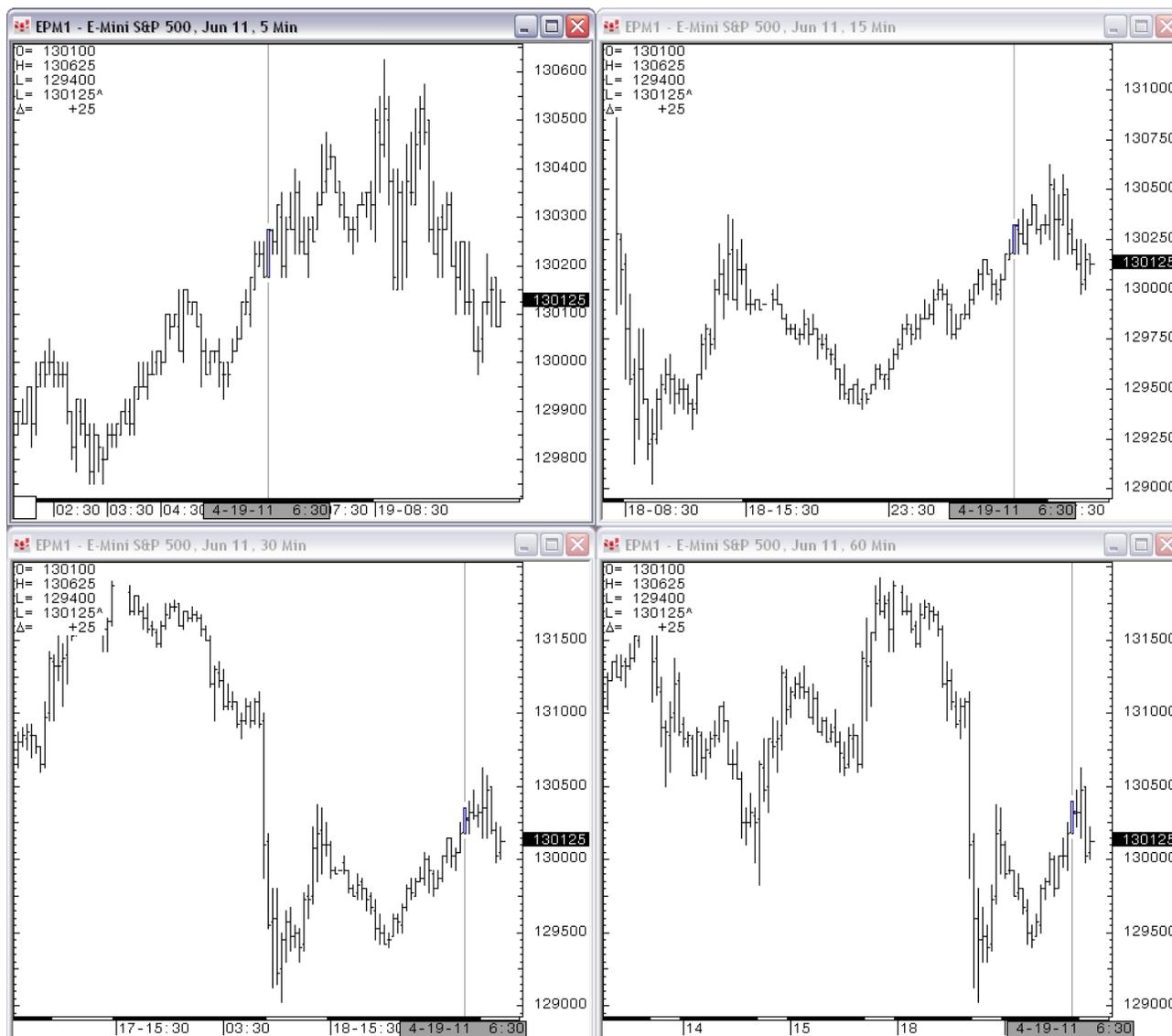


- To add a vertical or horizontal line, click the time scale or the price scale to activate a line on the chart. Move the mouse to the desired line position, and click to park the line.
- To add crosshairs, activate both the horizontal and vertical lines, and then click to park them together.
- To move a line, click on it to activate it. Before it's parked, you can remove it by right-clicking.
- To remove a parked line, right-click either the line or the scale label, and then click **Remove**. To remove all lines at one time, right-click the scale label, and then click **Remove All**.

You can also use [VertL](#) and [HorzL](#) pointer tools.

To use global cursors

This option, typically used with charts of the same contract with different chart intervals, links the horizontal cursors (lines) on two or more charts, so that moving the cursor on one chart, moves the cursor to the same time on the other chart(s). In this image, there are four EP charts at different intervals with a global cursor at 6:30.



1. With more than one chart open, right-click the time scale of a chart.
2. Click **Global Cursors**. The menu item is checked, and cursors are shown on the charts.
3. Notice that as you move the cursor on the first chart, the cursor on the linked chart(s) moves also.
4. To park all of the cursors, hold down the **CTRL** key and click.

To remove all of the cursors, hold down the **CTRL** key and right-click. Then, click **Remove Linked Vertical Lines**.

Changing the appearance of lines

To change the color, thickness (weight), and type of line:

1. Right-click the vertical or horizontal line.
2. Click **Modify**.

You can also click **Set Color** to open color selection directly.

To change the cursor location on the scale:

1. Right-click the vertical or horizontal line.
2. Click **Modify**.

The **Time** field applies to the vertical line. The **Value** field applies to the horizontal line.

To show and hide the label on price scale:

1. Right-click the horizontal line.
2. Click **Show/Hide Label on Scale**.

You can also use the **ScaleLabel** parameter or right-click the label itself to open another menu.

To move or hide the Cursor Value Box

The Cursor Value Box is located in the lower-left corner of the chart window by default. The open, high, low, and close prices in that box correspond to the active horizontal line (cursor) values.

03-02-11
12:50
O= 130625
H= 130675
L= 130600
C= 130650

- Click and drag the cursor value box to move it.
- To move the box back to its default location, right-click it, and select **Move To Default Position**.

You can choose to have the Cursor Value Box always displayed, displayed only with a vertical cursor, and never displayed (hidden). Right-click the box to display those options. When associated with a vertical cursor, the Cursor Value Box displays bar data.

To set Price X Line alerts

1. Add a horizontal line to the chart.
2. Right-click that line.
3. Click **Add Price X Line Alert on Horizontal Line**. The Price X Line Alerts window opens with the alert selected.
4. Make any desired changes to the alert.
5. Close the Price X Line Alerts window.

Overlaying Charts (Analog)

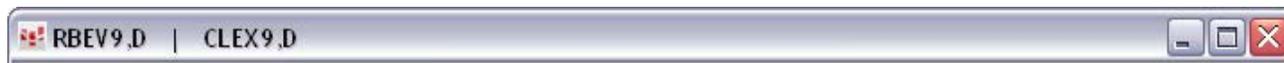
Overlaying charts is helpful for comparisons of contracts, e.g. seasonals. Overlaying charts allows you to clearly see relationships, such as whether crude turns down every July.

To overlay charts

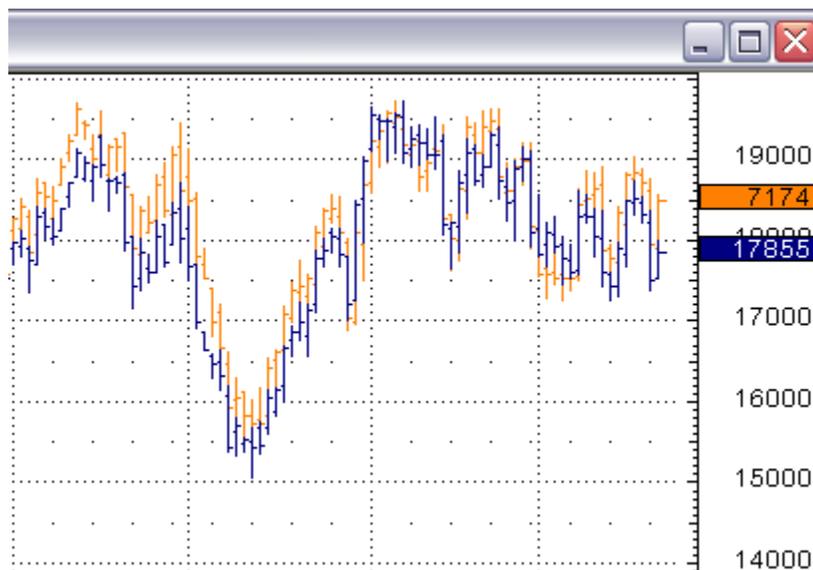
1. Open a daily chart.
2. **ENTER** to make sure the chart is scaled according to the default. That way, the overlay will be appropriately scaled.
3. Add the **Chart Analog Overlay** [study](#). Notice the title bar has two symbols (the same symbol at this point).



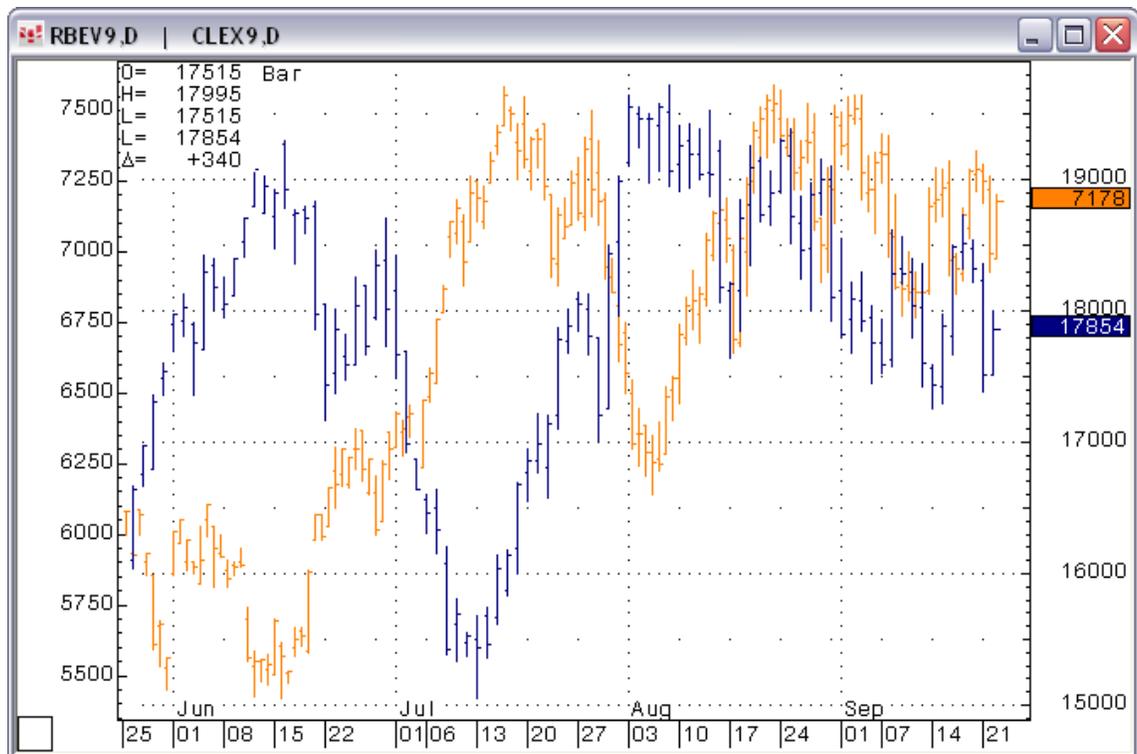
4. Enter a second symbol. The top chart takes that symbol, and the title bar names both symbols. In this case, RBE = top, CLE = bottom.



5. Modify the bars to create a contrast between the bar colors. CLE = orange, RBE = blue.



6. Right-click the price scale, and click **Place Scale to Left** to add a price scale for the bottom chart to the other side of the chart. RBE scale = right, CLE scale = left.



Note that if the contracts have a different digit handle (e.g. CLE has 1 and RBE has 2), then they cannot share the scale and will instead have a floating scale.

Other Chart Overlay Actions

- To scale and scroll both charts simultaneously, click the [Analog button](#) on the chart toolbar.
- To move the top chart, click and drag it.
- To bring the bottom chart to the top, right-click the bar of the bottom chart, and then click **Bring To Foreground**. You can also click **Send to Background** for the top chart.
- To chart both symbols on the same price scale, right-click the price scale, and then click **Same Scale**.



- Notice in the chart image that while the RBE prices fall on the grid in whole numbers, the CLE prices do not. Right-click the bar, and then click **Share Grids**, so that whole numbers fall on the grid for both charts.



Saving Bar Data Locally (Disk Cache)

If you often build the same bars, you can build them much faster by saving bar data in a local disk cache file. While you're using CQG, bar data is saved in memory. When CQG IC closes, bars stored in memory are moved to the disk cache.

CQG IC saves data for:

- non-regular bars - TFlow, CVB, Tick, Point and Figure, and No Gap
- regular bars - intraday and historical for a single contract
- regular and non-regular bars for synthetic spread contracts
- regular and non-regular continuation bars
- regular and non-regular bars for inverted contracts
- regular bars for expired contracts
- regular bars for delayed contracts

You decide how much data to save and where to save it.

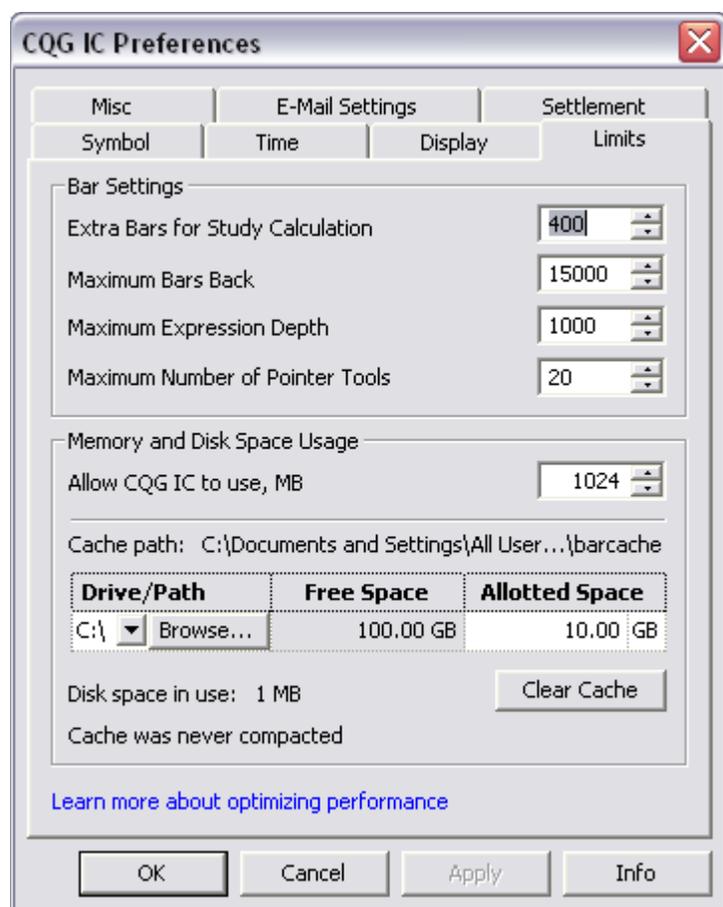
Bar data is not included in the import or export of components and pacs.

Please note that bar data is deleted if CQG IC is uninstalled or if you change versions.

This feature requires an enablement.

To set disk cache parameters

These parameters tell the system where to save the disk cache and how much to dedicate to it.



1. Click the **Setup** button.
2. Click **System Preferences**.
3. Click the Browse button to select a location for the disk bar cache. The default is C:\Documents and Settings\All Users\Documents\CQGNNet\temp\barcache.
4. Type a number for the maximum size you want to allot to the disk cache.

This number is limited by the total available virtual memory. The default is either 10240 MB or 25% of available disk space, whichever is smaller. The minimum is 500 MB.

If the maximum size of the bar cache is exceeded, then 10% is deleted from the most unused bars.

To clear the disk cache

You can clear the disk cache in two ways:

1. Click the **Setup** button.
2. Click **System Preferences**.
3. On the **Limits** tab, click the **Clear Cache** button.

and

1. Click the **System** button.
2. Point to **Data**, then **Clear Data**.
3. Click **Disk Bar Cache**.

When you clear the data, the system deletes all bars from both the memory and disk bar cache and refreshes any open windows.

Please note that the **Refresh** and **RefrWnd** buttons remove data only in the memory cache. Only data in the memory cache is saved to the disk bar cache.

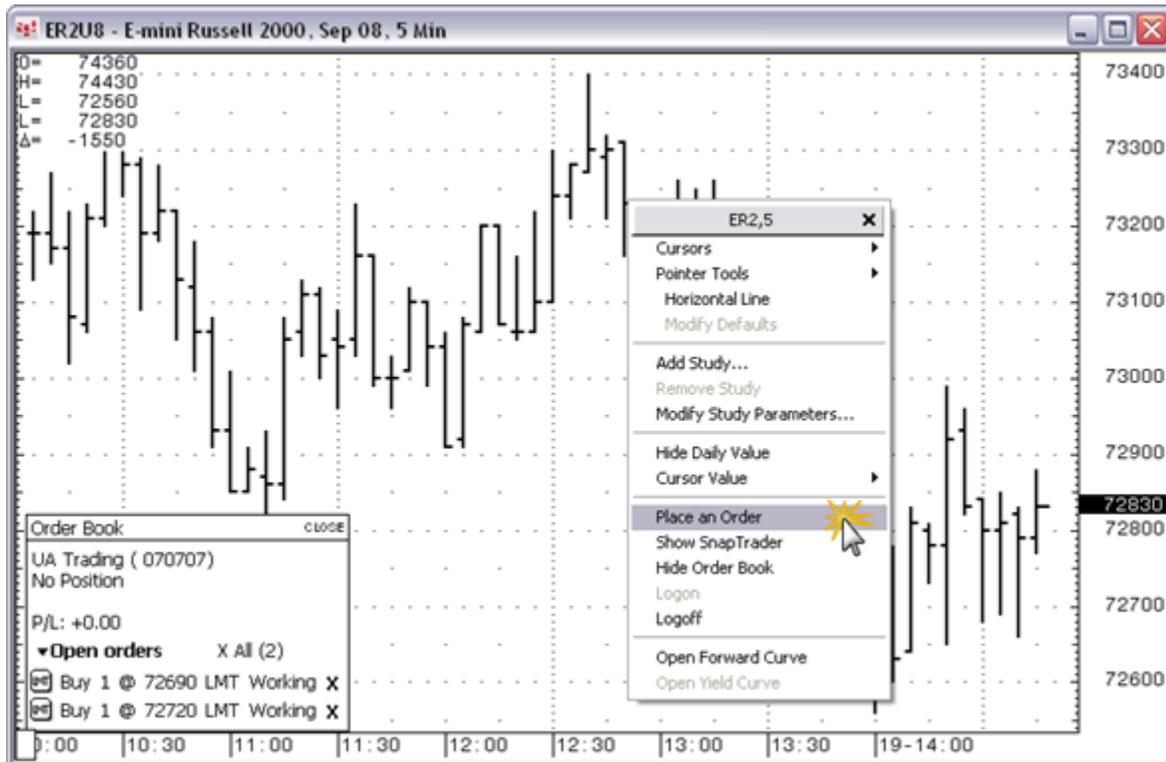
Trading on a Chart

CQG offers the convenience of trading from a chart. You can add the [SnapTrader](#) tool to the chart and trade directly from it, or you can [open a trading application](#) from the chart to trade alongside the chart display.

CQG IC trading is detailed in the [trading user guide](#).

To open a trading application

Right-click the chart, and select **Place an Order**. Your preferred trading application, which is selected in **System Preferences**, will open.



Order Book

The Order Book displays your account, position, OTE & P/L, and open orders.

Order Book	CLOSE
UA Trading (070707) Long 21 @ 128750 P/L: +600750.00 OTE+P/L: 23625.00 No open orders X All (0)	Order Book CLOSE UA Trading (070707) No Position P/L: +0.00 ▼Open orders X All (2) <input type="checkbox"/> Buy 1 @ 72690 LMT Working X <input type="checkbox"/> Buy 1 @ 72720 LMT Working X

To display the Order Book on a chart, right-click the chart, and select **Show Order Book**.

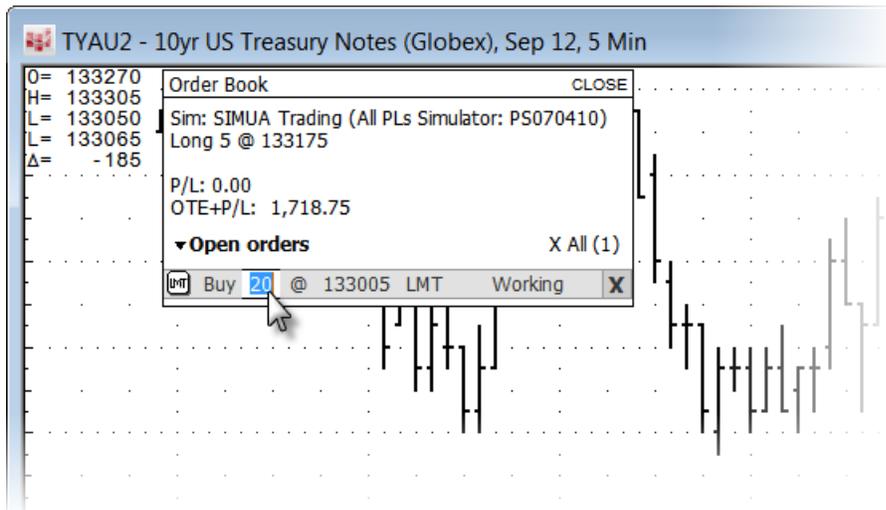
To cancel orders from the Order Book

To cancel all orders, click the **XAll** button.

Order Book	CLOSE
UA Trading (070707) No Position P/L: +0.00 ▼Open orders	<div style="text-align: right; border: 1px solid gray; padding: 2px;">X All (2)</div> <input type="checkbox"/> Buy 1 @ 72690 LMT Working X <input type="checkbox"/> Buy 1 @ 72720 LMT Working X

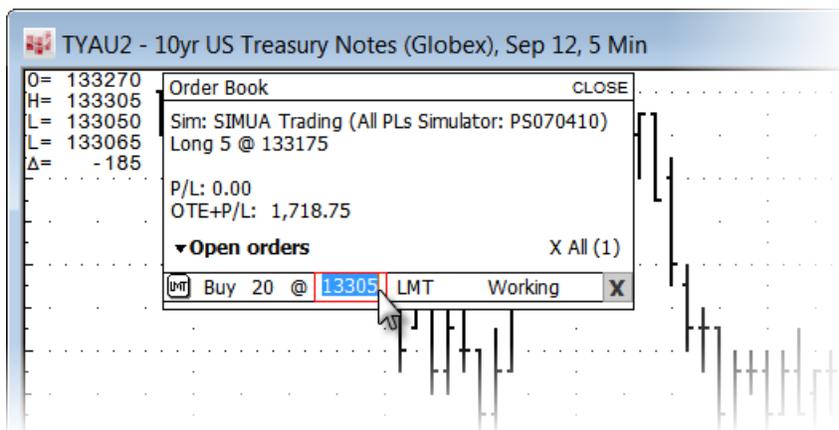
To cancel a single order, click the **X** button near the order details.

To change the order quantity on the Order Book



1. Click the size in the working orders area of the Order Book. Notice that the quantity is highlighted in blue.
2. Type a new quantity. You can also use the mouse wheel to scroll quantities.
3. **ENTER** or click outside of the field.

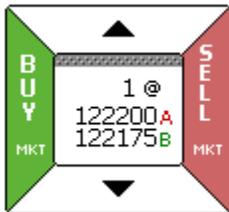
To change order price on the Order Book



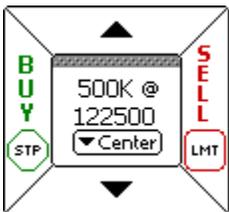
1. Click the price in the working orders area of the Order Book. Notice that the price is highlighted in blue.
2. Type a new price. You can also use the mouse wheel to scroll prices.
3. **ENTER** or click outside of the field.

Trading on a Chart with SnapTrader

SnapTrader is an easy-to-use, chart-based trading tool. SnapTrader opens with market orders selected and displays the current bid and ask, like this:



This image shows the SnapTrader centered, that is, displaying the current bid and ask. If the SnapTrader is currently displaying a price other than the current bid and ask, it includes the Center button beneath the price, like this:



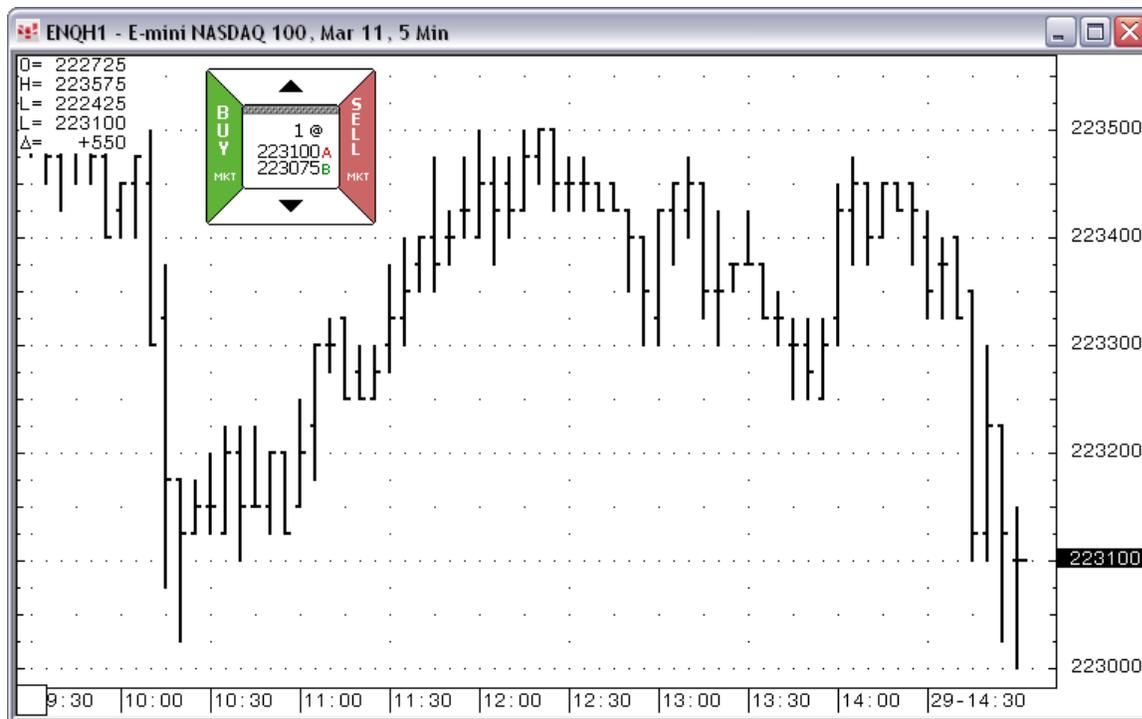
You can move SnapTrader to another location on the chart by dragging the gray, dotted bar that is below the black up arrow.

SnapTrader supports variable tick size data received from exchanges.

Note: If you open SnapTrader and no other trading application is open, then the system uses the account last used with SnapTrader. If you open SnapTrader and another trading application is open, then the system uses the account from the open trading application. This behavior is standard among all trading applications.

To open SnapTrader

To open SnapTrader, click the **SnapTrader** button on the chart toolbar. The SnapTrader is displayed on the chart like this:



You can also right-click the chart and select **Show SnapTrader**.

To add the **SnapTrader** button to the chart toolbar:

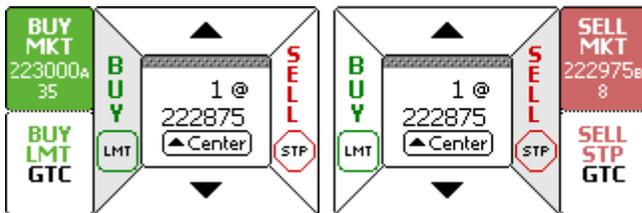
1. Click the **Setup** button.
2. Select **Customize Toolbar**. This displays the Toolbar Manager window.
3. Click the >>> button in the **Add/Remove** column in the **Chart Control** row.
4. Click **SnapTrader** in the button column.
5. Click the **Close** buttons on the Customize Application Toolbar and Toolbar Manager windows.

If you do not have a chart open, click the **Trade** button on the main toolbar, and then click **SnapTrader**.

To place a market order

Click  or  to place a market order.

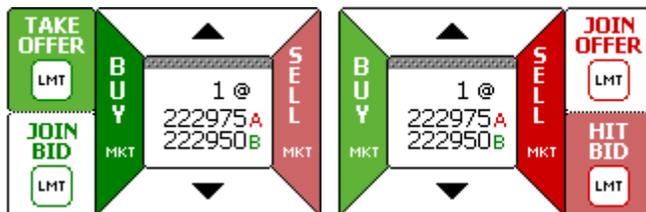
You can also place a market order by hovering the mouse over the **Buy** or **Sell** button and clicking the **MKT** button when you're in stop or limit mode:



To place a limit day order

In market mode (centered)

Hover the mouse over the **Buy** or **Sell** button to display limit order options, and click one of the take, join, or hit buttons.



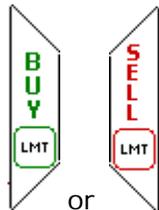
JOIN OFFER = limit at ask

JOIN BID = limit at ask

HIT BID = limit at bid

LIFT OFFER = limit at bid

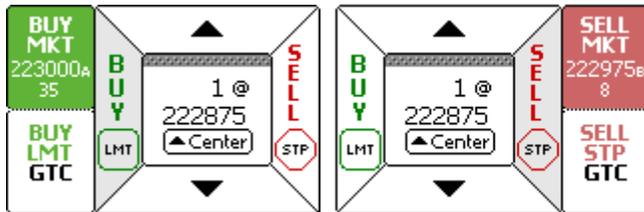
In limit mode (not centered)



Go to the desired limit price, and click

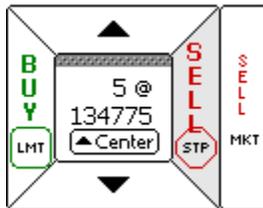
To place a limit GTC order

Go to the desired limit price, hover the mouse over the **Buy** or **Sell** button, and click the **GTC** button.



To place a stop order

Click the black arrows up or down to establish a stop price. The **Buy** and **Sell** buttons change accordingly, like this sell button:



Click the appropriate stop button, such as

If the price is below the current best bid, the buy side will be a limit order and the sell side will be a stop order. If the price line is above the current best offer, then the buy side will be a stop order and the sell side will be a limit order.

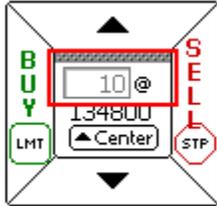
When you click the arrows, a horizontal price line on the chart moves with them. The price on SnapTrader corresponds to the price indicated by that line.

To return to current best bid and ask

Click the  button.

To change the quantity

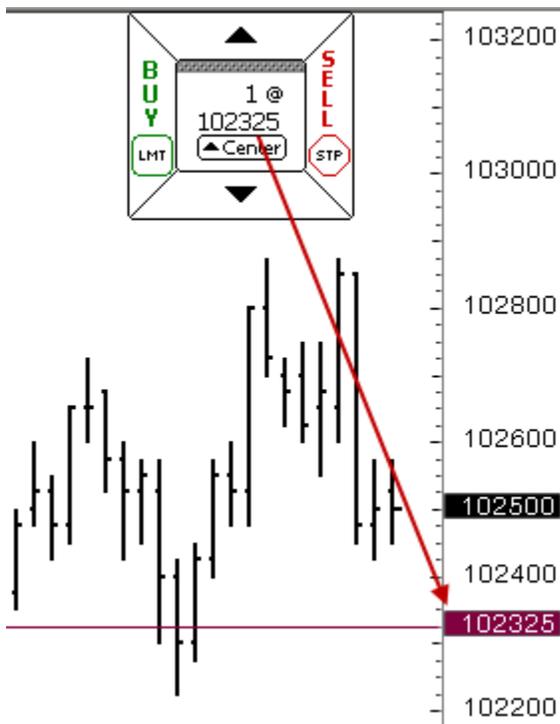
1. Click the quantity field. Notice that the field becomes active:



2. Enter the new size for the order.
3. **ENTER.**

To change the limit price

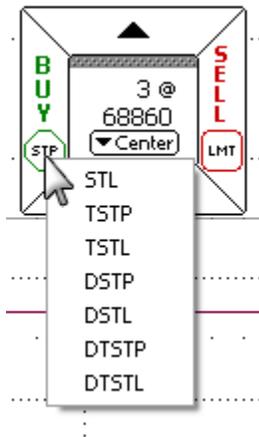
Add a horizontal line at the price you want to trade, like this:



Once you place an order at that price, the SnapTrader re-centers.

To change the stop or limit type

Right-click the **LMT** or **STP** button, then click the type.



To set SnapTrader trading preferences

Setting preferences for SnapTrader trading is the same as it is for other trading interfaces. Click the **Setup** button, and then click **Trading Preferences**.

Trading on a Chart with Studies

You can enter an order based on study values, a Study Following Order, directly from the chart.

A Study Following Order is a DAY limit, stop, stop limit, DOM-triggered stop, DOM-triggered stop limit, or iceberg order that follows the corresponding study value. OCO and bracket orders are allowed. Trailing and parked orders are not valid.

You can place an order at the value or as an offset. The system automatically modifies the order price based on the study; it will continue to do so when partially filled.

If a study has a custom session, the study following order will be cancelled automatically when the session ends.

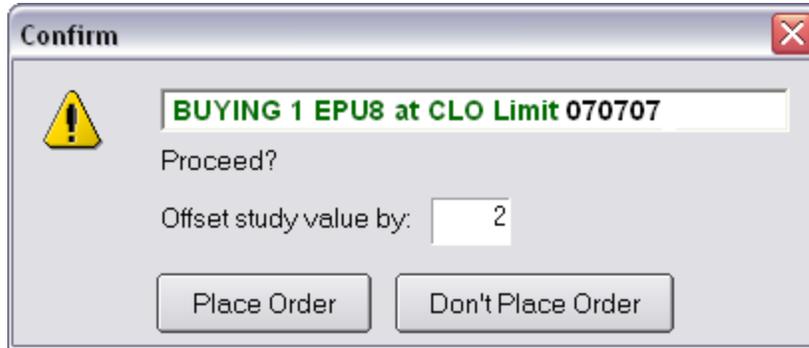
Placing these orders requires an enablement. The order book or Snap Trader must be displayed to activate the place order menu option.

To place an order

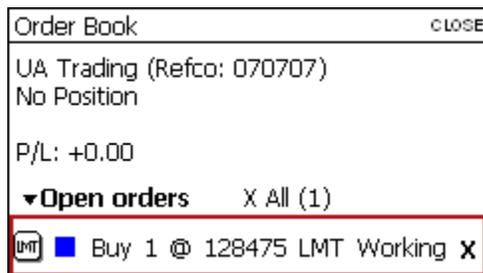
1. Right-click the price label for the study, and click **Place order following [study] curve value**.
2. Click the type of order you wish to place.



If you choose an order type that includes an offset, you will be prompted to enter the offset value:



Study Following Orders will be displayed in the Order Book, like this:



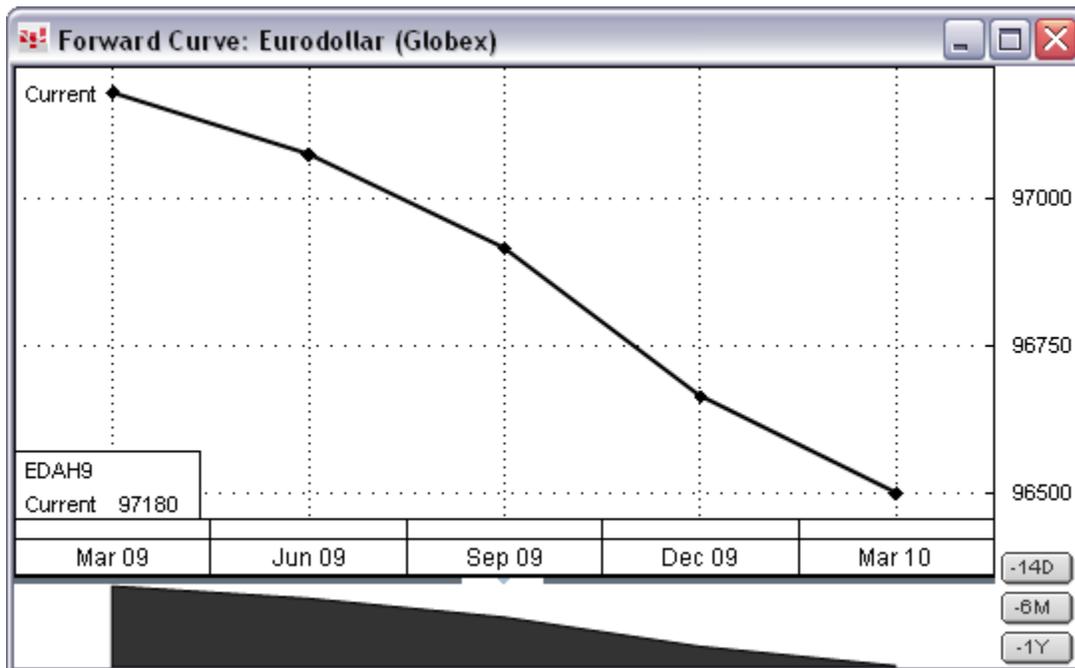
Forward and Yield Curves

The Forward Curve and Yield Curve windows, opened from a chart, both display the curve for a market.

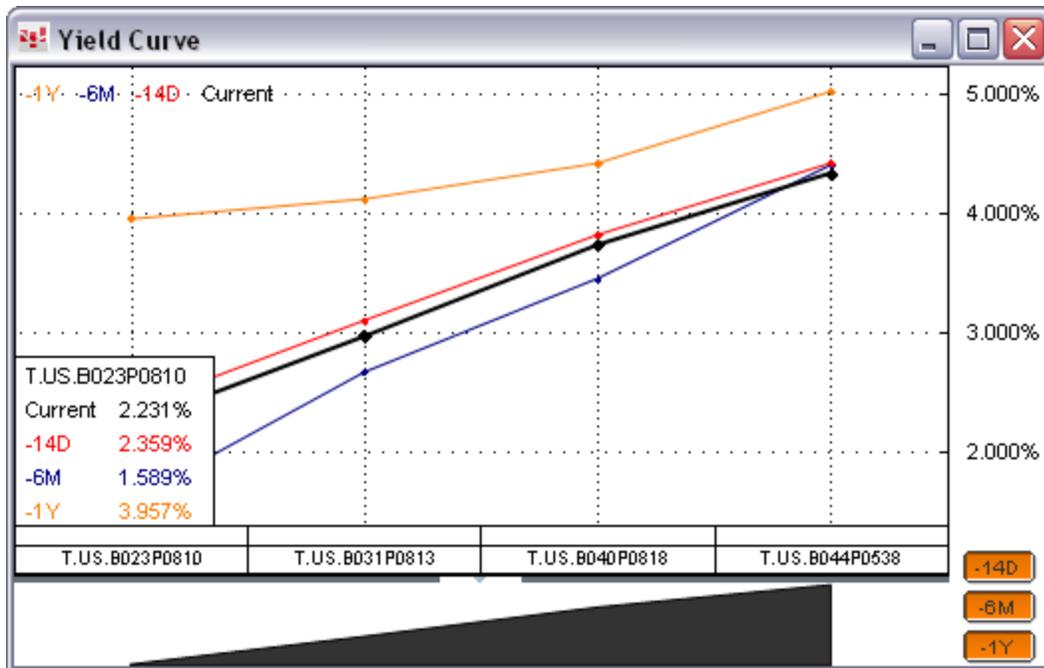
The forward curve charts all symbols, and the yield curve charts the yield of fixed income instruments fixed income price symbols.

The forward curve is plotted for both expired and non-expired symbols using the price of the instrument. The forward curve is updated real-time for those markets trading. The yield curve displays the yield for the fixed income instruments and is updated using real-time data.

The Forward Curve window lists the instruments along the x-axis and the prices on the y-axis. A histogram is displayed at the bottom of the window.



The Yield Curve window lists the instruments along the x-axis and the percentages on the y-axis. A histogram is displayed on this window too.



Both the forward and yield curve windows include three buttons on the bottom right corner for [adding additional curves](#), as seen in the Yield Curve window picture.

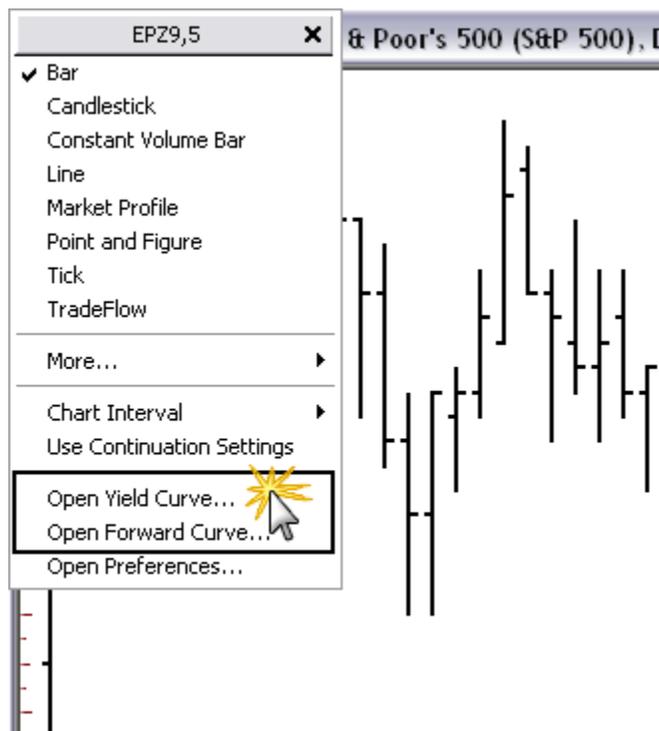
The curves are automatically linked to the chart.

Opening the Forward Curve or Yield Curve window

Yield charts require fixed income price symbols. The Yield Curve chart cannot plot a yield from a yield symbol.

Forward curves can plot yield symbols or price symbols. For example, LIBOR rates can be plotted in the Forward Curve chart, but not the Yield Curve chart.

1. Right-click the chart title bar.
2. Click **Open Forward Curve** or **Open Yield Curve**.



If there are vertical lines or vertical cursors on the chart, the corresponding curves will be shown in the curve window. Those curves are linked to the lines and cursors on the chart.

If the chart does not have vertical lines or vertical cursors, then a Curve Module tooltip is displayed on the chart when you open the forward or yield curve.

Curve Module

Park vertical cursors on this chart to plot reference curves in the curve module

Please note that vertical lines and vertical cursors will change color when a curve is opened and stay that way even when the curve is closed.

Before opening the curve



After opening the curve



The Curve Toolbar

The toolbar for forward and yield curves contains these buttons:

Forward button

This button changes a yield curve to a forward curve.

Yield button

This button changes a forward curve to a yield curve.

B/A button

This button changes the price calculation to last bid or ask.

If you choose to build the current curve based upon the last ask or bid prices, then these values are used for those points of the curve where the corresponding contracts are not expired and have dependable quotes with size.

For the other points of the curve, last close prices are used instead.

Mid B/A button

This button changes the price calculation to the midpoint of the last bid or ask.

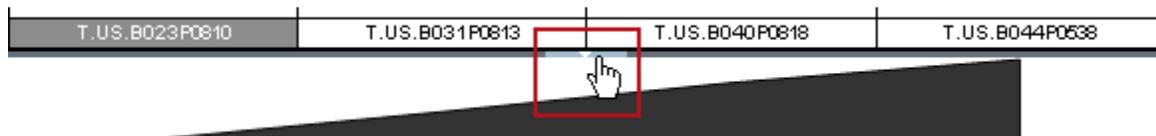
If you choose to build the current curve based upon these midpoints, then these values are used for those points of the curve where the corresponding contracts are not expired and have dependable quotes with size.

For the other points of the curve, last close prices are used instead.

Working with the Curve Chart

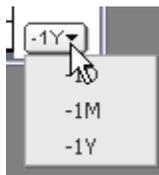
There are several ways to navigate the curve charts.

To hide the histogram



Click the arrow button between the instruments and the histogram. Notice that when you hover your mouse over the button, the cursor changes and the button is blue.

When you hide the histogram, the [additional curve buttons](#) become a drop down list.



To see instruments not displayed in the window



When you have a long list of instruments, that list may be truncated due to the size of the window. To move along the list of instruments:

1. Hover the mouse over the histogram, so that the cursor becomes a hand.
2. Click and drag to move along the instrument list.

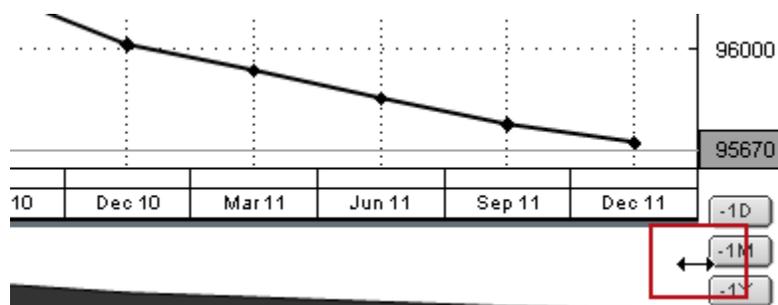
To move up and down a curve

1. Hover the mouse over the curve.
2. Click and drag the cursor, which becomes a hand, to move up and down the curve.

To move across the instruments

1. Click an instrument to highlight it.
2. Use the left and right arrow buttons on your keyboard to move to other instruments.

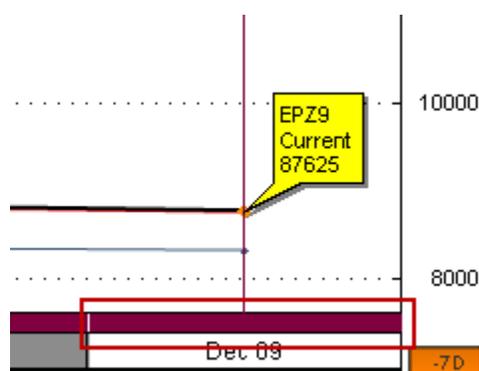
To zoom in and out



By reducing the number of contracts viewed in the window, you can zoom in on a curve.

1. Move your mouse over the histogram border, so that the cursor becomes a double-sided arrow.
2. Click and drag to zoom in or out.

To add a vertical line



Click the empty box above the contract. It turns gray, and a gray vertical line is added to the display. As you move the mouse to another contract, the gray line moves with the mouse.

If you click the box again, it turns burgundy, and a static burgundy vertical line is added to the display.

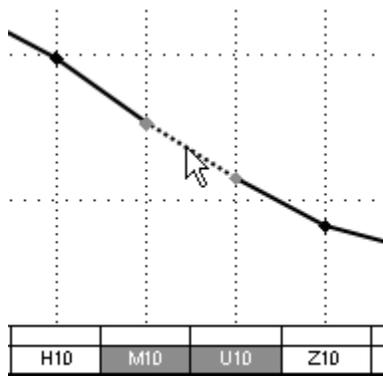
To remove the line, right-click the burgundy box.

Working with Instruments

The instruments listed along the y-axis can be removed, and other instruments can be added. Both the forward and yield curves have the same menu options:



Highlight the instruments you want to work with. Click a single instrument to highlight it. To select multiple contracts, hold down CTRL while you click the instruments. You can click a segment of the curve to highlight the associated contracts, like this:



The **Edit** menu includes standard cut, copy, and paste functionality.

To change instrument

1. Right-click a highlighted contract.
2. Click **Edit**.
3. Click **Change Instrument**.
4. Type the instrument symbol in the **Symbol** box.
5. **ENTER**.

To add instruments to forward or yield curve

You may want to add instruments to the display, for example, adding EDAH10 to the Eurodollar forward curve. When you add an instrument, it will be placed to the right of the contract you click.

1. Right-click a contract.
2. Click **Add Instrument**.
3. Type the instrument symbol in the **Symbol** box.
4. **ENTER**.

You can also replace a contract with a set of contracts on the forward curve.

1. Click a contract.
For example, DDU9.
2. Type symbol and interval (months back and months forward).
For example, EP[-1,2].
3. **ENTER**.

DDU9 is replaced with 4 contracts: EPH9, EPM9, EPU9, EPZ9.

Interval [-1,2] includes lead month (0) = EPM9, 1 month back (-1) = EPH9, 1 month forward (1) = EPU9, 2 month forward (2) = EPZ9)

If you select all contracts and enter a new set, then only the first contract is replaced.

To remove instrument

1. Right-click the contract to delete.
2. Click **Remove Instrument**.

You can also click the contract and then **DELETE**.

To open a chart or spread chart

This option allows you to open a new chart for an instrument on the curve.

1. Right-click the contract that you want to display on a chart.
2. Click **Display Chart**.

For a spread chart:

1. Click an instrument.
2. While holding **CTRL**, click another instrument.
3. Right-click one of the highlighted instruments.
4. Click **Display Spread Chart**.

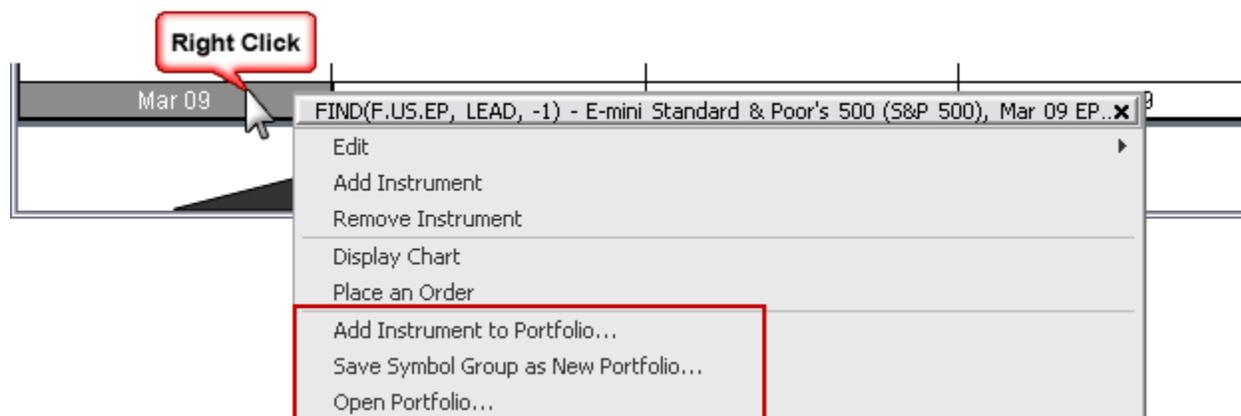
To place an order

1. Right-click the contract(s) you want to trade.
2. Click **Place an Order**.

According to your system preferences, either the DOMTrader, Order Ticket, or Simple Order Ticket will open. If you have selected two contracts to trade, then CQG Spreader opens.

Working with Portfolios

The instruments listed along the y-axis can be added to a portfolio or included in the group of symbols for a new portfolio. Both the forward and yield curves have the same menu options.



To open a portfolio

1. Right-click a contract.
2. Click **Open Portfolio**. The Select/Define Portfolio opens.
3. Click the portfolio to open.
4. Click **Close**.

To add instrument to portfolio

1. Right-click the instrument to add to the portfolio.
2. Click **Add Instrument to Portfolio**. The Select/Define Portfolio window opens.
3. Once you have defined the portfolio to your needs, click the **Close** button. A confirmation message is displayed:



To save symbol group as a portfolio

1. While holding **SHIFT**, click the instruments you want to add to a new portfolio.
2. Right-click on a highlighted instrument.
3. Click Save Symbol **Group as new Portfolio**.
4. Enter a portfolio name.
5. Click **OK**.

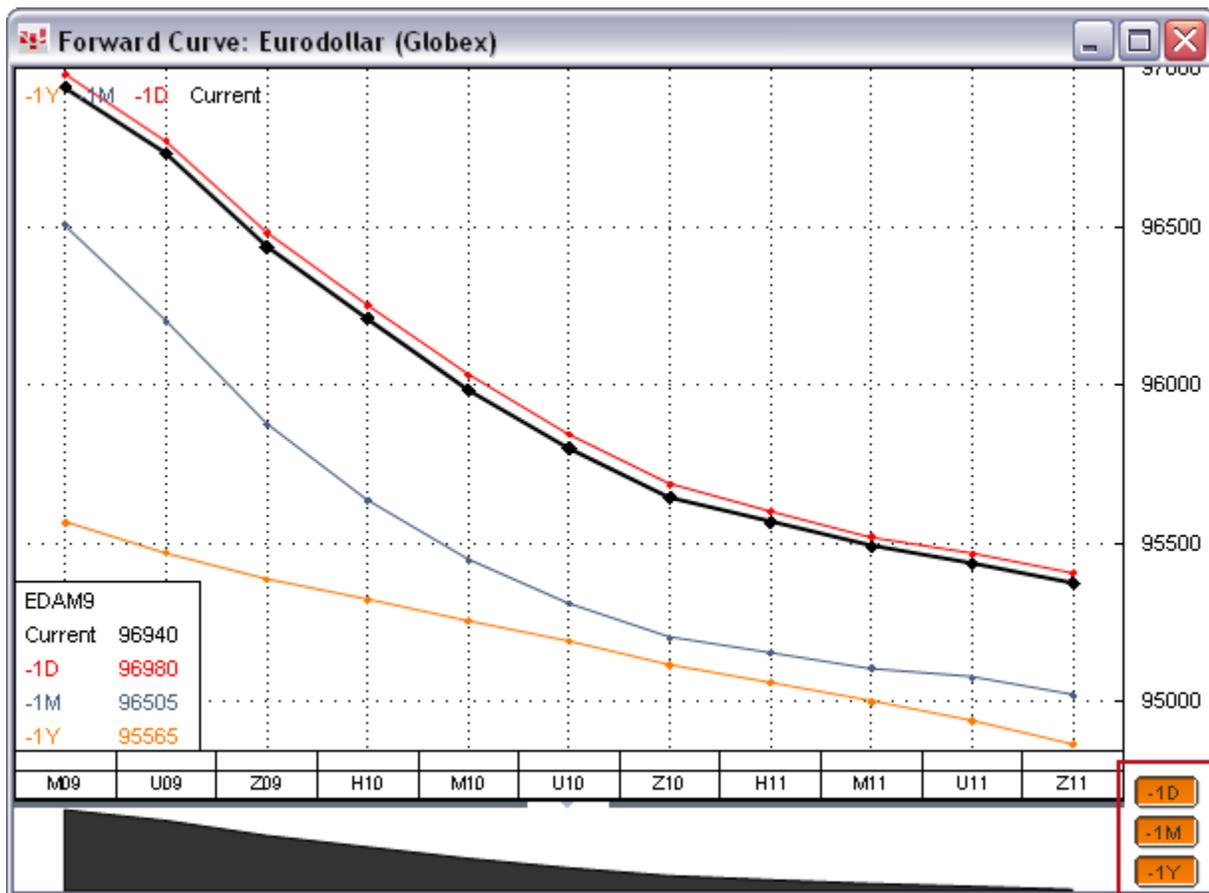
The Select/Define Portfolio window opens. Once you have defined the portfolio to your needs, close the window.

Working with Curves

You can add curves for the same set of contracts, but for different periods of time. You can set that period in [preferences](#).

To add curves

Click a curve button in the lower right corner of the window. Active buttons are orange. A curve line will be added for each button you click.



To add curves from the chart

Place a vertical line on the chart (click in the date/time area, drag to desired location, click again).

That vertical line is represented by a curve on the Yield Curve or Forward Curve window.

To remove curve

Click an active curve button.

You can also right-click the curve identifier at the top left of the window, and then click **Remove Curve**, like this:



You can also remove the curve by removing the corresponding vertical line or vertical cursor from the chart.

To change symbol

1. Make sure the curve window is selected.
2. Type the new symbol. As you begin to type, the symbol field is displayed, like this:

Symbol: EP

3. **ENTER**.

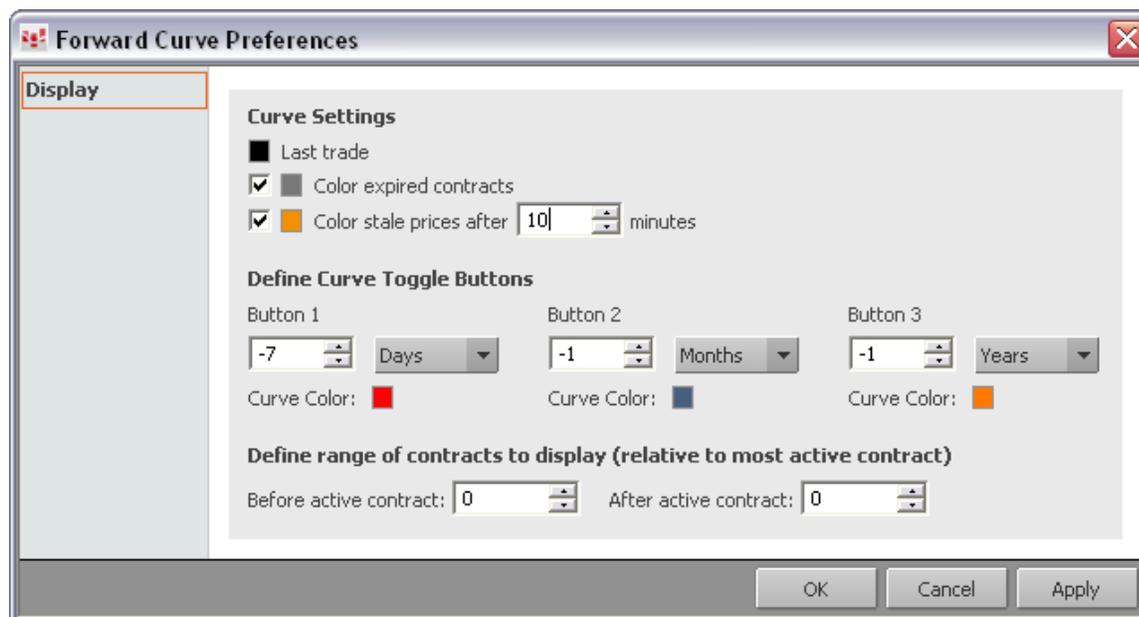
You can also enter a symbol and [range](#). The format is: symbol[low bound:high bound].

Symbol: EP[-1:2]

For example, EP [-1:2], where -1 and 2 are number of contracts being stepped from the most active one. You can also use a comma or semi-colon to separate the bounds.

Setting Forward and Yield Curve Preferences

Both curves have the same preference options. To access these settings, click the **Setup** button, and then click **Curve Preferences**. You can also open the preferences window by right-clicking the curve window title bar and selecting **Curve Preferences**.



To change trade, contract, and price display

You can choose to display expired contracts and stale prices. You define a stale price by selecting minutes of inactivity.

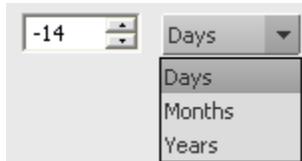
To change the color of the last trade, expired contracts, or stale prices, click the colored square to open the standard color palette.

To configure the curve buttons

Here, there are two preferences to set: the color of the curve line and how many days, months, or years in the past the curve represents.

To change the color, click the colored square to open the standard color palette.

To change the time frame, use the arrows to move the number up or down, and click the arrow to select **Days**, **Months**, or **Years** from the menu.



To set range of contracts

When you open the curve window, it is automatically populated with instruments. How many instruments is determined in preferences.

The **Before active contract** value determines the number of contracts before the current contract. The **After active contract** value determines the number of contracts after the current contract.

You can also enter a symbol and range directly. The format is: symbol[low bound:high bound]. For example, EP [-1:2], where -1 and 2 are number of contracts being stepped from the most active one. You can also use a comma or semi-colon to separate the bounds.

Pointer Tools

Many pointer tools include these common parameters: **Info**, **Display**, **Color**, **Weight**, and **Scale Label**.

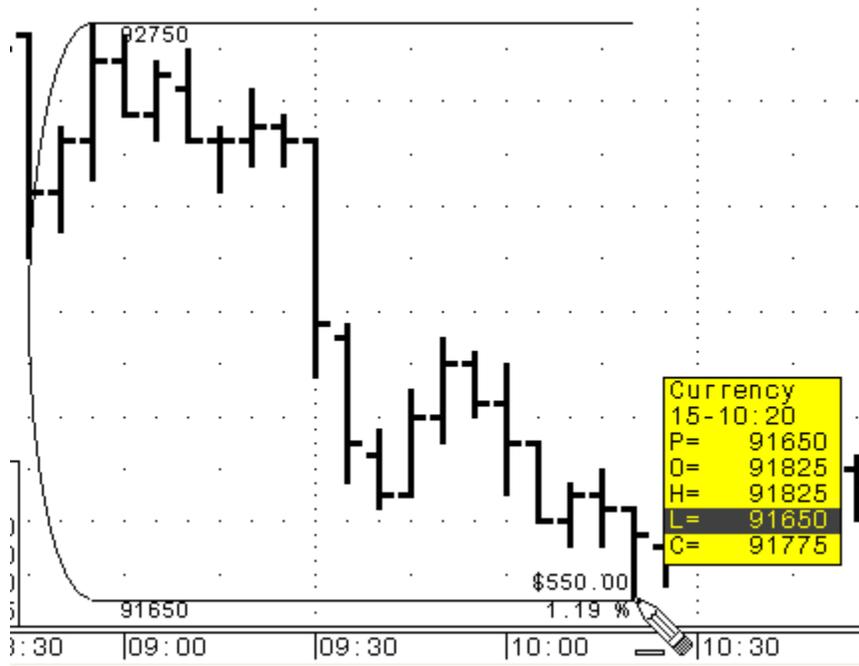
- **Info**: This button is not an actual parameter. Clicking it opens the online help for the study.
- **Display**: Choose a line style, such as line or histogram. Select where the line label should be, e.g. for Currency. Display can also define which elements of the tool to display.
- **Color**: Select a color for the line.
- **Weight**: Choose how thick you want the study line.
- **Scale Label**: When selected, the display highlights the initial set point on the time axis.

Parameters that contain arrows (>>>) indicate that a secondary parameter window will open when that parameter is selected. To return to the primary window, use the back button on the secondary window.

Currency Value (\$)

What it does:

Measures the dollar gain or loss between two points on a chart. This tool is especially helpful for measuring results when backtesting.



How to use it:

1. Select the \$ tool. The cursor is displayed as a pencil.
2. Click the chart to indicate your entry point, the starting price.
3. Drag the mouse to the desired price for the end point, and click.

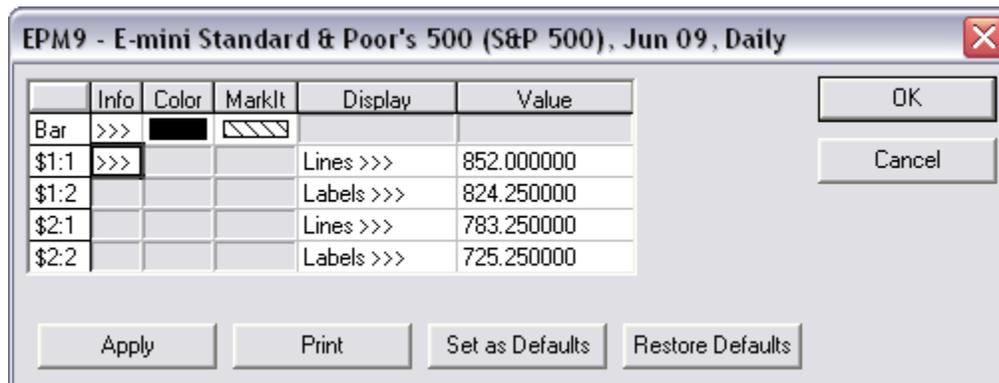
The display indicates the current point value (91650) at the cursor location as well as the dollar gain or loss (\$550.00, 1.19%) per contract based on the starting price.

Note: The dollar change is displayed only if the currency pointer tool is expanded enough to accommodate it.

Like several other pointer tools – Profile Area, Ellipse, and Rectangle – Currency can be modified.

1. Click the currency arc, so that red squares appear at both the start and end points.
2. Click the red square to activate the pointer tool.
3. Drag the mouse to the new position, and click.

Parameters



\$1:1 = entry point of first instance of currency pointer tool

\$1:2 = exit point of first instance of currency pointer tool

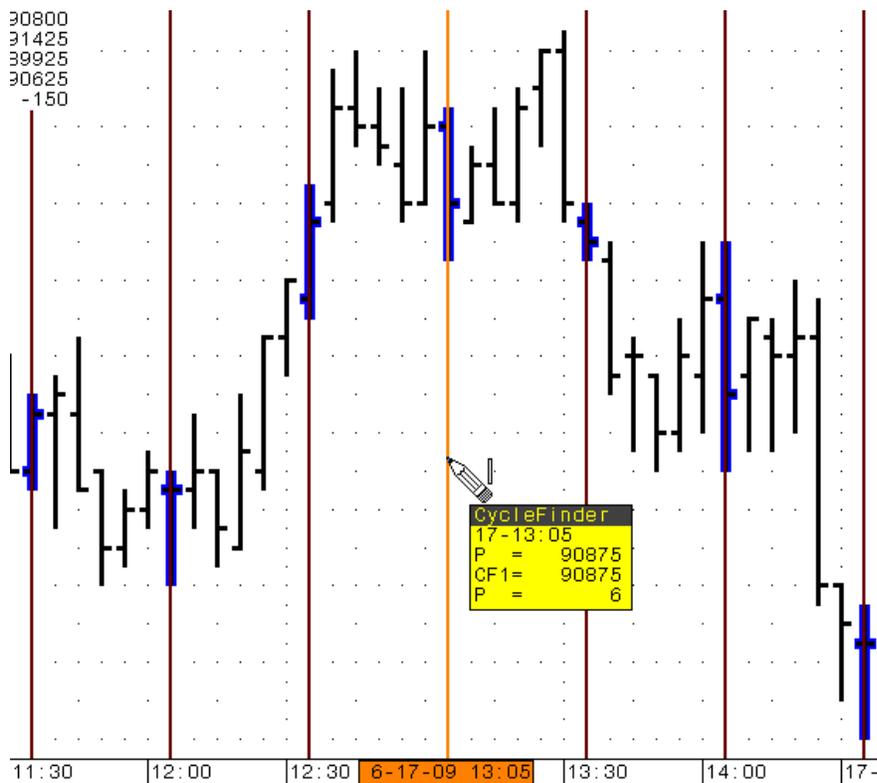
\$2, \$3, \$4, etc. = other instances of the currency pointer tool on this chart

- **Display:** Select color and weight of start, end, and arc lines. Select label position, weight, and scale label for start, end, currency, and percent change.
- **Value:** Select the prices for the start and end points. You can use a specific price or open, high, low, and close.

Cycle Finder (CFind)

What it does:

Provides a way to more clearly visualize the cycles on the chart.



How to use it:

1. Select the **Cycle Finder** tool. The cursor is displayed as a pencil.
2. Click a bar on the chart to display a vertical line.
3. Drag the cursor to move that line, and then click to park it on a particular bar. That bar becomes the center of the display (orange line).
4. Drag the cursor to the spot on the chart where the next cycle begins. You'll notice a series of vertical lines (brown lines) moving with the cursor based on the center of display (period = 6).
5. Click at the start of the new cycle to park the lines.

Parameters

CF1:1 = the center point

CF1:2 = the point of the next cycle

CF2, CF3, etc. = other instances of Cycle Finder on this chart.

- [Color, Weight, and Scale Label](#)
- **Date:** Date of the center point.
- **Time:** Time of the center point.
- **Period:** The number of bars between each of the vertical lines. Should be 2 or more.

Ellipse (Ellipse)

What it does:

Allows you to draw a circle or oval on your chart, like this:



How to use it:

1. Select the **Ellipse** tool. The cursor is displayed as a pencil.
2. Click the location on the chart where you would like to begin drawing the ellipse.
3. Drag the cursor until you have the desired size of the ellipse, and then click to park it.

Like several other pointer tools - Currency, Profile Area, and Rectangle – the ellipse can be modified.

1. Click the ellipse, so that red squares appear at both the start and end points.
2. Click the red square to activate the pointer tool.
3. Drag the mouse to the new position, and click.

Parameters

EL1:Pnt1 = the left-most point of the ellipse

EL1:Pnt2 = the right-most point of the ellipse

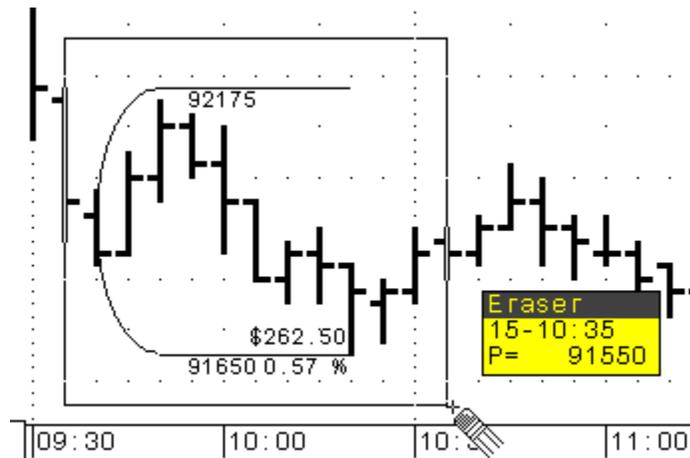
EL2, EL3, etc. = other instances of ellipses on the chart

- [Color, Weight, and Display](#)
- **Date:** The date at the points of the ellipse. For historical charts, this value is the first day of the month.
- **Time:** The time at the points of the ellipse. Not applicable for historical charts.

Eraser (Eras)

What it does:

Deletes part or all of any trend tool except candlestick formations.



How to use it:

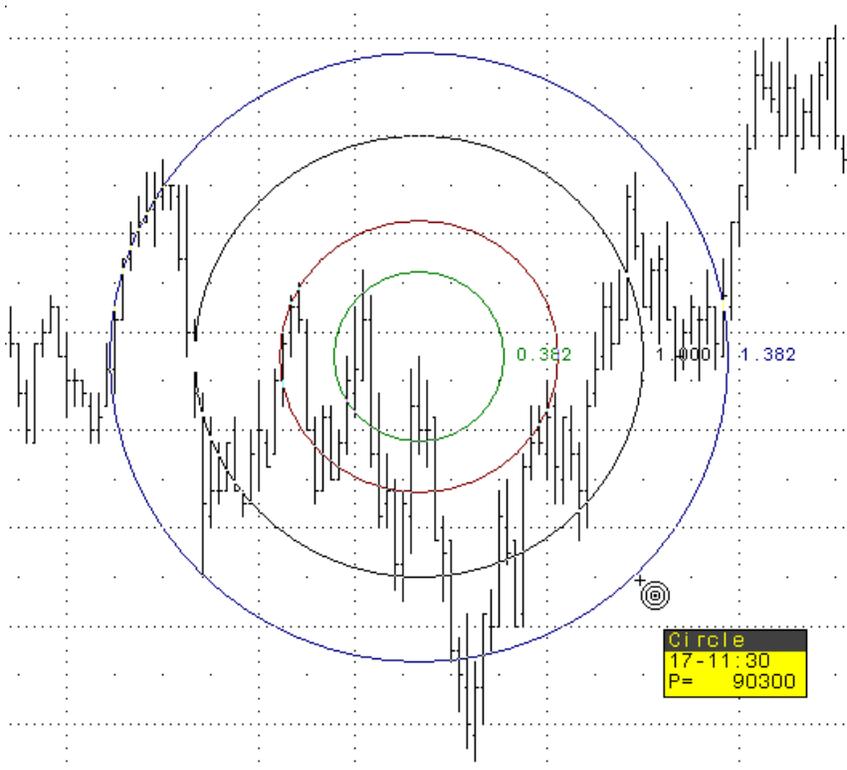
1. Select the **Eras** tool. The cursor is displayed as a pencil eraser.
2. Click the mouse to activate the first point of the erase area.
3. Drag the cursor to the end of the erase area, and click.

There are no parameters for Eraser.

Fibonacci Circles (FiboC)

What it does:

Draws a series of circles to help predict key support and resistance levels. Default ratios in CQG: 0.250, 0.382, 0.420, 0.500, 0.618, 0.750, 1.000, 1.382, 1.618, 2.618, 4.250, and 6.850.



How to use it:

1. Select the **FiboC** tool. The cursor is displayed as a series of circles.
2. Click the chart to establish the origin.
3. Drag your mouse until you have the desired radius, and then click to park the tool.

Parameters

FC1:FC1 = circle of origin

FC1:FC2 = seventh circle or scale of 1.000

- **FC1 Value:** Enter a value or choose the open, high, low, or close.
- **FC2 Value:** Enter a value or choose the open, high, low, or close.
- **Date:** Defines the date of the reference bar.
- **Time:** Defines the time of day for the reference bar. This applies to intraday use.
- **Display:** Change color, weight, and scale ratio for all circles. Select whether to display all circles or not.
- **Id:** Turns on and off the labels for the Fibonacci circles.
- **IdWt:** Allows you to set the boldness of the trend line IDs. Choices include: Normal or Bold.

Fibonacci Extensions (FiboE)

What it does:

Measures the retracement values from an original set of points (low to high) to apply at a third point. Default ratios in CQG: 0.000, 0.250, 0.382, 0.618, 0.750, 1.000, 1.618, 2.618, 4.250, and 6.850.



How to use it:

1. Select the **FiboE** tool. The cursor is displayed as a set of lines labeled EXT.
2. Click the chart to establish the zero point.
3. Click a second time in the chart window. The difference between the 1st and 2nd lines defines the 100% difference.
4. Click a third time within the chart window.

The chart displays the values for the ratios according to the scale based on the difference of the first two lines using the designated click as the new base.

Parameters

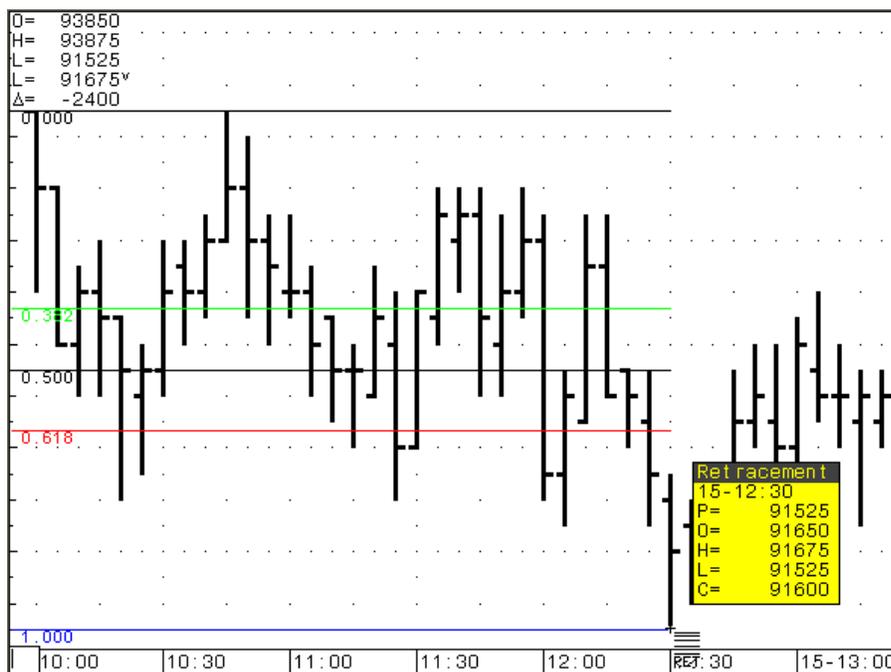
- **FE1 Value:** Determines the first value selected for the FiboE. The user may enter a value or choose to attach to the Open, High, Low, or Close.
- **FE2 Value:** Determines the second value selected for the FiboE.
- **FE3 Value:** Determines the location of the system defaulted scale line of 0.000 followed by the positioning of the other defaulted FiboE lines.
- **Date:** Defines the date of the reference bar.
- **Time:** Defines the time of day for the reference bar. This applies to intraday use.
- **Display:** Determines the type of line for the Trend Line. Options include:
 - Pnt1-Pnt2-> (ray from point 1 to point 2)
 - Pnt2-Pnt1-> (ray from point 2 to point 1)
 - Pnt1-Pnt2 (segment between the point)
 - <-Pnt1-Pnt2-> (line across the chart)
- [FE3 Display](#)
- **Id:** Turns on and off the labels for the Fibonacci Extension lines.
- **IdWt:** Allows you to set the boldness of the trend line IDs. Choices include: **Normal** or **Bold**.
- **UseLog:** UseLog is applicable only when using charts set to logarithmic scales under scale type. When UseLog is selected, the Fibonacci retracements calculate percentage retracements based on the log scale, not the linear scale. For example, a 50% retracement of a move from 300 to 500 using a linear scale is 400. Using the log scale the 50% retracement of a move from 300 to 500 is 387.30.
- **ScaleLabel:** Select this checkbox to color-code the price scale according to the trend line.

Fibonacci Retracements (FiboR)

What it does:

Derived from contributions medieval mathematician Leonardo Fibonacci made to the numbers theory, retracements measure price areas where a market move is likely to pause or reverse a trend. Many traders rely on Fibonacci numbers to compute these levels of support and resistance.

The following retracement scales are the default ratios in CQG: 0.000, 0.250, 0.382, 0.420, 0.500, 0.618, 0.750, 1.000, and 1.382.



How to use it:

1. Select the **FiboR** tool.
2. Click to establish the starting point.
3. Drag the cursor up the chart to establish the second point, and click.

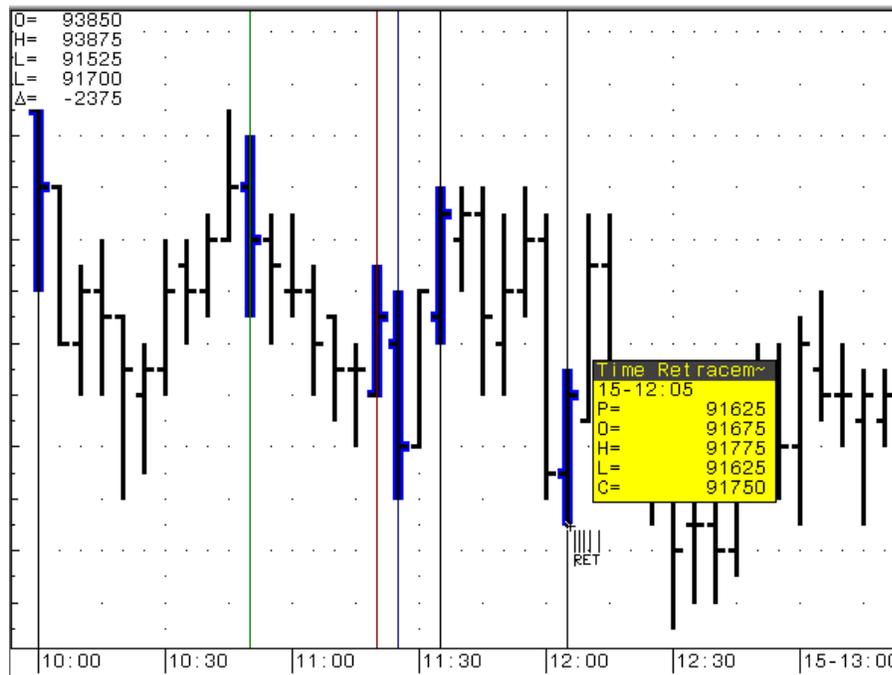
Parameters

- **Value:** Select Open, High, Low, or Close to determine the first price selected for the Fibor.
- **Display:** Determines the type of line for the Trend Line. Options include:
 - Pnt1-Pnt2-> (ray from point 1 to point 2)
 - Pnt2-Pnt1-> (ray from point 2 to point 1)
 - Pnt1-Pnt2 (segment between the point)
 - <-Pnt1-Pnt2-> (line across the chart)
- [FR2 Display](#)
- **Id:** Turns on and off the labels for the Fibonacci Extension lines.
- **IdWt:** Allows you to set the boldness of the trend line IDs. Choices include: **Normal** or **Bold**.
- **UseLog:** UseLog is applicable only when using charts set to logarithmic scales under scale type. When UseLog is selected, the Fibonacci retracements calculate percentage retracements based on the log scale, not the linear scale. For example, a 50% retracement of a move from 300 to 500 using a linear scale is 400. Using the log scale the 50% retracement of a move from 300 to 500 is 387.30.
- **ScaleLabel:** Select this checkbox to color-code the price scale according to the trend line.

Fibonacci Time Retracement (FiboTR)

What it does:

Fibonacci Time Retracements are retracements that mark points in time in the same way price retracements mark prices where a market move is likely to pause or reverse a trend.



How to use it:

1. Select the **FiboTR** tool.
2. Click on the chart to draw a vertical line.
3. Click again on the Bar where you want the line parked. This sets the first Fibonacci Retracement line.
4. Click more to park the second line. The Fibonacci fraction lines are applied and vertical lines are drawn.

Parameters

- **Date:** Defines the date of the reference bar.
- **Time:** Defines the time of day for the reference bar. This applies to intraday use.
- [Display](#)
- **SinglePane:** Makes the bars where the vertical lines are hidden. If it is not selected, the bars are shadowed.
- **ScaleLabel:** Select this checkbox to color-code the price scale according to the trend line.

Fibonacci Time Zones (FiboTZ)

What it does:

Fibonacci Time Zones are a series of vertical lines that mark the bars at Fibonacci intervals of 3, 5, 8, 13, 21, 34, etc. CQG does not display the first two time zones that correspond to Fibonacci numbers 1 and 2.

The vertical lines of this pointer tool indicate times in which major price movement can be expected.



How to use it:

1. Select the **FiboTZ** tool.
2. Click to establish the beginning point. The time zone lines are drawn on the chart at the Fibonacci intervals. The time zone lines can still be moved, but will maintain their distances from each other. This anchors the time zones.
3. Click again to draw the Fibonacci Time Zones.
4. When the lines on the chart are where you want them, click to park them.

Parameters

- [Color](#)
- [Weight](#)
- **Date:** Defines the date of the reference bar.
- **Time:** Defines the time of day for the reference bar. This applies to intraday use.
- **SinglePane:** Makes the bars where the vertical lines are hidden. If it is not selected, the bars are shadowed.
- **ScaleLabel:** Select this checkbox to color-code the price scale according to the trend line.

Gann Lines (Gann)

What it does:

Designed by W.D. Gann, this technical study uses geometric angles in conjunction with time and price. By maintaining equal time and price intervals, he theorized that certain geometric patterns and angles could predict price action. Believing that an ideal balance of time and price is produced when prices rise or fall at a 45-degree angle relative to the time axis, Gann concluded that bull markets were identified by prices being above a trendline, and bear markets were identified by prices being below the trendline.

The most important angle, consisting of a rise/run of 1x1 (always equal to a 45 degree angle, if the x- and y-axes have equally spaced intervals), provides major support during an up trend. When the trendline is broken, prices should be expected to fall to the next trendline, signifying a major reversal. In other words, as one angle is penetrated, expect prices to move and consolidate at the next angle.

CQG allows up to 10 Gann lines to be displayed. They are:

(N*N)x1 UP

(N)x1 UP

1x1 UP

1x(N) UP

1x(N*N) UP

1x(N*N) DN

1x(N) DN

1x1 DN

(N)x1 DN

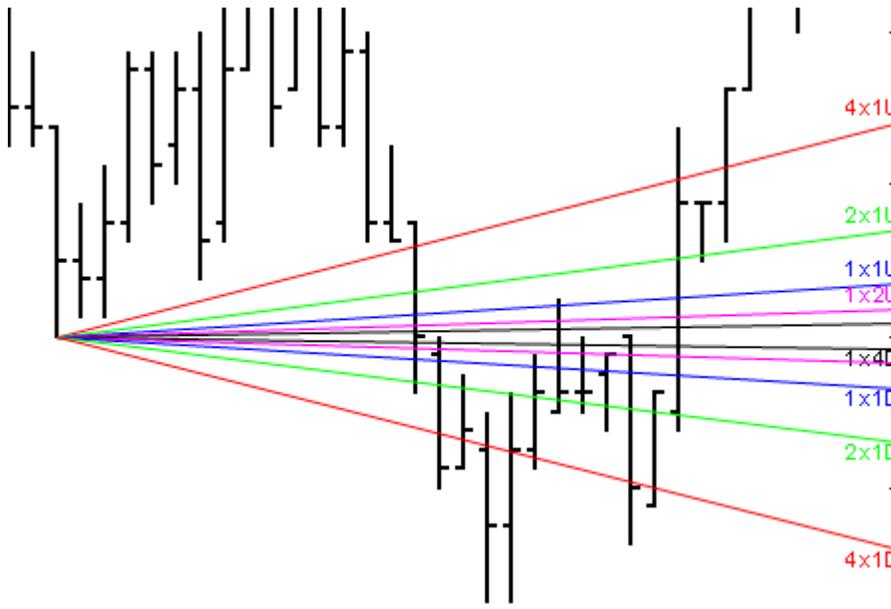
(N*N)x1 DN

where N represents the Scale parameter. For example, if N = 2, the following lines would be displayed: 4x1UP, 2x1UP, 1x1UP, 1x2UP, 1x4UP, 1x4DN, etc.

The Slope parameter is required to define the inclination for Gann lines. The Slope is the amount of rise or fall, in minimum chart scale increments, of the line from a specified point on a bar to the same bar on the following day. For example: a slope of 5 established on the 3rd bar of a specific day on a US Bond Chart would be drawn through a point 5/32 higher on the 3rd bar of the following day.

How to use it:

1. Select the **Gann** tool.
2. Click the chart to create a horizontal Gann cursor.
3. Move the cursor in and out to establish the second point, and click.



Parameters

- **Value:** The point on the price scale where the Gann display starts. You can choose **Open**, **High**, **Low**, or **Closing** bar values or any other chart value.
- **Date:** Defines the date of the reference bar.
- **Time:** Defines the time of day for the reference bar. This applies to intraday use.
- **Slope:** Defines the +/- slope (in ticks or minimum price increments) to be used for the 1x1UP/1x1DN Gann lines, respectively. Other lines multiply/divide this factor by the Scale parameter to get their respective slopes.
- **per Unit:** Defines the scale for the slope. Choices are per bar or per day.
- **Scale(N):** Defines the scale of the Gann lines. For the default of N = 2, the first line is "4x1UP" followed by "2x1UP," etc.
- **Type:** Defines the extent of the display. Choices include **Up**, **Down**, or **Full**.
- [Display](#)
- **Id:** Turns on and off the labels for the Gann lines.
- **Id Wt:** Allows you to set the boldness of the trend line IDs. Choices include: **Normal** or **Bold**.
- **ScaleLabel:** Select this checkbox to color-code the price scale according to the trend line.

Horizontal Line (HorzL)

What it does:

Allows you to place an infinite horizontal line on a chart.

Please see "[Adding Lines \(Cursors\) to Charts](#)" on page 120 for more information about working with lines on the chart.

How to use it:

1. Click the chart's price axis.
2. Move the line until you reach the desired location, and click to park it.

Parameters

- [Color](#)
- [Weight](#)
- **Value**: Determines the price used to display the horizontal line. You can choose **Open**, **High**, **Low**, or **Closing** bar values or any other chart value.
- **Current Bar**: When selected, the line dynamically updates according to current OHLC value.
- **ScaleLabel**: Select this checkbox to color-code the price scale according to the trend line.
- [Display](#)

Linear Regression (LinR)

What it does:

The Linear Regression tool plots the regression line and a standard error channel, based on the points you click. The distance away from the LR line for the limit lines is either the maximum deviation above and below the LR line, when the Limit Lines parameter is set to Max Deviation, or the standard errors multiplied by the value specified in the Factor parameter when Limit Lines are set to Factor x StdErr. For example, selecting a factor of .5 would plot each line .5 standard errors away from the LR line. The Standard Error is defined as: (The sum of the squares of the deviation from the line)/The number of bars – 1).

Standard mathematics are used for the Linear Regression. The maximum deviation is the price that is furthest from the linear regression line. For example: If the selected price is close and the two selected points are 20 bars apart, the linear regression line is calculated using the 20 closes between the selected points, and then the maximum deviation is found by looking at each close and finding the one that is furthest from the linear regression line. One limit line is placed parallel to the linear regression line, intersecting the close that is furthest from the linear regression line. The other limit line is placed parallel an equal distance to the other side of the linear regression line.

The formula is:

$$\frac{(14 * \text{Sum}(\text{Accum}(@, \text{none}) * \text{Close}(@), 14) - \text{Sum}(\text{Accum}(@, \text{none}), 14) * \text{Sum}(\text{Close}(@), 14))}{(14 * \text{Sum}(\text{Power}(\text{Accum}(@, \text{none}), 2.00000), 14) - \text{Power}(\text{Sum}(\text{Accum}(@, \text{none}), 14), 2.00000))}$$

*

$$\text{Accum}(@, \text{none}) + (\text{MA}(@, \text{Sim}, 14) - \text{MA}(\text{Accum}(@, \text{none}), \text{Sim}, 14))$$

*

$$\frac{(14 * \text{Sum}(\text{Accum}(@, \text{none}) * \text{Close}(@), 14) - \text{Sum}(\text{Accum}(@, \text{none}), 14) * \text{Sum}(\text{Close}(@), 14))}{(14 * \text{Sum}(\text{Power}(\text{Accum}(@, \text{none}), 2.00000), 14) - \text{Power}(\text{Sum}(\text{Accum}(@, \text{none}), 14), 2.00000))}$$

Note: If your first point is in the past and your second point is in the future (beyond the current bar), the Linear Regression tool will continue recalculating and redrawing the regression lines, including the new bar data, as it comes in. Additionally, if your first point is in the future and your second point is in the past, LinR will continue including the new data as it comes in, until the time of the first point is reached, when no new data will be included.

Depending on where your mouse is in relation to the bar and the linear regression line, different values will be displayed in the mouse text box.

Pointer is on the linear regression line, but not near a bar, mouse text displays:

P = Price represented by pointer position

LR:DN = Value of the bottom linear regression envelope line.

LR:LR = Value of the linear regression line.

LR:UP = Value of the top regression envelope line.

S = Slope of the line in price per day.

R2 = The square of the error.

Pointer is close to, or on, a bar but not on the linear regression line, mouse text displays:

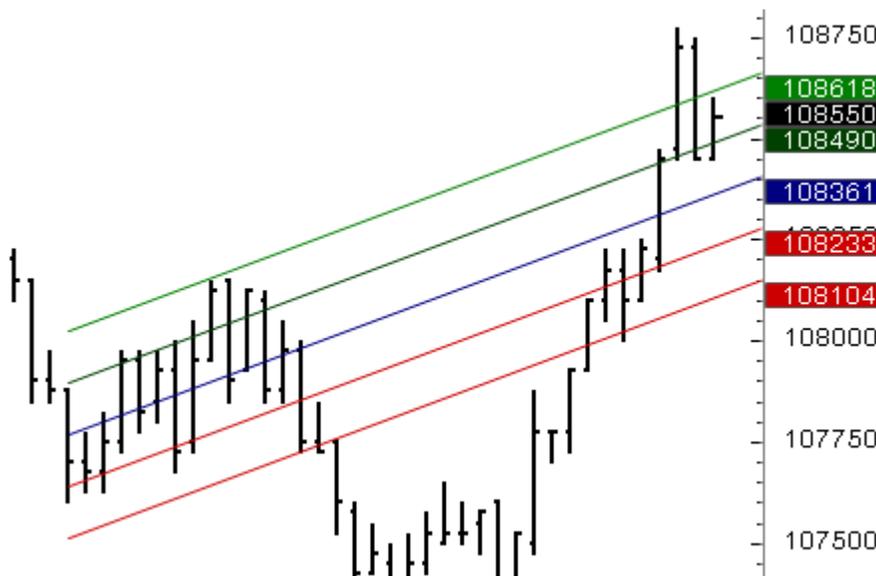
- P = price
- O = open
- H = high
- L = low
- C = close

Pointer is not near a bar and not on the linear regression line, mouse text displays:

- P = price

How to use it:

1. Select the **Linear Regression** tool. The cursor becomes a pencil.
2. Click the a starting point on the chart.
3. Move the cursor until you reach the desired location, and click to park it.



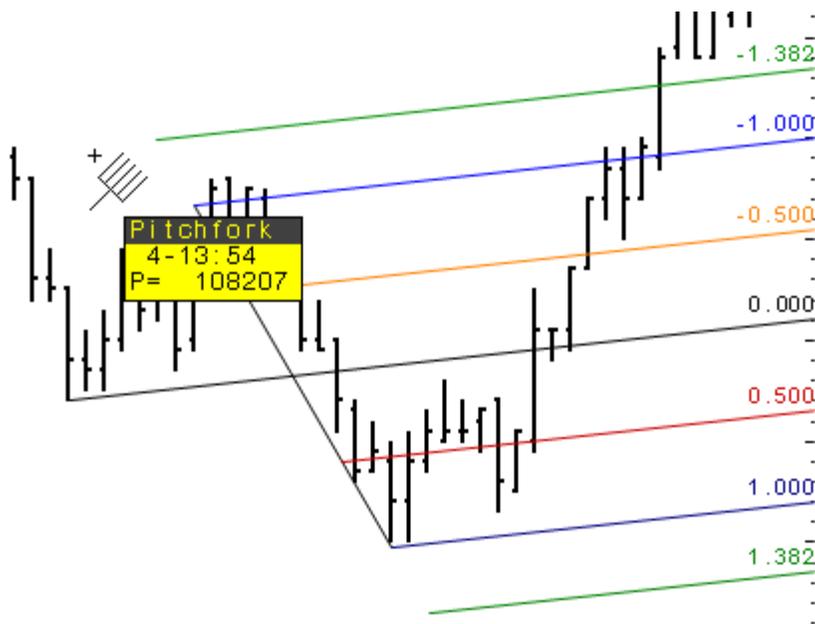
Parameters

- [Display](#)
- **Date**: Indicates the two initial dates used to draw the regression line on intraday charts.
- **Time**: Indicates the two initial times used to draw the regression line on intraday charts.
- **Price**: Price used to draw the regression lines. Choices include: **Open**, **High**, **Low**, **Close**, **Mid**, **HLC/3**, and **Average**.
- **Limit Lines**: Sets how the standard error channel lines are constructed. Choices include: **Factor x Std Err**, **Factor x Residuals**, and **Max Deviation**.
 - Standard Error = $MLR(@,period) + Factor * StdDev(@,period)$
 - Residual = $MLR(@,period) + Factor * SqRoot(MLRResidual(@,period)/(period-1))$
with n-1 as divisor
 - Max Deviation = The close that is furthest from the linear regression line.
- **Factor**: Number of standard errors between the limit lines, if the **Limit Lines** parameter is set to **Factor x Std Err**. Otherwise, this setting has no effect on the display.
- **Divisor**: **N** = a standard deviation calculation; **N-1** = population standard deviation calculation.
- **Length**: Determines the range covered by the regression lines. Choices include: From point 1 to point 2, point 1 to point 2 and onward, point 2 to point 1 and onward, and backward from point 1 to forward from point 2.
- **Update**: Number of minutes between recalculations. If set to zero, the study recalculate after every tick. Setting the study to recalculate after every tick allows the two reference points to remain a constant number of bars apart.
- **ScaleLabel**: Select this checkbox to color-code the price scale according to the trend line.

Pitchfork (Andrews) Lines (PFork)

What it does:

Pitchfork is a line study developed by Dr. Alan Andrews, consisting of three user-selected parallel trendlines. Based on the normal trendline support and resistance principles, the first point or "pitchfork handle" begins at a leftmost point (usually a major peak or trough). The second or third trendlines are then drawn beginning at the two rightmost points (a major peak and a major trough) and are constructed parallel to the first line.



How to use it:

1. Select the **Pitchfork** tool. The cursor becomes a pitchfork.
2. Click the a starting point on the chart to start the handle of the pitchfork.
3. Move the cursor to extend the length of the handle, and click. The prongs of the pitchfork appear.
4. Move the cursor until the pitchfork is in the desired location, and click to park it.

Parameters

- **PFork 1 Value:** Determines the first value selected for the PitchFork. Enter a value or choose to attach to the Open, High, Low, or Close.
- **PFork 2 Value:** Determines the second value selected for the Pitchfork and is the location of the system defaulted scale line of 1.000.
- **PFork 3 Value:** Determines the location of the system defaulted scale line of -1.000 followed by the positioning of the other defaulted PitchFork lines.
- **Date:** Defines the date of the reference bar. This parameter is only displayed after the initial pitchfork is displayed. It is not displayed if you select Pitchfork from the Add Study dialog.
- **Time:** Defines the time of day for the reference bar. This applies to intraday use. It is not displayed if you select Pitchfork from the Add Study dialog.
- [Display](#)
- **Direction:** Determines whether the pitchfork points forward (toward the right) or backward (toward the left) on the chart.
- **Id:** Turns on and off the labels for the PitchFork lines, and sets the position of the labels, if they are displayed, either to the right or left of the point marked by the labels.
- **IdWt:** Sets the boldness of the trend line ID labels. Choices include: Normal or Bold.

Probability Projection (PrbPrj)

What it does:

The Probability Projection study draws a parabola that, according to the study, will encompass probable future chart values

The study is based on the work of Fisher Black and Myron Scholes. It uses probabilities (volatilities) to project current prices into the future, and assumes that prices are normally distributed and arrived at randomly.

How to use it:

1. Select the **Probability Projection** tool.
2. Click the chart to establish the beginning point for the volatility calculation.
3. Click the chart to select the ending point for the volatility calculation.
4. Click a third point to mark the left-most point of the Probability Projection curve.

Parameters

- **Type:** The method used for calculating the volatility. Choices include: Percent, Log and HiLo Range.
- **Value:** The value used for the calculation. Choices include: Open, High, Low, Close.
- **Prob%:** The probability the price will lie within the parabola. Choices are 90 or 95 percent.
- **Date:** Represents the clicked points. Pnts 1 & 2 represent the beginning and end of the range for the volatility calculation respectively. Pnt 3 represents the anchoring point for the parabola.
- **Time:** Represents the clicked points for intraday charts. Pnts 1 & 2 represent the beginning and end of the range for the volatility calculation respectively. Pnt 3 represents the anchoring point for the parabola.
- [Display](#)

Profile Area

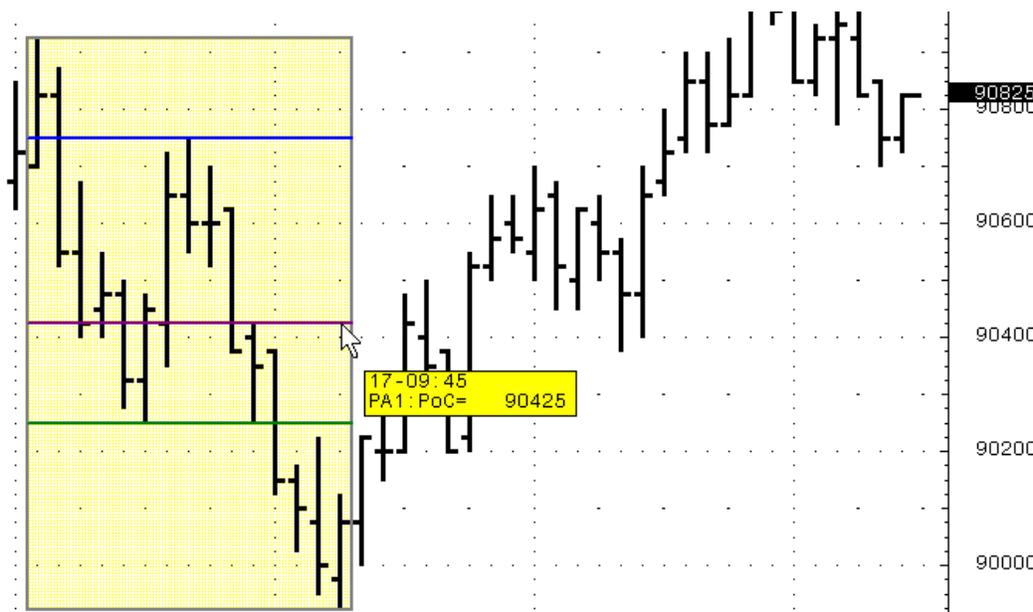
What it does:

This tool draws a Market Profile volume area and Market Profile point of control for the selected bar range. It uses the same algorithm as the MPVA study to calculate these values.

The high, low, and POC values are displayed in the cursor value box.

Profile Area is available on all charts (except Market Profile). You can open a Market Profile chart, if one is not already open, from this tool by right-clicking and selecting **Open Market Profile**. If you already have a Market Profile chart open, clicking **Open Market Profile** changes the symbol used to match the Profile Area symbol. The Market Profile uses the same time periods and configuration as the Profile Area.

It requires an enablement.



How to use it:

1. Select the **Profile Area** tool. The cursor changes.
2. Click the chart where you want to start.
3. Expand the area by dragging the mouse.
4. Click again where you want to end.

Like several other pointer tools - Currency, Ellipse, and Rectangle – the Profile Area can be modified.

1. Click the Profile Area, so that red squares appear at both the start and end points.
2. Click the red square to activate the pointer tool.
3. Drag the mouse to the new position, and click.

Parameters

PA: Start = First bar in calculation

PA: End = Last bar in calculation

- **MP Interval:** Bar values are calculated using this interval in static mode.
- **Dynamic:** Select this check box to switch from static to dynamic mode. In static mode, all values have a single value for the whole time range. In dynamic mode, the values are cumulatively calculated for each dynamic interval beginning at the start.
- **Dynamic Interval:** In dynamic mode, values displayed for each bar are calculated using this interval that includes the bar close.
- **Date:** Select start and end dates for bounds of profile area.
- **Time:** Select start and end times for bounds of profile area.
- **Display:** Choose display properties, such as color and type of line for: Marquee, Shading, High, Low, POC, POC2, POC3, POC4, POC5, TPO Profile (number of time segments that this price was traded at), and Volume. POC Distance determines how many ticks between POCs. For example, a setting of 5 indicates that a range of 5 ticks is ignored when searching for the next POC.

Notice the settings and display in this image:

	Info	Color	Weight	Display	Labels	% Dist	POC Distance
PA1:Marquee	>>>	Grey	0.5	Line			
PA1:Shading		Yellow	1	<input checked="" type="checkbox"/>			
PA1:High		Blue	0.5	Line	Price	68	
PA1:Low		Blue	0.5	Line	Price		
PA1:POC		Blue	0.5	Line	Both		1
PA1:POC2		Blue	0.5	Dash	Amount		
PA1:POC3		Blue	0.5	Dash	None		
PA1:POC4		Blue	0.5	Dots	None		
PA1:POC5		Blue	0.5	Dots	None		
PA1:TPO Profile		Grey	25%	Right Side			
PA1:Volume		Grey	50%	None			

- **Calculate On:** Select **Price** or **Volume** for the calculation.
- **Type:** Defines type of volume displayed on curve. Select **Exchange Only**, **Tick Only**, or **Exchange or Tick**.

Actual volumes represent the total number of contracts traded during the selected chart interval.

Tick volumes are the number of price changes that occurred during a specified time period.

Rectangle (Rectngl)

What it does:

The rectangle tool allows you to draw a rectangle on your chart.

How to use it:

1. Select the **Rectangle** tool.
2. Click the location on the chart where you would like to draw the rectangle.
3. Drag the cursor until you have the desired size of the rectangle, and then release the mouse button.

Parameters

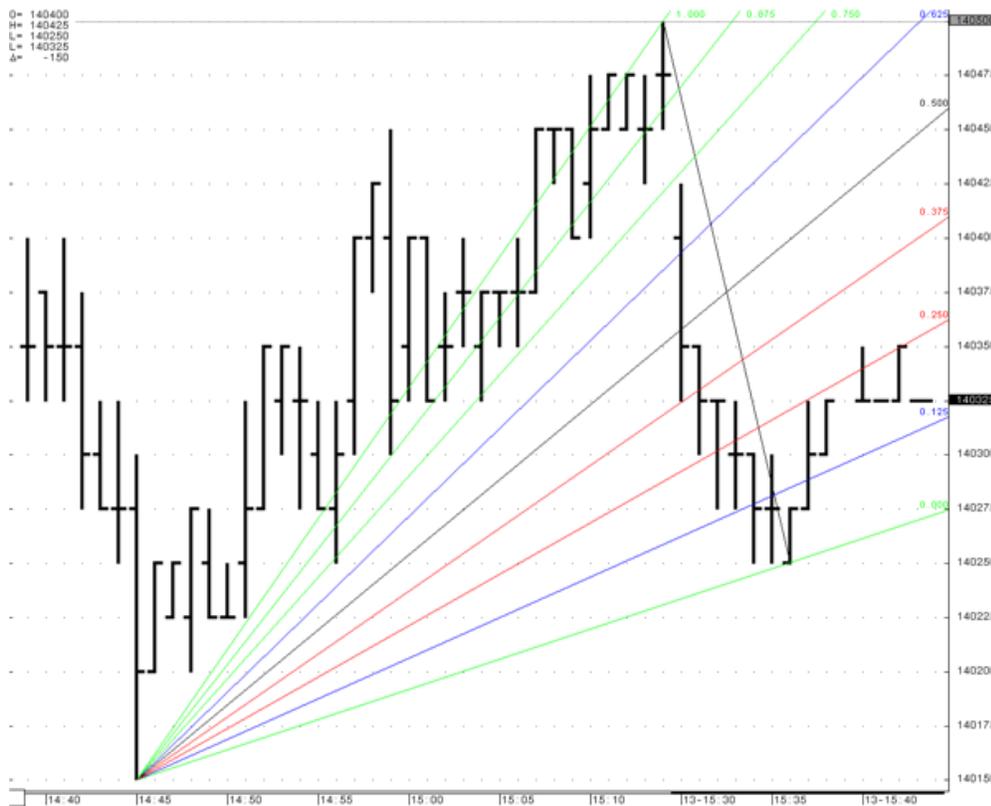
[Display](#)

Speed Lines (SpdLin)

What it does:

Speed Lines provide a mechanism for analyzing trends. With speed lines, you are better able to see support and resistance within a trend, which can provide information for both immediate trading decisions as well as a more long-term point of view.

You mark three points on the chart, and the tool draws a series of lines based on those three points.



How to use it:

1. Select the **Speed Lines** tool.
2. To begin, place the cursor at the end of an identified trend and click. That's the first point.
3. Move the cursor to the end of the next trend and click. That marks the second point.
4. Do that again for the third point.

The tool draws a line connecting the second and third points and draws nine lines from the first point and between the second and third points, dividing the area into eight.

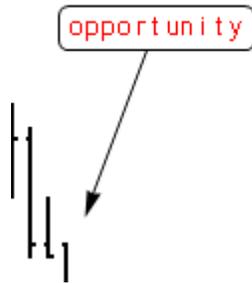
Parameters

- **Value:** The price used to calculate the value of the speed lines.
- **Date:** Defines the date of the reference bar.
- **Time:** Defines the time of day for the reference bar.
- [Display](#)
- **Id:** Turns on and off the labels for the lines, and sets the position of the labels, if they are displayed, either to the right or left of the point marked by the labels.
- **IdWt:** Sets the boldness of the trend line ID labels. Choices include: Normal or Bold.

Text (Text)

What it does:

Allows you to add a text box with an optional arrow on a chart. The text box can be used to add comments and notes to a chart. It's also a way to highlight information.



How to use it:

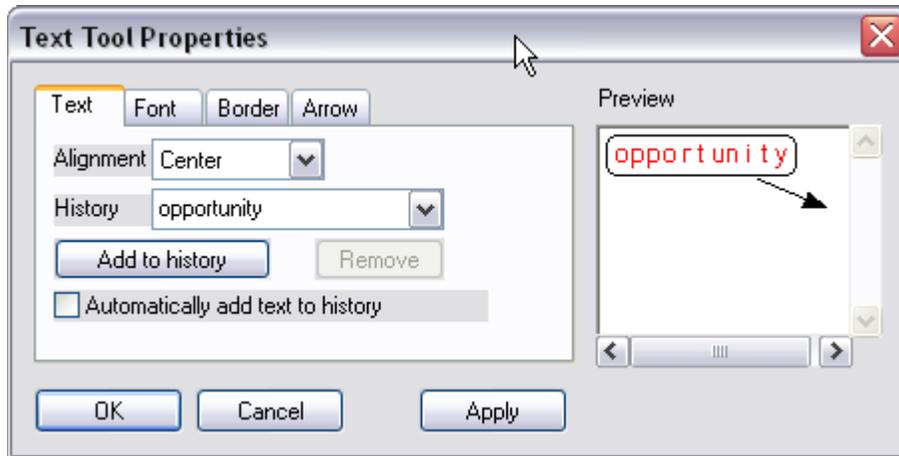
1. Select the **Text** tool.
2. Click the location for the text box arrow. A dotted box appears.
3. Type your comment or label in that box. You can also select from a list of previous entries (see Properties).
4. Click outside the text box, and drag the mouse to place the text box and arrow where you want them.
5. Click again to lock them in place.

The location of the arrow can be modified.

1. Click the text box, so that squares appear at both the start and end points.
2. Click the square to activate the pointer tool.
3. Drag the mouse to the new position, and click to park it.

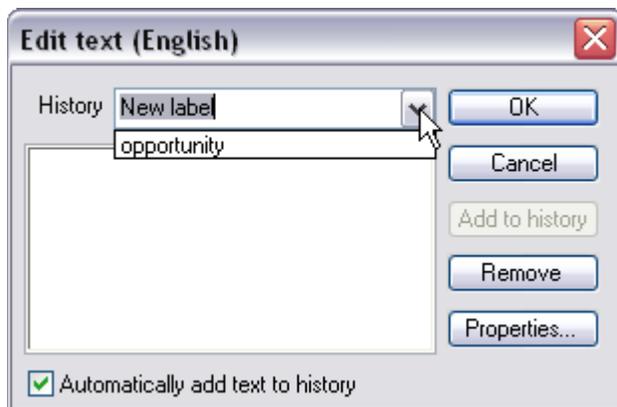
Properties

Before the ellipse has been parked, you can change the label, alignment, font, border, and arrow color and style. Right-click the text box to open the Text Tool Properties window:



You can also save the text, so that it is available to you when you create another text box, by adding it to history.

When you create another text box, instead of typing a label or comment, right-click the text box to open the **Edit text** window. Select the saved text from the menu:



Right-click the arrow, and click **Select Arrow Color** to change the color of the arrow without having to go through the properties and parameters window.

Parameters

Txt1: text = the text associated with the first instance of the tool

Txt1: arrow = the arrow associated with the first instance of the tool

Txt2: text = the text associated with the second instance of the tool

Txt2: arrow = the arrow associated with the Second instance of the tool

Color: Select the color of the text and arrow.

Value: Identifies the location of the text box and arrow according to price.

Date: Identifies the date at the location of the text box.

Time: Identifies the time at the location of the text box.

Text: Click to change the label.

Properties: Click to open the Text Tool Properties window to change text, font, border, and arrow characteristics.

Display: Unselect this check box to remove the arrow.

Trend (Trend)

What it does:

Trend lines indicate a persistent change in price, either upward or downward. More precisely, in an uptrend, the lower limits of the fluctuation tend to form a straight line, and in a downward trend, the upper limits conform to a straight line.

When trend lines are on a chart or being placed on a chart, the mouse text box contains the following additional items:

- P Indicates the position, on the price scale, of the pointer.
- T Price shown on the trend line at the time of the bar.
- S Change in price per day. Therefore, for bars shorter than daily, the slope is multiplied by the number of bars of the selected time frame in one trading day.

How it works:

1. Select the **Trend** tool. The cursor becomes a pencil.
2. Click the chart to establish a starting point.
3. Move the cursor to the desired angle, and click to park it.

To draw a perpendicular line, press **CTRL** before you begin.

To draw a parallel line, press **SHIFT**.

Notice the cursors:



Perpendicular



Parallel

To display the angle of the trend line as you draw it:

1. Draw a trend line.
2. Right-click the line, and then click **Modify Trend**.
3. Click the **Display** field for the second point.
4. In the **Angle** field, choose left or right, which indicates that the angle is displayed to the left or right of the trend line.
5. Click **Set as Defaults**.
6. Click **OK**.

Now, each time you draw a trend line, the angle is displayed, making it easy to draw the line at the angle you want.

If you would rather specify the angle, go to parameters and change the **Use** field selection to **Angle** and enter a value in the **Angle** field.

The image shows a trend line drawn at a 45-degree angle.



Parameters

Each trend line has a start point (Pnt1) and an end point (Pnt2).

- **Use** (for Pnt2): Select **Angle** or **Point**. Choose **Angle** when you want to specify the angle of the line (in the **Angle** field) regardless of the end point value. Choose **Point** when you want to use the bar and its value to dictate the angle.
- **Value**: Choose Open, Close, Low, or High for the start or end point of the trend line.
- **Current Bar**: If selected, then each time the current bar moves, the trend line is redrawn.
- **Date**: Defines the date of the reference bar.
- **Time**: For intraday charts. Defines the time of day for the reference bar. You can input a specific time.
- **Angle** (for Pnt2): Specify the angle for the trend line, when **Use = Angle**.
- **Display** (Pnt1): Determines the type of line for the trend Line. Options include:
 - Pnt1-Pnt2-> (ray from point 1 to point 2)
 - Pnt2-Pnt1-> (ray from point 2 to point 1)
 - Pnt1-Pnt2 (segment between the points)
 - <-Pnt1-Pnt2-> (line across the chart)
- **Display** (Pnt2): In addition to [standard display options](#), use these parameters to display the **Angle** on the chart. Off = not displayed, Left = displayed to left of line, Right = displayed to right of line.
- **ScaleLabel** (Pnt1): Select this check box to color-code the price scale according to the trend line.

Add a trend line to another pointer tool

You can draw parallel and perpendicular trend lines (Trend and Trend Channel pointer tools) in relation to other pointer tools. Consider speed lines:



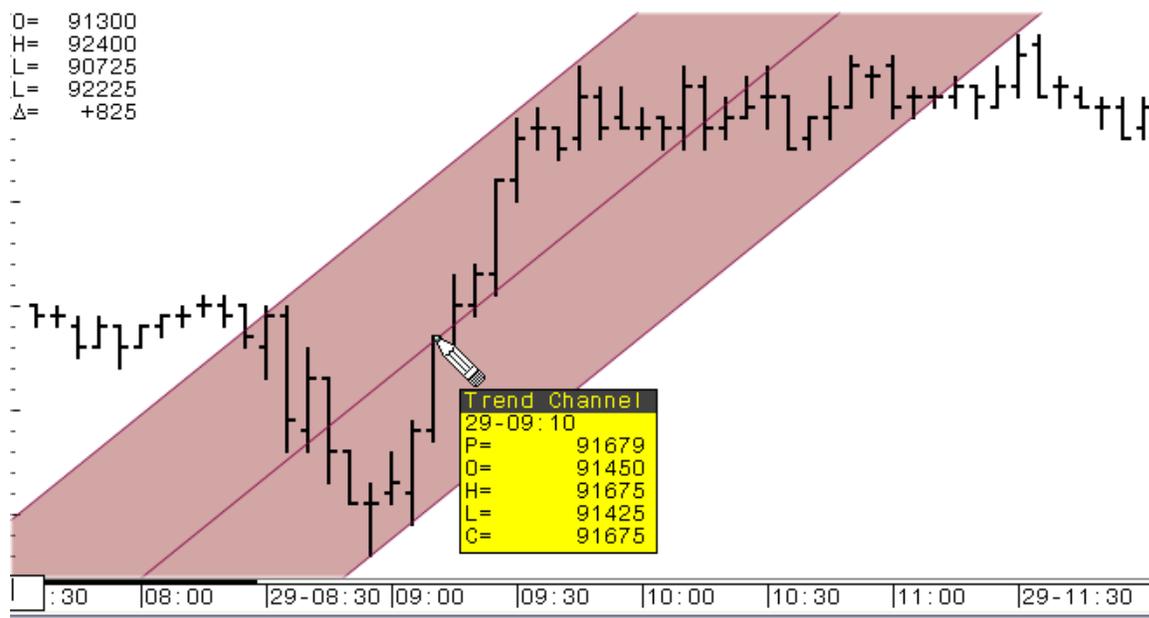
1. While holding down the SHIFT key, click the speed line to reference (here, 0.000). Notice the dotted line on the speed line.
2. Move the cursor to the location for the trend line, and click to establish the starting point.
3. Click again to park the line.

Trend Channel (TrCh)

What it does:

Plots two parallel lines and an optional third line related to the initial lines.

Besides showing the open, high, low, close and last for the designated bar, either the right-most bar on the chart or the bar represented by the vertical cursor, the cursor value box shows the corresponding trendline value for that bar.



How to use it:

1. Select the **Trend Channel** tool.
2. Click at the point on the chart where you want one line of the trend to begin.
3. Click at a second point to establish the angle of the first channel line.
4. Drag the cursor to a third point on the chart.
5. Click at that point place the second line and establish the channel.

To draw a perpendicular line, press **CTRL** before you begin.

To draw a parallel line, press **SHIFT**.

[Add a trend line to another pointer tool](#)

Parameters

- **Value:** Allows the user to input a value or select Open, Close, Low or High for the starting or ending point of the trendline.
- **Date:** Defines the date of the reference bar.
- **Time:** Defines the time of day for the reference bar. This applies to intraday use. Users can input the desired time.
- **CH1:Pnt1 Display:** Determines the type of line for the trend. Options include:
 - Pnt1-Pnt2-> (ray from point 1 to point 2)
 - Pnt2-Pnt1-> (ray from point 2 to point 1)
 - Pnt1-Pnt2 (segment between the point)
 - <-Pnt1-Pnt2-> (line across the chart)

- **CH1:Pnt3 Display:**

[Color, Weight, Style](#)

Display

- **Reflected Line:** After the first click sets the reference line, the second click (after dragging the mouse) draws 2 lines parallel to the first line, one at the second mouse click and a second, on the other side of the reference line at the same distance as the reference line is to the first parallel line.
- **Mid-Line:** Draws 2 lines parallel to the reference point. The first click determines the total distance from the first to the third line, while the system fills in the mid-line, equidistant between the first and third lines.
- **2 Reflected Lines:** Makes a total of 4 lines which include: The initial reference line, a second line created by dragging the mouse and clicking at the desired distance and two additional lines, one on each side of the initial 2 reference lines.
- **No Extra Line:** Draws no additional Trend Channel lines.

Id: When selected, the system will display an identifier indicating the order the trendlines were placed on the chart.

IdWt: Set the boldness of the trend line ID. Choices include: **Normal** and **Bold**.

- **ScaleLabel:** Select this checkbox to color-code the price scale according to the trend line.

Vertical Line (VertL)

What it does:

Places a vertical line on the chart.

Please see "[Adding Lines \(Cursors\) to Charts](#)" on page 120 for more information about using lines on the chart.

How to use it:

1. Select the **Vertical Line** tool. The cursor becomes pencil.
2. Click to activate the line.
3. Drag the cursor across the window until you reach the desired location, and click to park it.

Parameters

- [Color and Weight](#)
- **Date**: Indicates the date to which the vertical line is anchored for intraday charts.
- **Time**: Indicates the time the vertical line is anchored to for intraday charts
- **Single Pane**: When selected, the vertical is restricted to a single pane within the window.
- **ScaleLabel**: Turns on and off the Horizontal scale indicator.

Zoom (Zoom)

What it does:

The Zoom pointer tool allows an area of the chart to be enlarged. It works in conjunction with the UnZoom and ReZoom pointer tools.

How to use it:

1. Select the **Zoom** tool.
2. Click the chart to activate the first point of the zoom area.
3. Drag to define the diagonal of the zoomed area.
4. Click again to show the zoomed area of the chart.

To add the **Zoom** buttons to your toolbar, go to **Setup > Customize Toolbar > Chart Button Groups > Zoom**.

Redo Zoom (ReZm)

What it does:

May only be used after the UnZoom pointer tool has been used. Returns the chart return to the previously defined Zoom area.

How to use it:

Click the **ReZm** button.

Undo Zoom (UnZm)

What it does:

May only be used after the Zoom pointer tool has been used. Returns the chart to its previous unzoomed state.

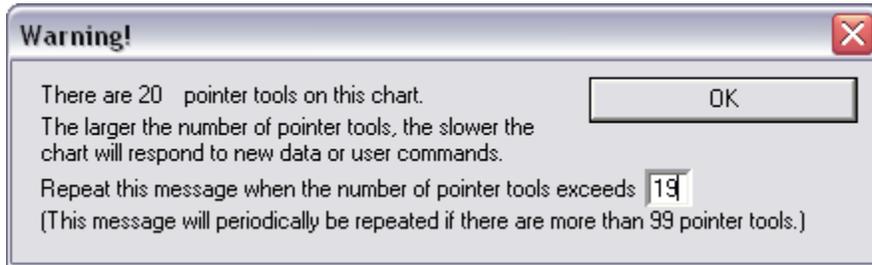
How to use it:

Click the **UnZm** button.

Adding and Removing Pointer Tools

There are two ways to add Pointer Tools to the chart: the chart right-click menu and the Manage or Add Studies window.

Because placing a large number of pointer tools on a chart can impact performance, the system warns you when you exceed the set number of pointer tools:



You can change the number of pointer tools to exceed before the warning is displayed by typing a different number.

To add Pointer Tools

1. Right-click within the chart window.
2. Point to **Pointer Tools**.
3. Click the tool name.

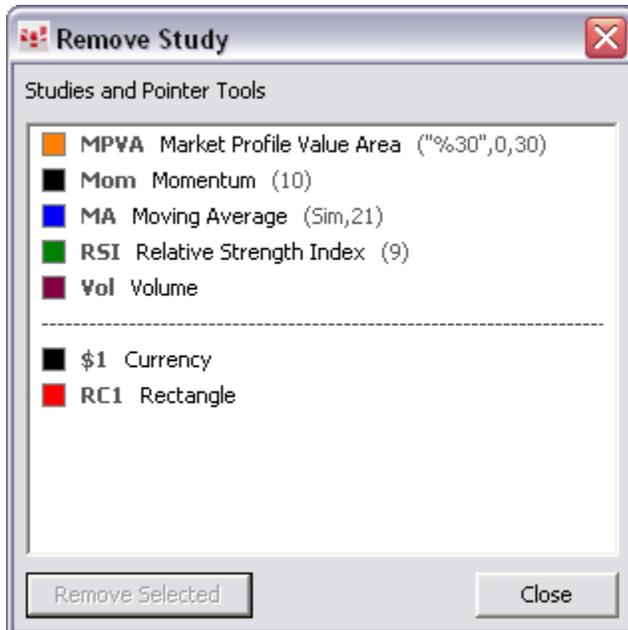
You can also click a Pointer Tool button on the toolbar.

To add a pointer tool button on the toolbar

1. Click the **Studies** button.
2. Click the Pointer Tools tab.
3. Click the pointer tool button you want to add.
4. Click **Close**.

To remove Pointer Tools

This resizable window lists the studies and pointer tools on the chart, including the main display color and the associated parameters in parentheses.



There are several ways to remove pointer tools using this window. Select one or several tools, then:

- Press the **Delete** key on your keyboard;
- Click the **Remove Selected** button; or
- Double-click.

Once all tools and studies have been removed, the window closes automatically.

To select all studies and tools, press **Ctrl+A**. To select some tools and studies, hold down the **Ctrl** key while you select them.

Working with Pointer Tools

To change pointer tool parameters

1. Right-click within the **Chart** window.
2. Select **Modify <Pointer Tool> Parameters**.
3. Make the desired changes.
4. Click **OK**.

To change the pointer tool cursor back to mouse pointer

1. Right-click within the **Chart** window.
2. Point to **Pointer Tools**.
3. Click **None**.

You can also click on the pointer tool button on the chart toolbar. Notice that the pointer tool button changes color if it's on:



To adjust pointer tools

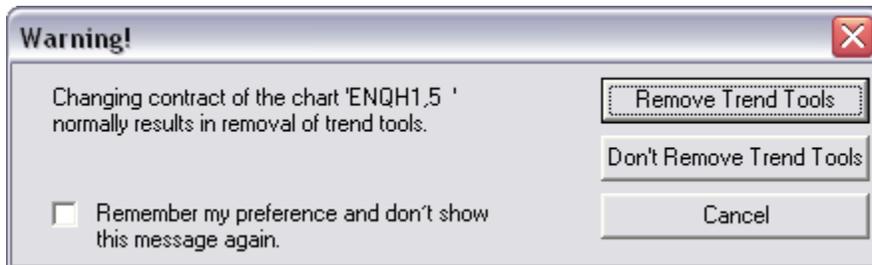
1. With the pointer tool off, click on the pointer tool line. The placement points will be highlighted like this:



2. Click one of the placement point. The placement points disappear.
3. Drag the mouse to move the pointer tool.
4. Release the mouse to place the line in the desired position.

To transfer pointer tools between charts

When you switch the contract on a chart that has pointer tools, this warning window is displayed:



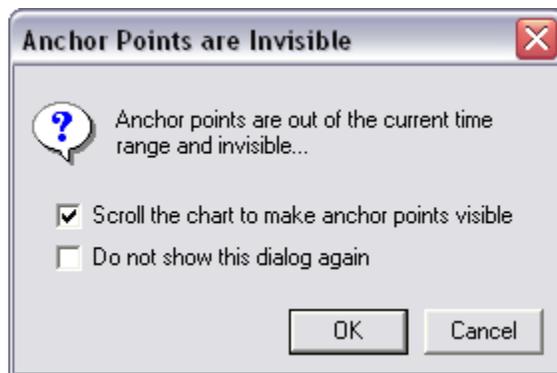
- Click **Remove Trend Tools** to remove the trend tools and switch contract.
- Click **Don't Remove Trend Tools** to keep the trend tools and switch contract.
- Click **Cancel** to prevent changing the symbol.
- Select **Remember my preference and don't show this message again**, and the system automatically turns the Confirm Tool Loss warning off.

You can [turn this warning off](#) on the **Misc** tab in Chart Preferences.

To view a pointer tool that is off the chart

If you have scrolled your chart so your initial anchor point is no longer visible, **CQG** makes it easier to re-visualize both of your anchor points.

1. Click the pointer tool. This window is displayed:



2. Make sure the **Scroll the chart to make anchor points visible** check box is selected.
3. Click **OK**. The chart will move, so that the anchor point is visible.
4. To go back to the second anchor point, click the red arrow.

Basic Studies

CQG offers almost three dozen standard studies that you can apply to charts. All of these studies have an associated set of parameters that you can use to change the display or the calculation of these studies.

See also: [Pre-Trade Studies](#) and [Trading Studies](#).

Accumulation/Distribution (A_D)

The ACC/DIST study reports a cumulative total that is calculated as follows:

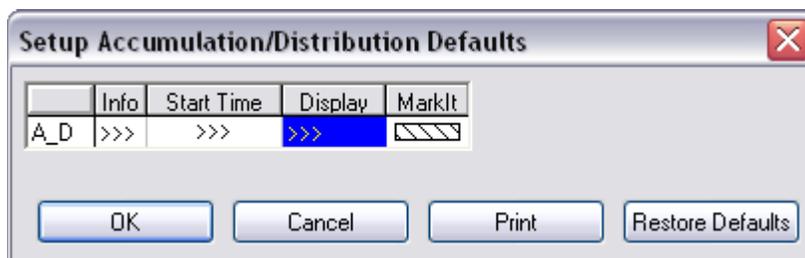
True Low is defined as the lesser of the current low or the previous close. True High is defined as the greater of the current high or the previous close.

If the current close is higher than the previous close, add the absolute value of the difference between the current close and the True Low to the prior Accumulation/Distribution value. In other words: $AD = |Current\ Close - True\ Low| + Prior\ A/D\ value$.

If the current close is lower than the previous close, subtract from the previous day's Accumulation/Distribution value the absolute value of the difference between the current close and the True High. In other words: $AD = Prior\ A/D\ value - |Current\ Close - True\ High|$

If the current close is equal to the previous close, the Accumulation/Distribution total is unchanged from the previous day.

Accumulation/Distribution Parameters



- **Start Time:** Displays the Define Bar Range window, allowing you to define the time frame (in bars or days) for the study. Enter a date and/or time or number of days or bars back from the current bar to indicate the earliest bar.
- [Display](#)
- [MarkIt](#)

Accumulative Swing Index (ASI)

The Accumulative Swing Index is a cumulative total of the Swing Index. According to J. Welles Wilder, the Swing Index seeks to isolate the "real" price by comparing the relationships between the current prices (open, high, low, close) and the previous period's prices. Wilder used this index as the basis for a trend-following system.

The formula for the Swing Index is as follows:

$$50 * \left(\frac{C_2 - C_1 + 0.5 * (C_2 - O_2) + 0.25 * (C_1 - O_1)}{R} \right) * \frac{K}{L}$$

where:

K = the largest absolute value of:

- 1) $H_2 - C_1$
- 2) $L_2 - C_1$

L = Value of a limit move in one direction (use CSpec or the exchange's Web site to look up this value)

O_1 = Previous Bar's Open

H_1 = Previous Bar's High

L_1 = Previous Bar's Low

C_1 = Previous Bar's Close

O_2 = Current Bar's Open

H_2 = Current Bar's High

L_2 = Current Bar's Low

C_2 = Current Bar's Close.

To obtain " R ", first determine the largest absolute value of:

- 1) $H_2 - C_1$
- 2) $L_2 - C_1$
- 3) $H_2 - L_2$

if 1) is the largest,

$$R = |H_2 - C_1| - 0.5 * |L_2 - C_1| + 0.25 * |C_1 - O_1|$$

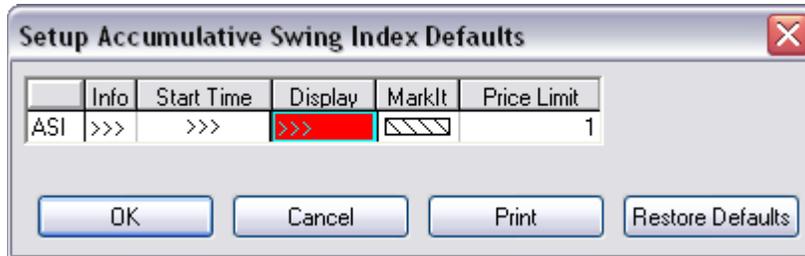
if 2) is the largest,

$$R = |L_2 - C_1| - 0.5 * |H_2 - C_1| + 0.25 * |C_1 - O_1|$$

if 3) is the largest,

$$R = |H_2 - L_2| + 0.25 * |C_1 - O_1|$$

Accumulative Swing Index Parameters



- **Start Time:** Opens the Define Bar Range window, allowing you to define the time frame (in bars or days) for the study. Enter a date and/or time, or number of days or bars back from the current bar to indicate the earliest bar.
- [Display](#)
- [MarkIt](#)
- **Price Limit:** Defines the price limit move. Note: For specific price limit information, see Contract Specifications. The default is 1. Changes this parameter affects only the scaling.

Adaptive Moving Average (AMA)

The Adaptive Moving Average (AMA) study is similar to the exponential moving average (EMA), except the AMA uses a scalable constant instead of a fixed constant for smoothing the data.

The formula for the exponential moving average is:

$$EMA_{(today)} = C * (price_{(today)} - EMA_{(yesterday)}) + EMA_{(yesterday)}$$

C is a smoothing constant where $C = 2/(N+1)$, and N is a number used to approximate a simple moving average. C ranges between 0 and 1. For example, to use an EMA with similar characteristics to a 10-bar simple moving average, use $N = 10$. Therefore, $C = 2/(10+1) = 2/11 = 0.1818$.

The formula for the AMA is:

$$AMA_{(today)} = SC * (price_{(today)} - AMA_{(yesterday)}) + AMA_{(yesterday)}$$

Where SC = Scalable Constant

The AMA uses two constants based on a fast EMA (short look back period) and a slow EMA (long look back period). The scalable constant, which has a range between 0 and 1, weights the AMA calculation between the two exponential moving averages by adjusting the constant. This weighting is based on the degree of market direction relative to market volatility. The higher the degree of trending by the market, the more the weighting shifts to the fast exponential moving average constant. If the market is moving in congestion, then the weighting shifts to the slow exponential moving average constant.

The scalable constant uses a market Efficiency Ratio to determine the degree of trend by the market. The ratio is direction relative to volatility.

Direction is the difference between the current bar's close and the close N bars back.

Volatility is the difference between each close over N bars back. The absolute value of each difference is summed:

ER = Abs(Direction/Volatility) where,

Direction = Price_(today) - Price_(N bars back)

and

$$Volatility = \sum_{t=1}^N Abs (Price_t - Price_{t-1})$$

Here, the volatility measurement is the sum of the absolute value of the one bar difference in closes over the look back period N. The default for N is 10 bars.

If the direction and the volatility readings are similar (i.e., the market is trending), the ratio approaches 1. If the direction and the volatility readings are not similar (i.e., the market is in congestion), the ratio approaches 0.

The Efficiency Ratio is used to scale between the two constants from the two exponential moving averages (fast and slow). The default values are 2-bar and 30-bar EMAs. Therefore, the default constants are as follows:

Fast = $2/(2+1)$ and Slow = $2/(30+1)$

Fast = 0.6667 and Slow = 0.0645

The formula for weighting or scaling the constant is as follows:

$$ER * (\text{Fast} - \text{Slow}) + \text{Slow} \text{ or the default version is } ER * (0.6667 - 0.0645) - 0.0645$$

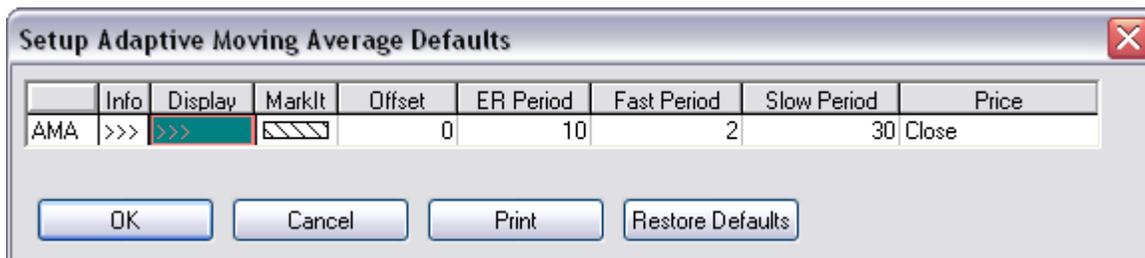
As stated earlier, if the market is trending, then ER will approach 1 and the scalable constant will be weighted towards the Fast constant in the formula above. If the market is in congestion, then ER will approach 0 and the scalable constant will be weighted towards the Slow constant.

Finally, the result from the formula above is squared.

$$SC = (ER * (\text{Fast} - \text{Slow}) + \text{Slow})^2$$

This causes the AMA to go flat when the market is in congestion because the ER approaches zero and the resulting smoothing constant is a very small number.

Adaptive Moving Average Parameters



- [Display](#)
- [MarkIt](#)
- **Offset:** Shifts the study curve to the left or to the right by a specified number of bars.
- **ER Period:** Defines the number of days used to calculate the Efficiency Ratio (direction/volatility ratio).
- **Fast Period:** Defines the Smoothing Constant by converting the specified period (N) using the formula $2/N+1$.
- **Slow Period:** Defines the Smoothing Constant by converting the specified period (N) using the formula $2/N+1$.
- **Price:** Determines the price used in the calculation.

Aroon Oscillator (AroonOSC)

The Aroon Oscillator is a trending study that measures whether an instrument is trending up, down, or consolidating. The Aroon study is composed of two lines, Aroon.Up and Aroon.Down, which measure the placement of the highest high or lowest low over a given period, measured as a percentage from 0 to 100. A high percentage for Aroon.Up and a low percentage for Aroon.Down indicates an uptrend, whereas the reverse indicates a downtrend.

The Oscillator is the difference of the Aroon.Up less Aroon.Down. Therefore, the range is +100 to -100. An uptrend would be values over 50, a downtrend would be values less than -50, and consolidation would be between those two marks.

Both studies use a period parameter. The Aroon study is comprised of two curves.

The example below is a 14-period Aroon study. To see different periods, modify the studies accordingly.

Study name: Aroon

Up

```
100 * (14 - If(High(@)= HiLevel(@,15), 0, If(High(@)[-1]= HiLevel(@,15),1,(If(High(@)[-2]=
HiLevel(@,15),2,(If(High(@)[-3]= HiLevel(@,15),3,(If(High(@)[-4]=
HiLevel(@,15),4,(If(High(@)[-5]= HiLevel(@,15),5,(If(High(@)[-6]=
HiLevel(@,15),6,(If(High(@)[-7]= HiLevel(@,15),7,(If(High(@)[-8]=
HiLevel(@,15),8,(If(High(@)[-9]= HiLevel(@,15),9,(If(High(@)[-10]=
HiLevel(@,15),10,(If(High(@)[-11]= HiLevel(@,15),11,(If(High(@)[-12]=
HiLevel(@,15),12,(If(High(@)[-13]= HiLevel(@,15),13,14)))))))))))))))))))/14
```

Or

```
100*(Period - "offset from current bar to the bar with largest high in the latest <Period+1>
bars")/Period
```

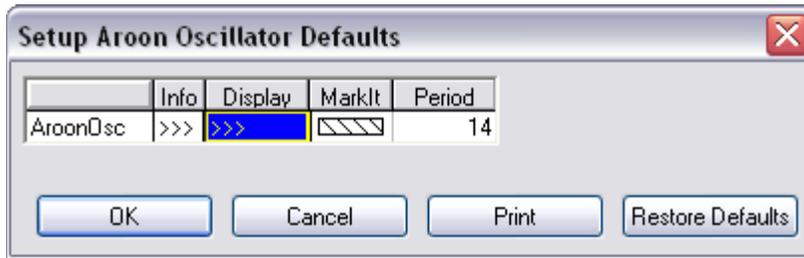
Down

```
100 * (14 - If(Low(@)=LoLevel(@,15), 0, If( Low(@)[-1]= LoLevel(@,15),1,(If( Low(@)[-2]=
LoLevel(@,15),2,(If( Low(@)[-3]= LoLevel(@,15),3,(If( Low(@)[-4]= LoLevel(@,15),4,(If(
Low(@)[-5]= LoLevel(@,15),5,(If( Low(@)[-6]= LoLevel(@,15),6,(If( Low(@)[-7]=
LoLevel(@,15),7,(If( Low(@)[-8]= LoLevel(@,15),8,(If( Low(@)[-9]= LoLevel(@,15),9,(If(
Low(@)[-10]= LoLevel(@,15),10,(If( Low(@)[-11]= LoLevel(@,15),11,(If( Low(@)[-12]=
LoLevel(@,15),12,(If( Low(@)[-13]= LoLevel(@,15),13,14)))))))))))))))))))/14
```

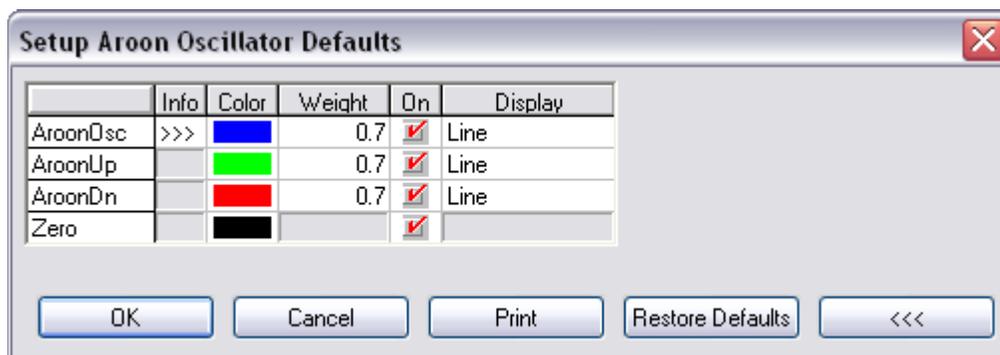
Or

```
100*(Period - "offset from current bar to the bar with lowest low in the latest <Period+1>
bars")/Period
```


Aroon Oscillator Parameters



- [Display](#): AroonUp and AroonDown can be turned on here.



- [MarkIt](#)
- **Period**: The time frame used for looking for the highest highs and the lowest lows.

Average Directional Movement Index (ADX)

A derivative of the directional movement indicator (DMI), ADX measures the strength of a market trend, not its direction. The higher the ADX, the more directional (stronger trend) the market has been. The lower the ADX, the less directional (weaker trend) the market has been.

It does not measure whether the market is rising or falling. Similarly, the OB/OS parameter attempts to set boundaries on the strength or weakness of the trend (whether an uptrend or a down trend), rather than the strength or weakness of the market.

There are 4 basic methods of using the study:

- The first is as a break out by stating that the ADX has risen through 20 or 25.
- The second is for trend exhaustion. The ADX is above 45 and now turns downwards.
- The third is for acceleration. The ADX rises in value by more than 3 between the previous bar and the current bar.
- The fourth is in conjunction with the DMI and is when the ADX crosses above the higher valued DMI line.

For system creation, remember that a sharp change to a new trend from a previous trend will not be picked by the indicator and that a falling ADX can be a good filter for creating sideways systems, especially if you create upward limits on its value.

The calculation is:

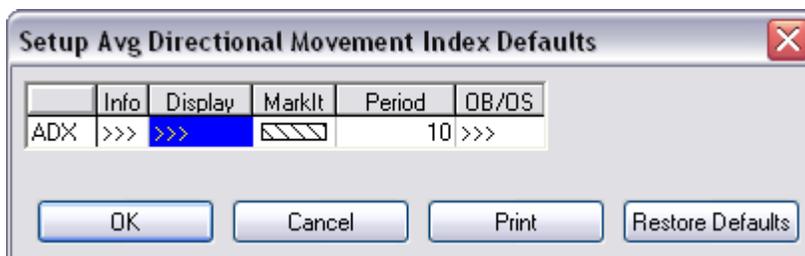
$$ADX = -MA[ABS((+DI - (-DI)) / (+DI + (-DI))), Smo, N] -$$

where n = the number of periods used in the calculation

i.e. ADX is smoothed average of absolute value of $(+DI - (-DI)) / (+DI + (-DI))$

Additionally, the ADX study reports an ADXATR value. The Average True Range of the ADX indicator is calculated by taking a smoothed average of the Average True Range of the price bars. In other words, the ATXADR simply reports the same value that the ATR study alone would report for the given price data.

Average Directional Movement Index Parameters



- [Display](#)
- [MarkIt](#)
- **Period:** Defines the time period for the analysis.
- [OB/OS](#)

Average True Range (ATR)

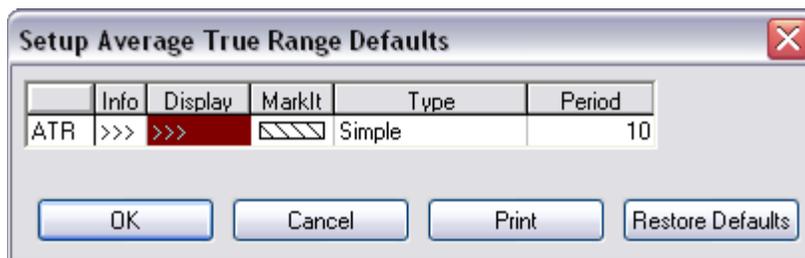
The Average True Range study takes the moving average of the true range over the specified period.

True Range = True High - True Low.

True High = The greater of the current bar's high or the close of the previous bar.

True Low = The lesser of the current bar's low or the close of the previous bar.

Average True Range Parameters



- [Display](#)
- [MarkIt](#)
- **Type:** The type of moving average used for the Average True Range calculations. Choices include: Simple, Smoothed, Exponential, Weighted, and Centered.
- **Period:** The time frame used for the moving average calculation.

Bar External Data (BarXData)

The three XData studies (BarXData, CVBXData, and TFXData) allow you to take sub-minute (millisecond) external data and plot three different types of charts within COG. These charts can be viewed as historical (static) or in a snap-shot/live mode (dynamic) depending on the data source.

New last bid, ask, or trade is detected if the price or volume is different from the last corresponding price or volume. If the current line has more than one entity changed, then the order of quotes is bid, ask, trade.

If a line does not have a bid, ask, or trade, then the corresponding quote is cleared. Missing values in the middle of a row are indicated with a comma.

Markets with good trade activity that will give the granularity needed for millisecond analytical decision making are best for this study.

These studies are used with an external data source that is sub-minute and either an historic ASCII data set or a continuously appended ASCII data set.

The data file should be represented in this column order: Date, Time, Bid, BidVolume, Ask, AskVolume, Trade, TradeVolume. The Trade column is used to determine the open, high, low, and close of the bars on minute or higher time-frame charts.

Also:

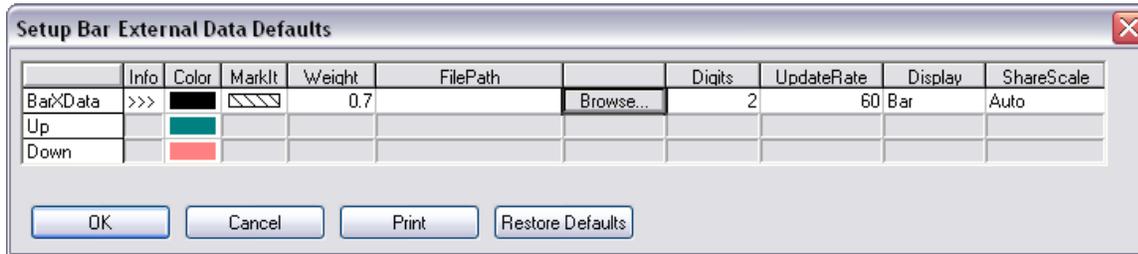
- The ASCII file must be tab-delimited (.txt file) or space-delimited (.prn file). File type .csv (comma-delimited) cannot be used.
- The first line of file should contain the contract description in this format: **Symbol: MySymbol, Description: MyDescription.**
- Each value represents the current state of last best bid, last best ask, and last trade for particular date and time.
- Date format is MM.DD.YY; time format is hh:mm:ss.iii where i is milliseconds.
- Prices are decimals and are displayed as is.
- Data must be ascending.

To use this study:

1. Add the study to the chart.
2. Right-click the chart, and select **Modify Study Parameters.**
3. Click the **Browse** button to find the data file you want to import.
4. Set other parameters.
5. Click **OK.**

The data from your file will be charted.

BarXData Parameters



- [Color](#)
- [MarkIt](#)
- [Weight](#)
- **FilePath:** Location of data file on your PC.
- **Digits:** Number of digits of price to chart.
- **UpdateRate:** How often you would like the system to check for changes in the data file.
- **Display:** Choose **Bar** or **Candle** for the bar display.
- [ShareScale](#)

Bollinger Bands® (BBnds)

The purpose of Bollinger Bands is to provide a relative definition of high and low. By definition prices are high at the upper band and low at the lower band. This definition can aid in rigorous pattern recognition and is useful in comparing price action to the action of indicators to arrive at systematic trading decisions.

A Bollinger Band consists of two lines, one line displayed above and the other below the user-specified moving average.



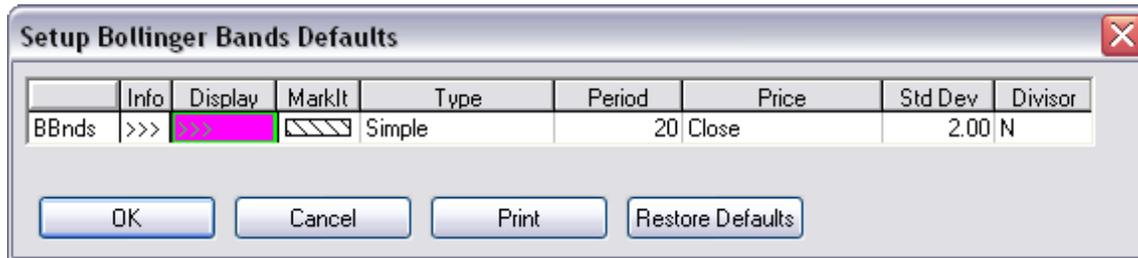
The distance between each line and the moving average line represents the number of Square Root Deviations of each price away from the moving average, multiplied by a user-specified constant.

The following steps are used to calculate a Bollinger Band:

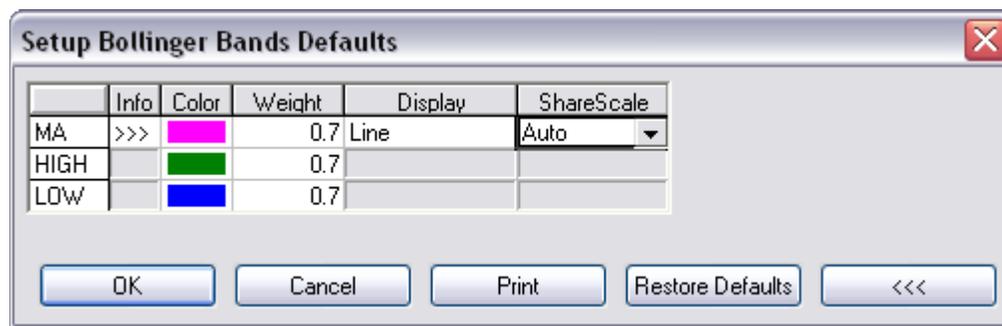
- Calculate a Moving Average based on the type, period, and price parameters.
- Calculate the Square Root Deviation.
- Multiply the calculated Square Root Deviation by the number specified via the **Std Dev** parameter in the Bollinger Band setup window.
- Add the calculated value to the Moving Average to produce the upper Bollinger Band line, and subtract the calculated value from the moving average to produce the lower Bollinger Band line.

For additional information, see <http://www.bollingerbands.com/>.

Bollinger Band Parameters



- [Display](#)



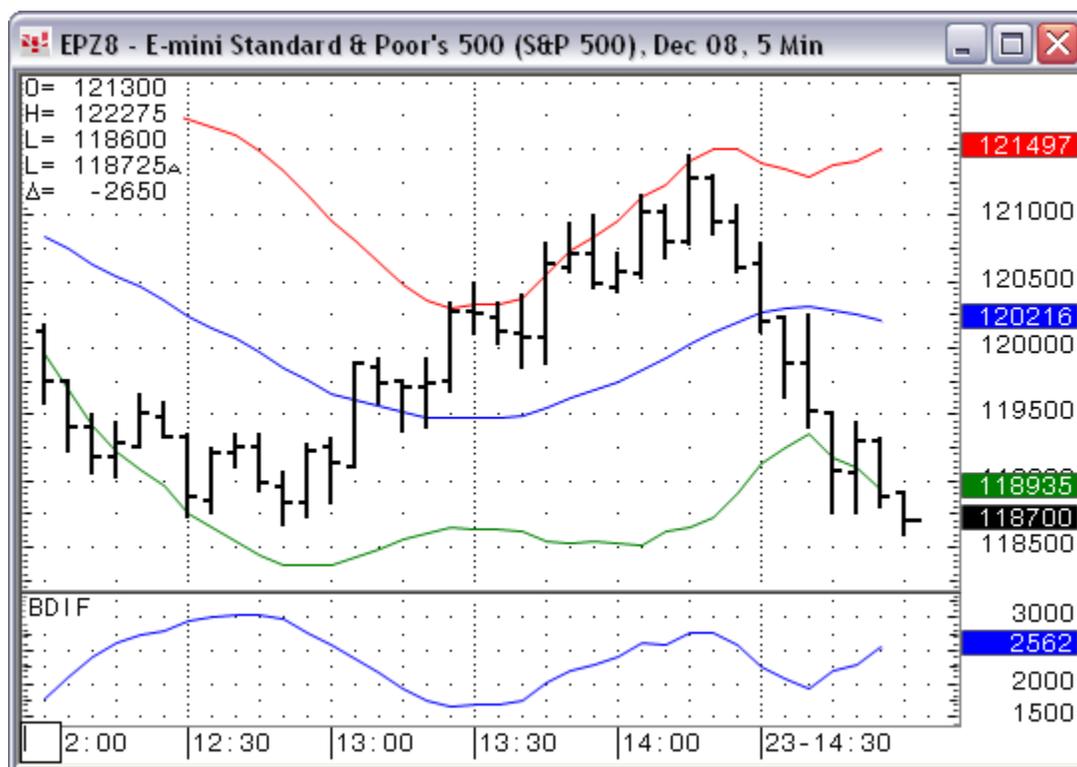
- [MarkIt](#)
- **Type:** The type of moving average used for the Average True Range calculations. Choices include: Simple, Smoothed, Exponential, Weighted, and Centered.
- **Period:** The time frame used for the moving average calculation.
- **Price:** Price used for calculation.
- **Std Dev:** The multiplier of the Standard Deviation used to derive the upper and lower bands.
- **Divisor:** N = a standard deviation calculation; N-1 = population standard deviation calculation.

Bollinger Band Difference (BDIF)

The Bollinger Band Difference represents the width or the distance between the upper and lower Bollinger Band lines.

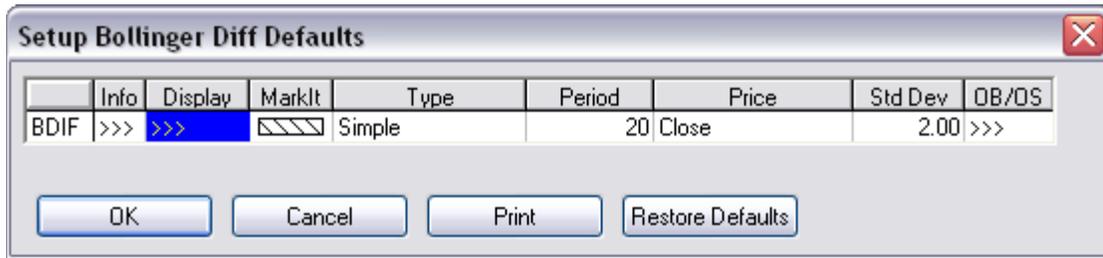
This study can be used to measure the volatility (relative ranges) between the highs and the lows. The trader or analyst is looking for an increase in range or a decline.

An increase in range signals the outbreak of the market in one direction at the beginning of a trend. If the increase continues this is usually a sign for a trend. A decrease indicates in most cases a consolidation area with very little price action.



For additional information, see <http://www.bollingerbands.com/>

Bollinger Band Difference Parameters



- [Display](#)
- [MarkIt](#)
- **Type:** The type of moving average used for the Average True Range calculations. Choices include: Simple, Smoothed, Exponential, Weighted, and Centered.
- **Period:** The time frame used for the moving average calculation.
- **Price:** Price used for calculation.
- **Std Dev:** The multiplier of the Standard Deviation used to derive the upper and lower bands.
- [OB/OS](#)

CVB External Data (CVBXData)

The three XData studies ([BarXData](#), CVBXData, and [TFXData](#)) allow you to take sub-minute (millisecond) external data and plot three different types of charts within COG. These charts can be viewed as historical (static) or in a snapshot/live mode (dynamic) depending on the data source.

You can apply large trade detection to volume using the **Aggressive** parameter.

Markets with good trade activity that will give the granularity needed for millisecond analytical decision-making are best for this study.

All of these studies are used with an external data source that is sub-minute and either an historic ASCII data set or a continuously appended ASCII data set.

The data file should be represented in this column order: Date, Time, Bid, BidVolume, Ask, AskVolume, Trade, TradeVolume. The Trade and TradeVolume column are used to create constant volume bar charts.

Also:

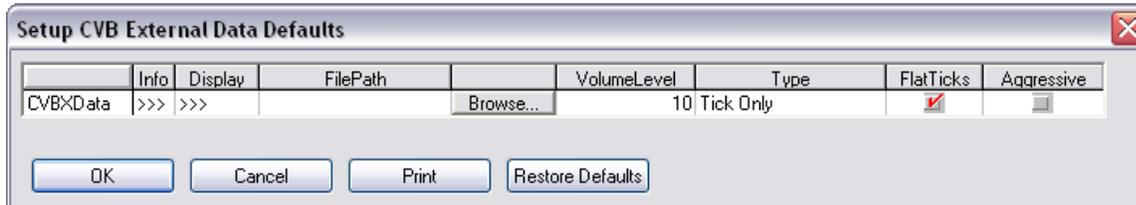
- The ASCII file must be tab-delimited (.txt file) or space-delimited (.prn file). File type .csv (comma-delimited) cannot be used.
- The first line of file should contain the contract description in this: **Symbol: MySymbol, Description: MyDescription**.
- Each value represents the current state of last best bid, last best ask, and last trade for particular date and time.
- Date format is MM.DD.YY; time format is hh:mm:ss.iii where i is milliseconds.
- Prices are two digits and are displayed as is.
- Data must be ascending.

To use this study:

6. Add the study to a chart.
7. Right-click the chart, and select **Modify Study Parameters**.
8. Click the **Browse** button to find the data file you want to import.
9. Set other parameters.
10. Click **OK**.

The data from your file will be charted.

CVBXData Parameters



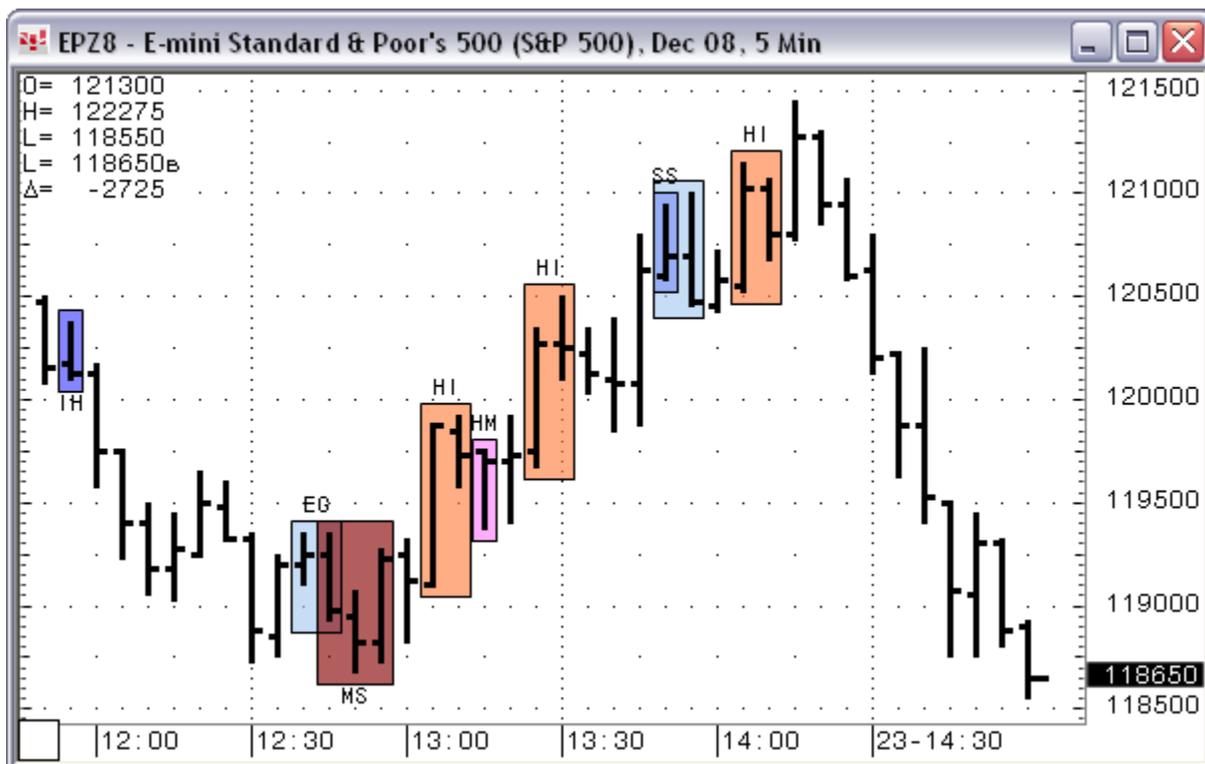
- [Display](#)
- **FilePath:** Location of data file on your PC.
- **VolumeLevel:** Selects the volume covered by each bar.
- **Type:** Select **Tick Only** or **Exchange Only**.
- **FlatTicks:** If checked, 0-plus and 0-minus ticks are used when building bars.
- **Aggressive:** If checked, large trade detection is applied to quotes. Consecutive trades are considered one large trade if all of the following conditions are met:
 - They all happened on the same side.
 - There were no intervening opposite side trades among them (trade that is split between bid and ask is not considered intervening).
 - They happened within 50 milliseconds of each other (TFlow only).
 - No BBA updates occurred between trades.

If consequent trades are combined into one large trade, they are considered one tick. If trades inside one large trade were executed at different prices, then all prices are used to construct the new OHLC of the CVB bar. Applies only to tick volume. Must be used with flat ticks. Requires enablement.

Candlestick Formations (CndIFm)

Candlestick Formations consist of one, two, or three line (bar) patterns. These patterns compose the formations described in Steve Nison's [Japanese Candlestick Charting Techniques](#) (Prentice Hall, 2001).

Text symbols (HI) appear either at the top or bottom of each formation. A symbol at the top indicates a bearish formation, whereas a symbol at the bottom indicates a bullish formation. The Double Doji symbol "DD?" will appear at the top of a formation; however, the question mark indicates that this formation is neither bearish nor bullish. Candlestick formations appear as overlays in the Chart window in the color indicated by the user in [parameters](#).



The one-bar formations supported by CQG are:

- [Hammer](#) (HR)
- [Hanging Man](#) (HM)
- [Inverted Hammer](#) (IH)
- [Shooting Star](#) (SS)

The two-bar formations supported by CQG are:

- [Engulfing Bearish](#) (EG)
- [Engulfing Bullish](#) (EG)
- [Dark Cloud](#) (DC)
- [Double Doji](#) (DD?)

[Harami Bearish](#) (HI)

[Harami Bullish](#) (HI)

[Piercing Line](#) (PL)

The three-bar formations supported by CQG are:

[Morning Star](#) (MS)

[Morning Doji Star](#) (MDS)

[Evening Star](#) (ES)

[Evening Doji Star](#) (EDS)

Hammer

The Hammer formation is a bullish formation and therefore its symbol (HR) will always appear at the bottom of the formation. It represents the opposite of the Hanging Man formation. Four criteria establish a Hammer formation:

- The market has to be in a clearly definable down-trend, even if the trend is short term.
- A real body that is at the upper end of the trading range (body color is not important).
- A long lower shadow, which should be twice the height of the height of the real body.
- A very short, if any, upper shadow, which should be at least twice as short as the real body.

This formation requires a value for the Trend parameter.

Hanging Man

The Hanging Man formation is a bearish formation and therefore its symbol (HM) will always appear at the top of the formation. It represents the opposite of the Hammer formation. Four criteria establish a Hanging Man formation:

- The market has to be in a clearly definable up-trend, even if the trend is short term.
- A real body that is at the upper end of the trading range (body color is not important).
- A long lower shadow should be twice the height of the height of the real body.
- A very short, if any, upper shadow, which should be at least twice as short as the real body.

This formation requires a value for the Trend parameter.

Inverted Hammer

The Inverted Hammer formation is a bullish formation and therefore its symbol (IH) will always appear at the bottom of the formation. It represents the opposite of the Shooting Star formation. Four criteria establish an Inverted Hammer formation:

- The market has to be in a clearly definable down-trend, even if the trend is short term.
- A real body that is at the lower end of the trading range (body color is not important).
- A long upper shadow, which should be twice the height of the height of the real body.
- A short, if any, lower shadow, which should be at least twice as short as the real body.

An ideal Inverted Hammer formation is one that occurs after a downtrend or at the bottom of a congestion zone. Also, the larger the gap between the real body of the formation and the real body of the preceding bar, the stronger the confirmation. This, however, does not affect the highlighting of the formation in any way.

This formation requires a value for the Trend parameter.

Shooting Star

The Shooting Star formation is a bearish formation and therefore its symbol (SS) will always appear at the top of the formation. It represents the opposite of the Inverted Hammer formation. Four criteria establish a Shooting Star formation:

- The market has to be in a clearly definable up-trend, even if the trend is short term.
- A real body that is at the lower end of the trading range (body color is not important).
- A long upper shadow should be twice the height of the height of the real body.
- A very short, if any, lower shadow, which should be at least twice as short as the real body.

An ideal Shooting Star formation is one that occurs after an up-trend or at the top of a congestion zone. Also, the larger the gap between the real body of the formation and the real body of the preceding bar, the stronger the confirmation. This, however, does not affect the highlighting of the formation in any way.

This formation requires a value for the Trend parameter.

Engulfing Bearish

The Engulfing Bearish formation is, of course, a bearish formation and therefore its symbol (EG) will always appear at the top of the formation. It represents the opposite of the Engulfing Bullish formation. Three criteria establish an Engulfing Bearish formation:

- The market has to be in a clearly definable up-trend, even if the trend is short term.
- Of the 2 candlesticks in the formation, the second candle's real body must engulf the first candle's real body.
- The second real body of the formation should be "down" while the first real body should be "up."

This formation requires a value for the Trend parameter.

Engulfing Bullish

The Engulfing Bullish formation is, of course, a bullish formation and therefore its symbol (EG) will always appear at the bottom of the formation. It represents the opposite of the Engulfing Bearish formation. Three criteria establish an Engulfing Bullish formation:

- The market has to be in a clearly definable downtrend, even if the trend is short term.
- Of the 2 candlesticks in the formation, the second candle's real body must engulf the first candle's real body.
- The second real body of the formation should be "up" while the first real body should be "down."

This formation requires a value for the Trend parameter.

Dark Cloud

The Dark Cloud formation is a bearish formation and therefore its symbol (DC) will always appear at the top of the formation. It represents the opposite of the Piercing Line formation. Two criteria establish a Dark Cloud formation:

- The first real body of the formation is a "up."
- The second real body's price opens above the prior session's high; however, by the end of the second session, the close has penetrated at least 1/2 way down into the prior session's "up" real body.

The formation occurs after an up-trend or, at times, at the top of a congestion band. This, however, doesn't affect the highlighting of the formation in any way.

This formation does not require a Trend parameter or Range parameter.

Double Doji

The Double Doji formation is neither a bullish or bearish formation, but represents a condition in which the open and close for the first session are the same, followed by a second session in which the open and close are again the same. The symbol (DD?) will always appear at the top of the formation.

This formation does not require a Trend parameter or Range parameter.

Harami Bearish

The Harami Bearish formation is, of course, a bearish formation and therefore its symbol (HI) will always appear at the top of the formation. It represents the opposite of the Harami Bullish formation. Four criteria establish a Harami Bearish formation:

- The market has to be in a clearly definable up-trend, even if the trend is short term.
- The first real body of the formation is longer than an average real body in given range.
- Of the 2 candlesticks in the formation, the first candle's real body must engulf the second candle's SMALL real body (generally, the smaller the second body, the more potent the formation; the formation is highlighted if it is at least twice as short as the first one).
- It is NOT a requirement that the real bodies of the candlesticks be opposite colored (that is, "up" vs. "down").

This formation requires values for both the Trend parameter and Range parameter.

Harami Bullish

The Harami Bullish formation is, of course, a bullish formation and therefore its symbol (HI) will always appear at the bottom of the formation. It represents the opposite of the Harami Bearish formation. Four criteria establish a Harami Bullish formation:

- The market has to be in a clearly definable downtrend, even if the trend is short term.
- The first real body of the formation is longer than an average real body in the given range.
- Of the 2 candlesticks in the formation, the first candle's real body must engulf the second candle's SMALL real body (generally, the smaller the second body, the more potent the formation; the formation is highlighted if it is at least twice as short as the first one).
- It is NOT a requirement that the real bodies of the candlesticks be opposite colored ("up" vs. "down").

This formation requires values for both the Trend parameter and Range parameter.

Piercing Line

The Piercing Line formation is a bullish formation and therefore its symbol (PL) will always appear at the bottom of the formation. It represents the opposite of the Dark Cloud formation. Two criteria establish a Piercing Line formation:

- The first real body of the formation is a "down."
- The second real body's price opens below the prior session's low; however, by the end of the second session, the closing price has penetrated at least 1/2 way up into the prior session's "down" real body.

The formation occurs after a downtrend or, at times, at the bottom of a congestion band; however, it doesn't affect the highlighting of the formation.

This formation does not require a Trend parameter or Range parameter.

Morning Star

The Morning Star formation is a 3-bar bottom reversal pattern and therefore a bullish formation. Its symbol (MS) will always appear at the bottom of the formation. It represents the opposite of the Evening Star formation. The following criteria establish a Morning Star formation:

- The first real body of the formation is a strong (its real body's length is larger than the average in the given range) "down."
- The second candlestick has a small real body (at least twice as short as the first candle's real body) which gaps lower from the first real body (may either be an "up" or "down" real body).
- The third candlestick MUST be an "up" real body whose closing price has penetrated at least 1/2 way up into the first candlestick's "down" real body.

An ideal Morning Star formation would have a gap before and after the second real body; however, a gap between the second and third bodies is rare (and not accounted for by the program).

This formation requires a value for the Range parameter.

Morning Doji Star

The Morning Doji Star formation is a 3-bar bottom reversal pattern and therefore a bullish formation. Its symbol (MDS) will always appear at the bottom of the formation. It represents the opposite of the Evening Doji Star formation. The following criteria establish a Morning Doji Star formation:

- The first real body of the formation is a strong (its real body length is larger than the average in the given range) "down."
- The second candlestick is a Doji (that is, open price is equal to close price) which gaps lower from the first real body.
- The third candlestick MUST be an "up" real body whose closing price has penetrated at least 1/2 way up into the first candlestick's "down" real body.

This formation requires a value for the Range parameter.

Evening Star

The Evening Star formation is a 3-bar top reversal pattern and therefore a bearish formation. Its symbol (ES) will always appear at the top of the formation. It represents the opposite of the Morning Star formation. The following criteria establish an Evening Star formation:

- The first real body of the formation is a strong (its real body length is larger than the average in the given range) "up."
- The second candlestick has a small real body (at least twice as short as the first candle's real body) which gaps above the first real body (may either be an "up" or "down" real body).
- The third candlestick MUST be a "down" real body whose closing price has penetrated at least 1/2 way down into the first candlestick's "up" real body.

An ideal Evening Star formation would have a gap before and after the second real body, however, a gap between the second and third bodies is rare (and not accounted for by the program).

This formation requires a value for the Range parameter.

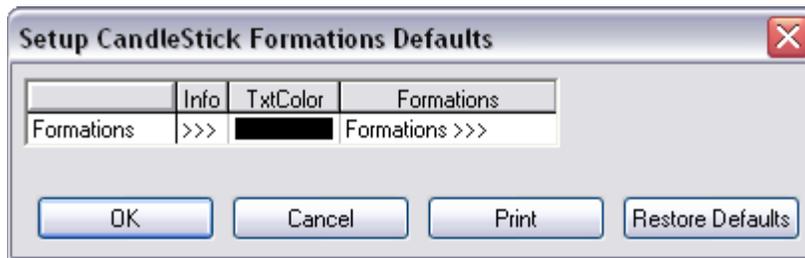
Evening Doji Star

The Evening Doji Star formation is a 3-bar bottom reversal pattern and therefore a bearish formation. Its symbol (EDS) will always appear at the top of the formation. It represents the opposite of the Morning Doji Star formation. The following criteria establish an Evening Doji Star formation:

- The first real body of the formation is a strong (its real body length is larger than the average in the given range) "up."
- The second candlestick is a Doji (that is, open price is equal to close price) which gaps above the first real body.
- The third candlestick MUST be a "down" real body whose closing price has penetrated at least 1/2 way down into the first candlestick's "up" real body.

This formation requires a value for the Range parameter.

Candlestick Formation Parameters



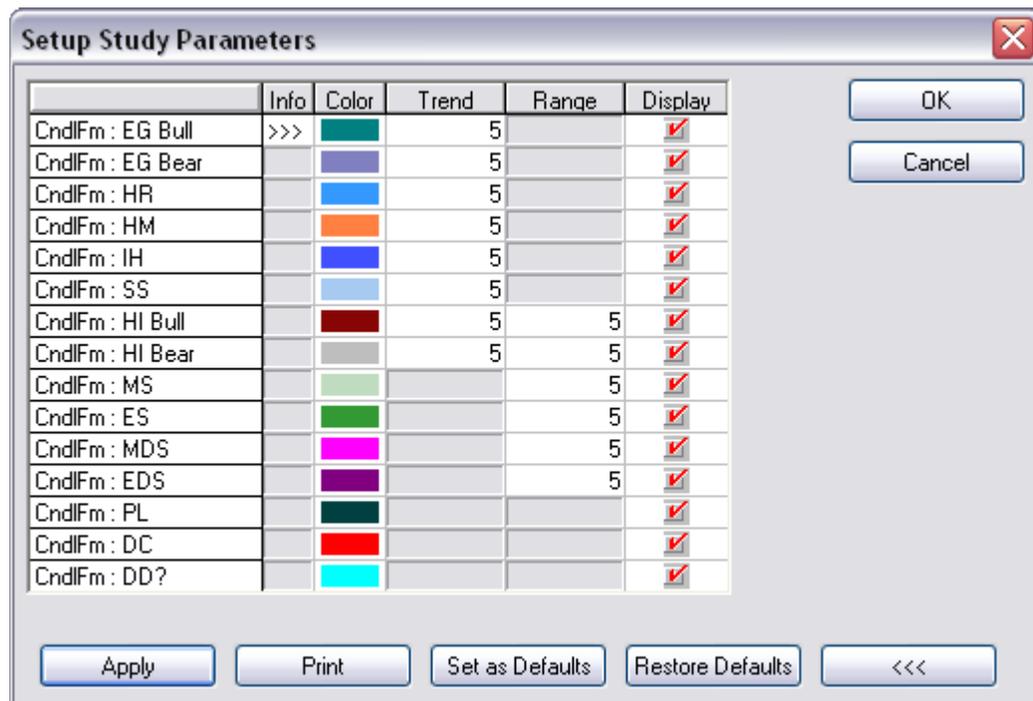
- **TxtColor:** Select the color for the bar labels.
- **Formations:** Choose the formations you want to display, and set color, trend, and range.

Color: Select the line color.

Trend: The number of bars considered in the trend indicator.

Range: The average length of the candlestick body as determined by the number of previous bars.

Display: Select the checkbox to display the line.



Channel (CHNL)

The Channel study plots two lines as an overlay on the bar chart. The two lines identify the highest high and the lowest low which occurred during the preceding user specified period.

Characteristics & Usage

Channel is an overlay study that may be used to identify a trading range. The highest high and the lowest low within the look back period are considered support and resistance levels.

A move above or below the Channel lines may be considered a breakout from the trading range.

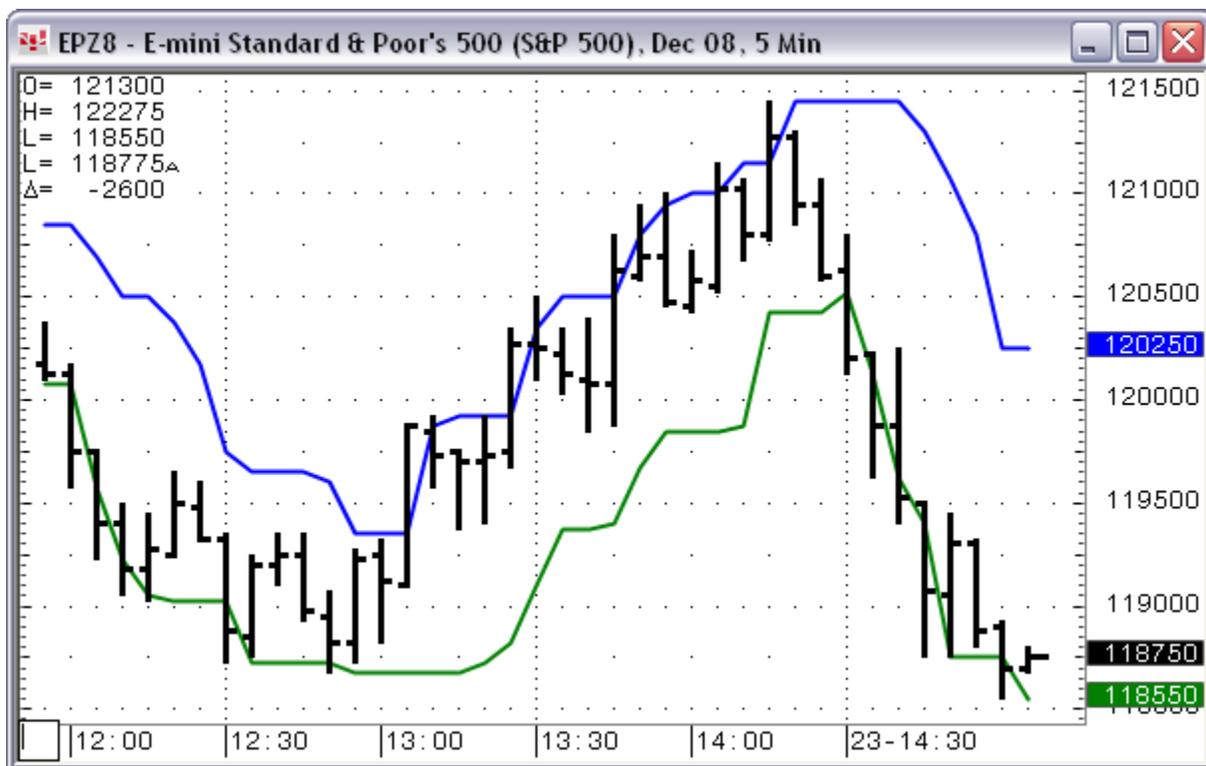
Channel is similar to the Level study found in the Functions group. The principal differences are:

- Channel identifies the highest high and lowest low in the user defined look back period. The Level study may be used to track the highest high and lowest low with different individual look back periods.
- Channel identifies the highest and lowest prices over the preceding period while Level includes the current bar's prices.
- The Channel study can be marked when a user-defined condition is true.

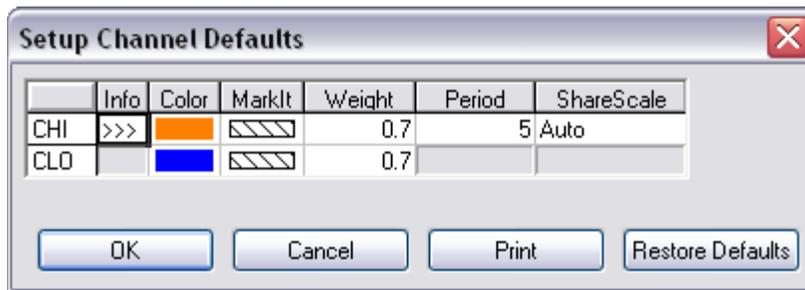
Calculation

CHI = Highest High over Period

CLO = Lowest Low over Period



Channel Parameters

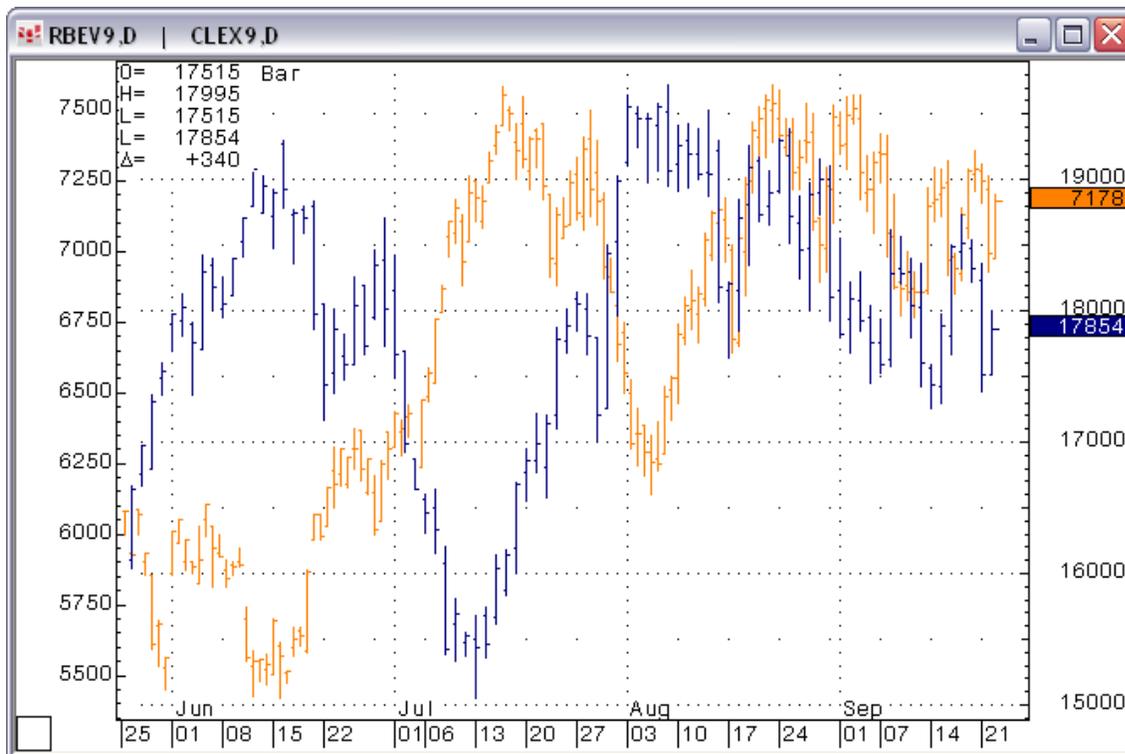


Set parameters for the HI and LO lines separately.

- [Color, Weight, Share Scale](#)
- [MarkIt](#)
- **Period:** Number of bars in the look back range.

Chart Analog Overlay (Analog)

The Analog study enables up to ten market's price actions to be displayed on the same chart. This study can be used with all chart types.



Traders use the analog study to compare how markets are trading relative to each other. One example is set up a percent bar chart with the preferences set to display the percentage change since the start of the year. Then, add other markets to see how each market has performed on a percentage basis since the start of the year.

When the chart is in analog mode, the **AnaLock** button appears on the study toolbar. When this button is turned on, the scales, both time and price, are locked for simultaneous scaling and scrolling of all charts. When this button is turned off, you can modify each chart's price and time scale separately. To change the scale, click and drag. Modification is made only to the foreground chart. To change the background chart, bring it to the foreground (right-click a bar for those options).

To overlay charts

Overlaying charts is helpful for comparisons of contracts, e.g. seasonals. Overlaying charts allows you to clearly see relationships, such as whether crude turns down every July.

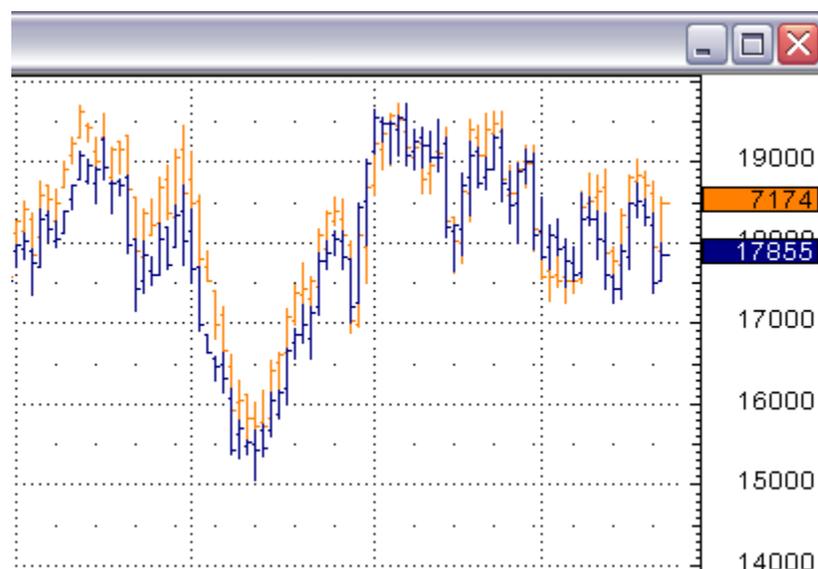
1. Open a daily chart.
2. **ENTER** to make sure the chart is scaled according to the default. That way, the overlay will be appropriately scaled.
3. Add the **Chart Analog Overlay** study. Notice the title bar has two symbols (the same symbol at this point).



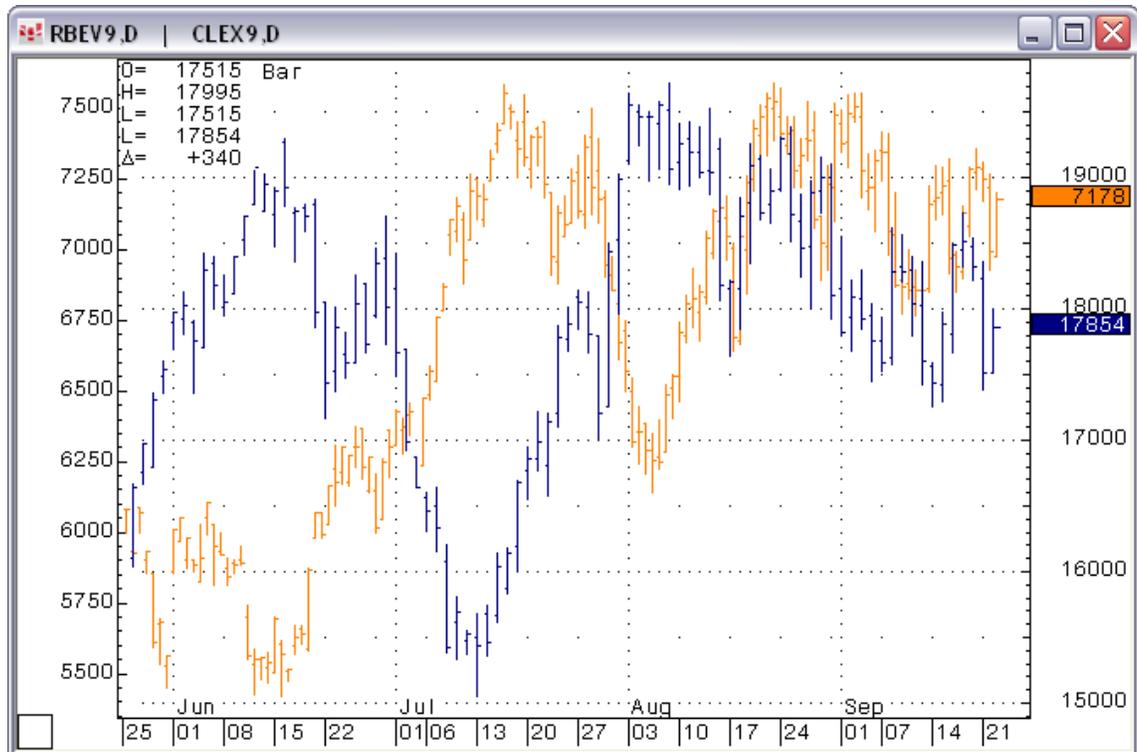
4. Enter a second symbol. The top chart takes that symbol, and the title bar names both symbols. In this case, RBE = top, CLE = bottom.



5. Modify the bars to create a contrast between the bar colors. CLE = orange, RBE = blue.



6. Right-click the price scale, and click **Place Scale to Left** to add a price scale for the bottom chart to the other side of the chart. RBE scale = right, CLE scale = left.



Note that if the contracts have a different digit handle (e.g. CLE has 1 and RBE has 2), then they cannot share the scale and will instead have a floating scale.

Other Chart Overlay Actions

- To scroll and scale all charts simultaneously, click the **Analock** button on the chart toolbar.
- To move the top chart, click and drag it.
- To bring the bottom chart to the top, right-click the bar of the bottom chart, and then click **Bring To Foreground**. You can also click **Send to Background** for the top chart.
- To chart both symbols on the same price scale, right-click the price scale, and then click **Same Scale**.



- Notice in the chart image that while the RBE prices fall on the grid in whole numbers, the CLE prices do not. Right-click the bar, and then click **Share Grids**, so that whole numbers fall on the grid for both charts.



Commodity Channel Index (CCI)

The Commodity Channel Index (CCI) measures the variation of the current price from its statistical mean. The CCI is an oscillator centered around zero. By definition, the CCI equals zero when the price equals the MA - it is positive when the price is above the average and negative when price is below. The default has the calculation going through the opening which means the value is fixed and therefore is far more useful as being a predictive indicator.

Characteristics & Usage

The CCI is sensitive to the acceleration and deceleration of price moving away from its MA. The CCI will move to extreme readings as the distance between the current price and its average becomes larger compared to the recent average of this deviation.

Dividing the current price deviation by the mean deviation makes CCI sensitive to market volatility. As the mean deviation increases, the CCI will become less sensitive to price movement. Conversely, the CCI will be more sensitive during a quiet/stable market.

The 0.015 constant in the denominator is employed so that 85% of the data points will fall between +100 and -100. The levels of +200/-200 may be considered extremes. However, the CCI is not bounded by maximum/minimum values.

The CCI is an oscillator study. Accordingly, users often define OB/OS conditions to identify when the market has attained an extreme level. Selling an OB market or buying an OS market is effective in a trading range market but is likely to result in large losses during a trending market, as the CCI may remain OB/OS for an extended period. Traders may want to use an additional condition or set of conditions to confirm a trading signal.

Alternatively, traders use the CCI as a tool to identify breakouts, since the indicator tries to show when the market is accelerating out of its recent range.

CCI, like other oscillators, may be used to identify divergence or confirmation of a new price extreme. A divergence indicates the market has lost its momentum or has become highly volatile and is likely to consolidate or reverse. Confirmation indicates the market is still accelerating away from its moving average and follow through is likely.

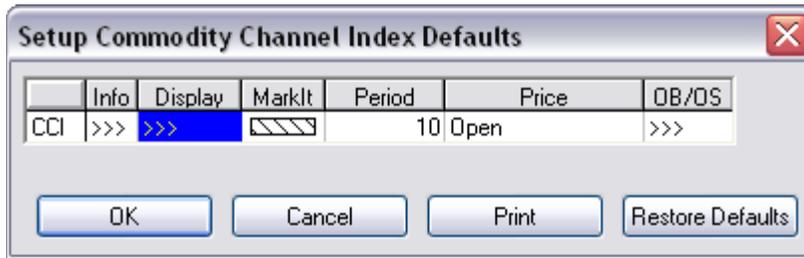
Calculation

MA = Moving Average of Price

Mean Deviation = Average[AbsoluteValue(Price - MA)]

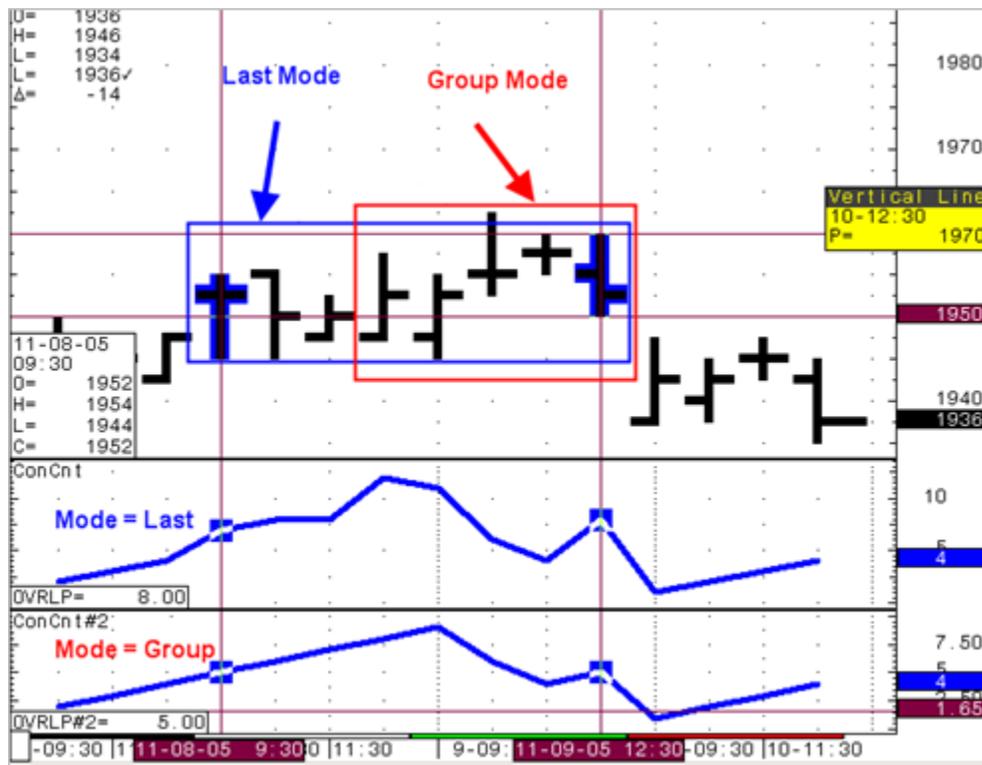
CCI = (Current Price - MA) / (0.015 * Mean Deviation)

Commodity Channel Index Parameters



- [Display](#)
- [MarkIt](#)
- **Period:** The time frame used for the moving average calculation.
- **Price:** Price used for calculation.
- [OB/OS](#)

Congestion Count (ConCnt)



This study helps the trader identify areas of congestions by either two methods – Last or Group. Last refers to the last bar sharing price range values with previous bars and group refers to every bar in the group sharing price range values. When the price range values are no longer shared with previous bars or grouped bars the counter is reset to one.

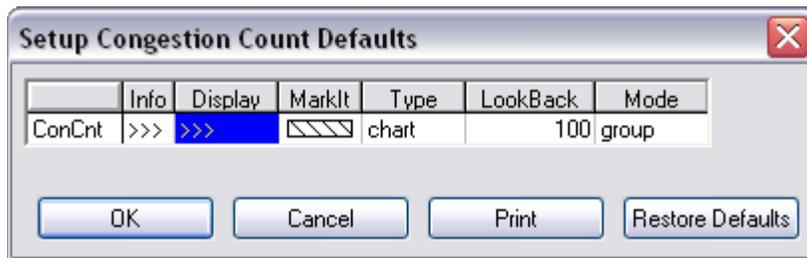
Use it during periods of tight trading ranges usually associated with low trade volume. The function will alert a trader of long periods of congestion with the possibility of a “break-out” in price and away from congestion.

Any market that is consolidating in close overlapping price ranges is a good market for this study.

The counter will reset itself to one when price values are no longer shared with previous bars or grouped bars. It will then increment when sharing takes place.

In the chart shown above, the blue rectangle shows all the bars that are included in the overlap count for Last. The 7 bars to the left of the selected bar overlap it. (The selected bar is included in the count.) The next bar to the left and outside the blue rectangle does not overlap with the selected bar, so it is not counted. The red rectangle only shows five bars in a group. Group mode requires each bar in a group to overlap all other bars in the group. Every bar must have at least one value in common with every other bar in the group. The rectangles do not appear on your chart. They have been added to make it easier to explain how this study works.

Congestion Count Parameters



- [Display](#)
- [MarkIt](#)
- **Type:** Choose between **chart** and **true**. Chart = use high and low outputs from the bars. True = use true lows and true highs.
- **LookBack:** The number of bars the study should compare to the current bar. Establishes the maximum value for the study.
- **Mode:** The mode determines what is counted in the congestion count. Last: Counts back from the selected bar to the last bar that has values overlapping the selected bar. Group: Counts back from the selected bar to the last bar that does not have overlapping values with all bars between it and the selected bar.

Delta Contours (Delta)

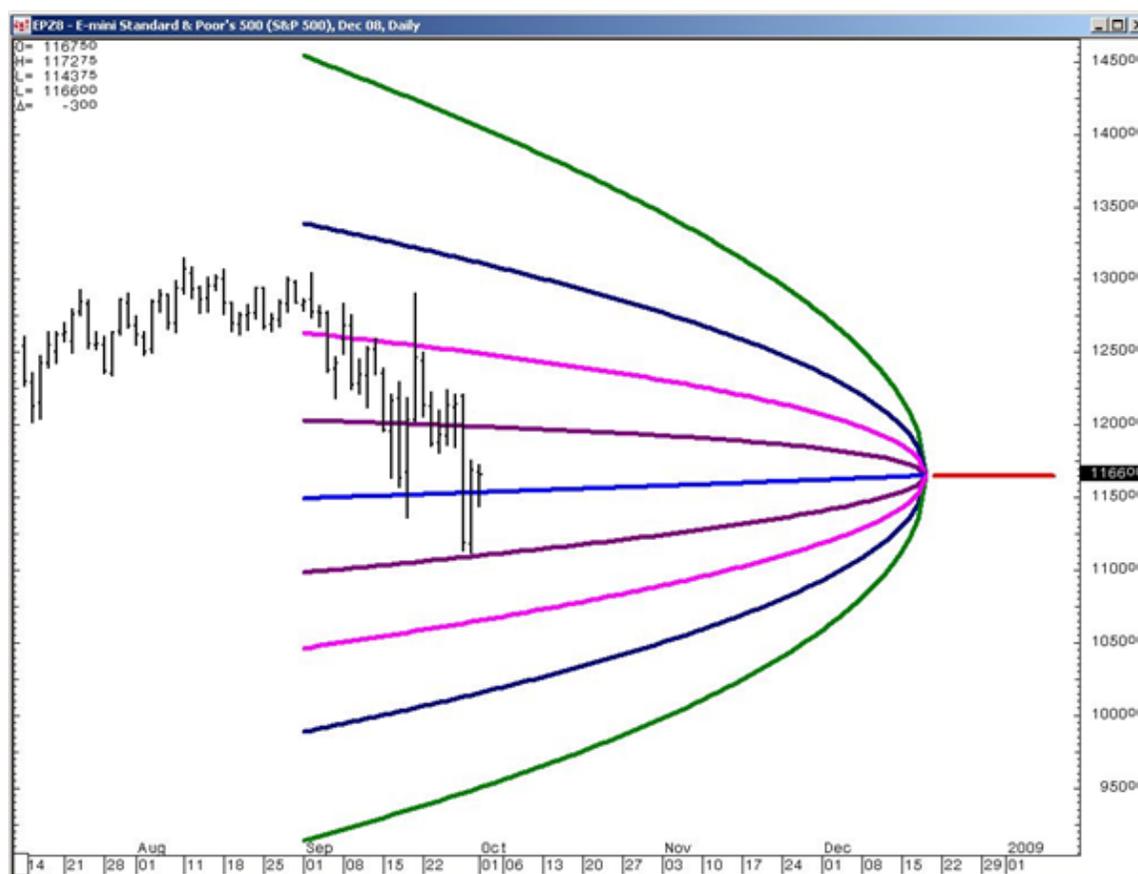
All options before expiry have a curved price profile. At any point in time, the slope of the curve, the delta, gives the equivalent futures exposure.

At any point in time the curvature, gamma, is the measure of how rapidly this futures exposure is changing. As time passes, options decay in value and approach the expiring kinked price profile. One way of representing the variation of deltas and gammas is a delta contour study.

The Delta Contours study shows the underlying price versus time for various delta values; the default range is from 0.0 – 1.0 and increasing in .1 increments. You are able to show 0-11 curves with arbitrary delta values.

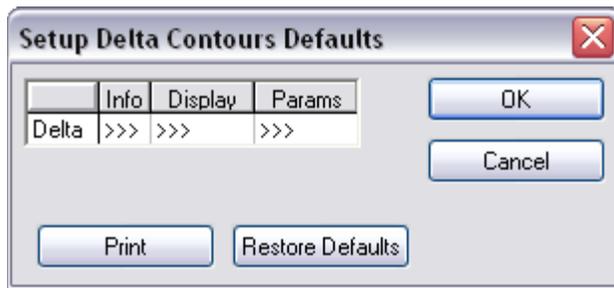
This study helps illustrate when to re-hedge a portfolio. For example, if re-hedging occurs whenever the delta increases or decreases by .1, then re-hedging will occur at the price levels represented by each contour.

Example: Looking at the Dec 08 E-mini S&P 500 (symbol EPZ8) daily chart, the display indicates that in the middle of September the deltas move from .5 up to .7 then down to almost .4.

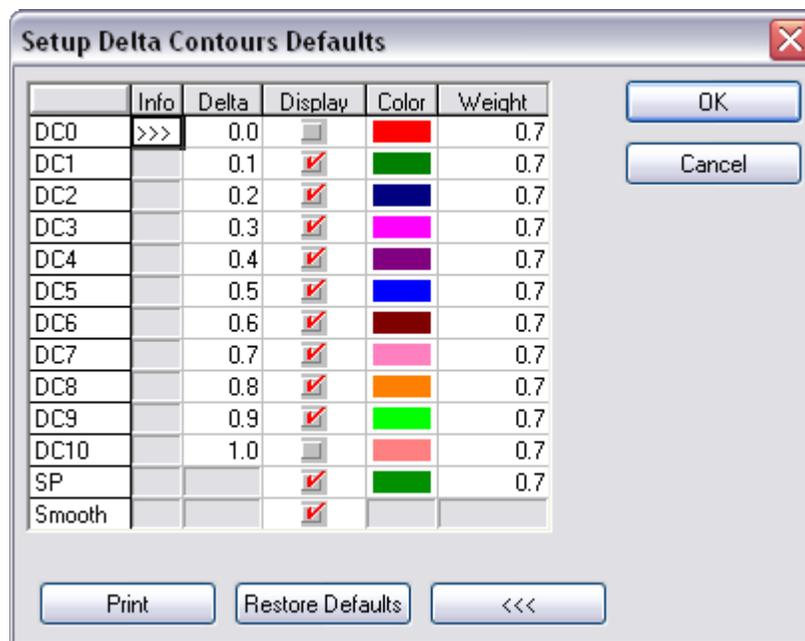


This study also clearly illustrates the effect of time on a portfolio. For example, the Delta Contours study shows that several weeks before expiration the deltas for the out-of-the-money strikes decrease while the deltas for the in-the-money strikes increase.

Delta Contours Parameters



- [Display](#): Set the **Delta** value here. Also includes a **Smooth** parameter that allows you to switch between the actual and a smoothed representation of the curves.



- Params



	Info	
Model	>>>	Default
Option Contract		NONE
Strike price		NONE
Volatility(%)		Default
Interest rate(%)		Default
Opened		10/24/2011
Quantity		1

Buttons: OK, Cancel, Print, Restore Defaults, <<<

Model: Choose model.

Option Contract: Select underlying instrument, expiration, and option type.

Strike price: Choose strike price.

Volatility(%): Choose **Historical** or **Implied** or enter your own.

Interest rate (%): Choose the default value or enter your own.

Opened: Enter the date the position was opened.

Quantity: Choose quantity.

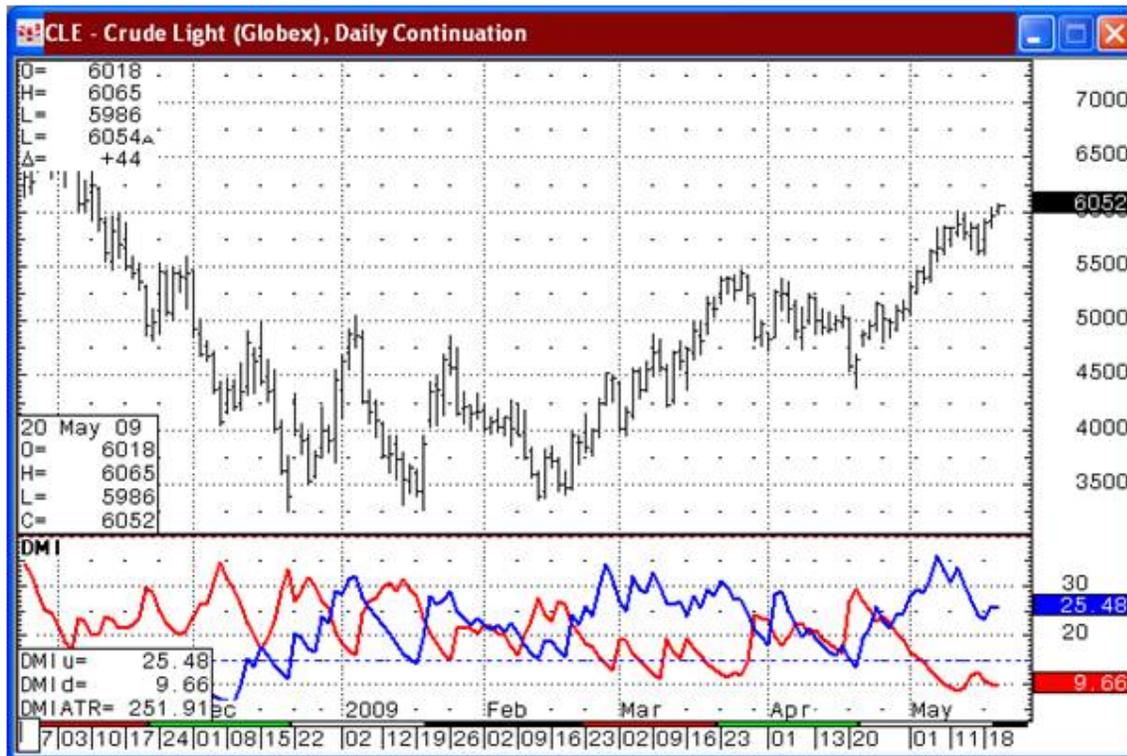
Directional Movement Index (DMI)

Developed by [Welles Wilder](#) and explained in his book, [New Concepts in Technical Trading Systems](#), the Directional Movement Indicator can be used by itself or as a filter on a trend-following system. The DMI helps determine if a security is trending.

In a DMI study, two lines are generated: DMIu and DMI d. The first line measures positive (upward) movement or buying pressure and the second number measures negative (downward) movement, reflecting selling pressure. The DMIu line crossing over the DMI d line is interpreted as a buy signal, and the DMIu line crossing below the DMI d line is considered a sell signal.

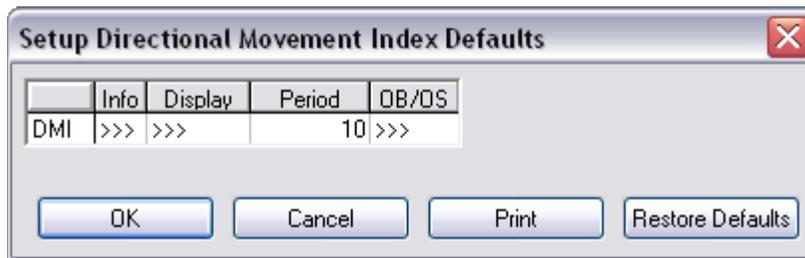
Wilder also suggests that when a crossover occurs, the extreme price (the high or low made during the trading interval of the crossover) can be interpreted as a reversal point.

This study is best used in any trending markets.

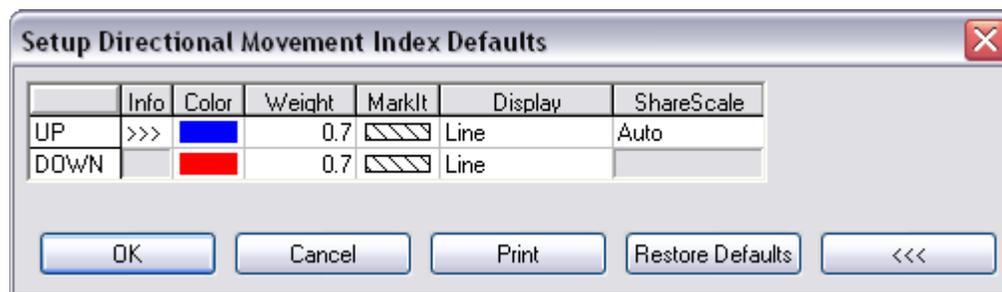


For additional information: <http://help.geckosoftware.com/40manual/indicators/dmi.htm>

Directional Movement Index Parameters



- [Display](#)



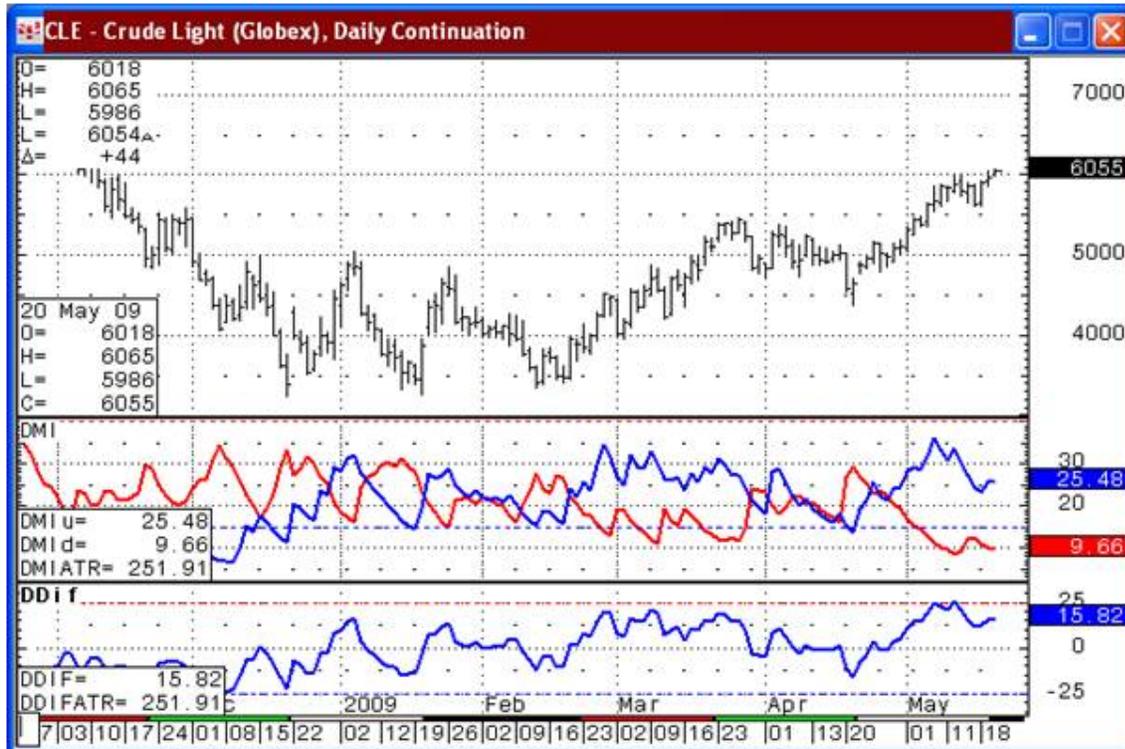
- **Period:** The time frame used for the moving average calculation.
- [OB/OS](#)

Directional Movement Index Difference (DDif)

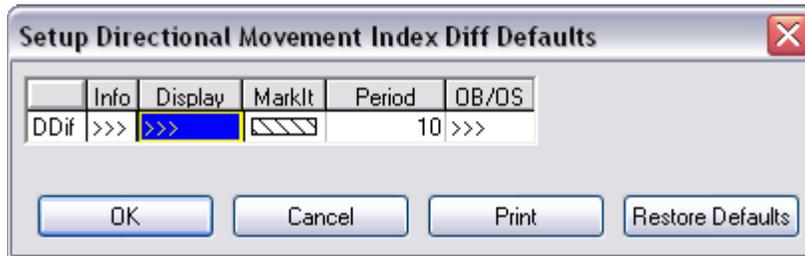
DMI Difference is a derivative of the [DMI](#) study.

It subtracts the DMI_d from the DMI_u line. Positive numbers indicate an uptrend and negative numbers indicate a downtrend. Numbers oscillating around zero indicate the absence of a trend.

This study is best used in any trending markets.



DMI Difference Parameters

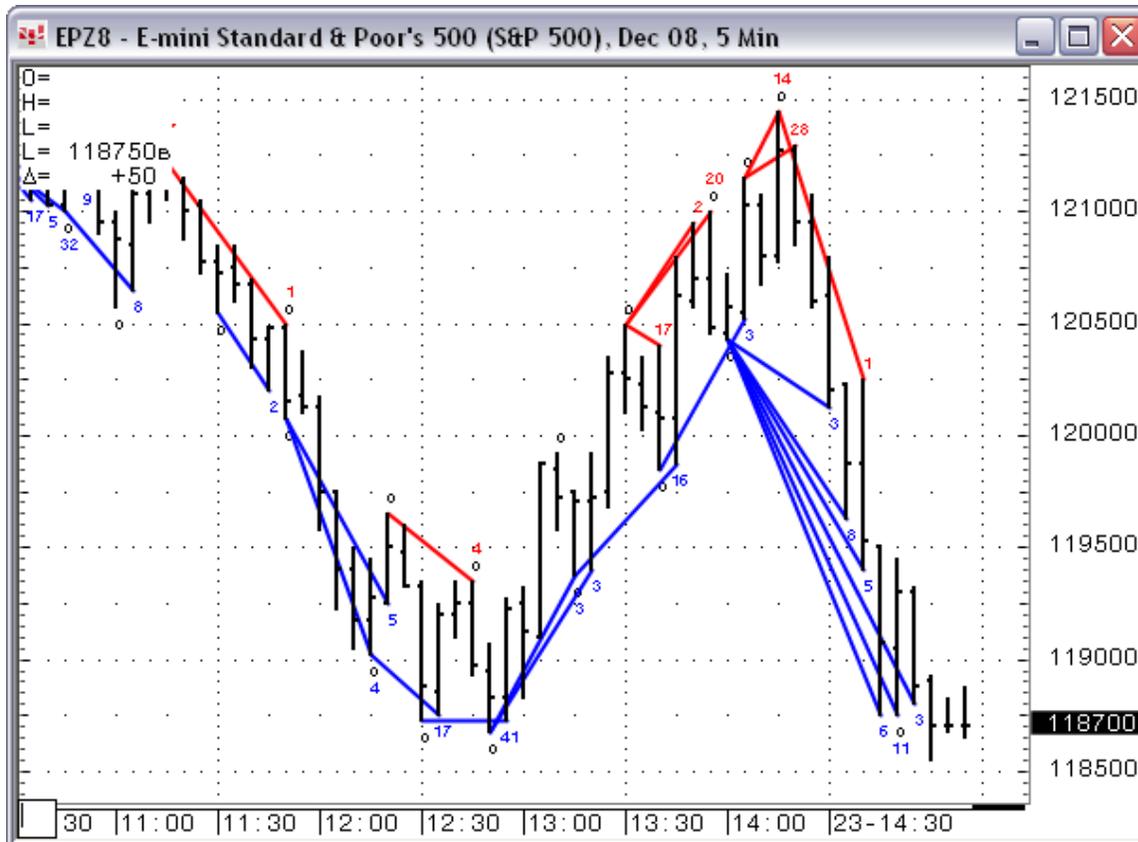


- [Display](#)
- [MarkIt](#)
- **Period:** The time frame used for the moving average calculation.
- [OB/OS](#)

Divergence Index (Diver)

The Divergence Index represents a measure of the divergence between two sets of values (typically between prices and an oscillator). The Divergence Index ranges from +100 to -100.

Divergence is measured at the right-hand point of the trend lines of every peak that is confirmed by one lower high to the right. Therefore, the divergence signal does not occur until the close of the bar following the current peak. This peak represents the potential significant reversal point.



To better visualize what the Divergence Index measures, imagine a trend line drawn between the number and the first circle to its left and a corresponding trend line drawn on the oscillator covering the same time frame. If the slopes of these two lines are identical, the Divergence Index value equals zero.

For price peaks, if the slope of the trend line drawn on the bar chart is greater than the slope of the trend line drawn on the oscillator, the Divergence Index will be positive. The larger this difference, the greater the Divergence value. Likewise, if the slope the trendline drawn on the bar chart is less than the slope of the trendline drawn on the oscillator, the Divergence Index will be negative. Furthermore, if the slope of the trend line on the bar chart is upward and the slope of the trendline on the oscillator is downward, the divergence is referred to as classic. Some market theoreticians believe that a large positive classic divergence (positive bar slope, negative oscillator slope) occurring at a price peak indicates a greater chance for a price

reversal. In any case, the Divergence Index study can systematically detect divergence using a Market Scan or a Study Alert.

The Level [parameter](#) indicates where the left point (the circles) of the trend lines are placed by specifying the number of lower highs that must occur on both sides of the peak in order to advance the circle. Lower Level parameter values result in shorter trend lines.

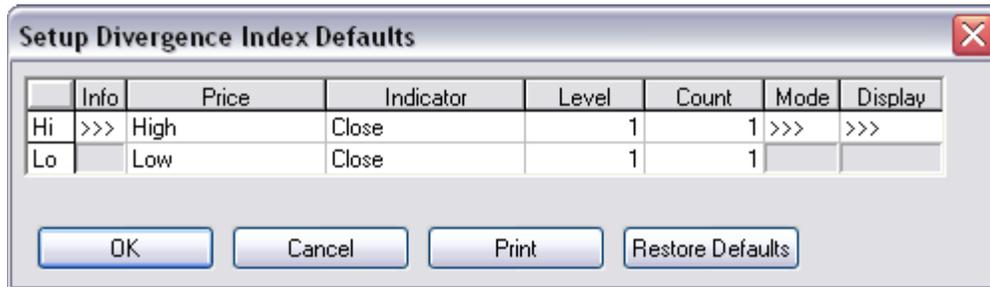
When the Peak [parameter](#) is checked, the oscillator trend line may not use the same points in time as the bar chart trend line. Instead, the study seeks out the peaks in the oscillator that correspond to the peaks in the price and uses them to place the trend line on the oscillator. The corresponding points may be shifted either left or right depending on the slope of the oscillator at the time of the price peak. If the slope of the oscillator is positive, the study moves the oscillator point associated with the peak to the right. Conversely, if the slope of the oscillator is negative, the study moves the oscillator point associated with the peak to the left. In this case, the study places the signal one bar after either the peak in the price or the peak in the oscillator, whichever occurred last.

When the Current [parameter](#) is checked, divergence is measured at the current bar all the time. In this case, the study does not wait for a lower high to confirm the divergence at the current bar.

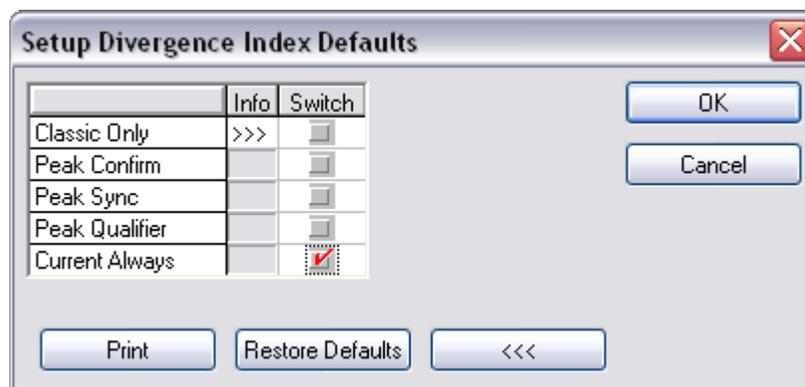
For price valleys, simply think of the chart being upside down and apply the same analysis.

A key element in understanding what divergences can be created is the ability to create User Values within the CQG IC Formula Toolbox. These user values are then available through the **Indicator** [parameter](#). The default list simply enables basic pattern divergence and not divergence between patterns and studies. Therefore, employing a User Value to input a study from the study list in the Formula Toolbox can be quite helpful.

Divergence Index Parameters



- **Price:** The price used for the calculations.
- **Indicator:** The element divergence is being measured against. Includes User Values from Formula Toolbox.
- **Level:** Indicates how close the peaks are when divergence is measured.
- **Count:** The number of pivot points used to measure the divergence.
- **Mode:** Allows users to select the types of divergence to display.



Classic Only: When selected, divergence is indicated when the slope of the bar chart trendline is upward and slope of the oscillator trendline is negative or the slope of the bar chart trendline is downward and slope of the oscillator trendline is positive.

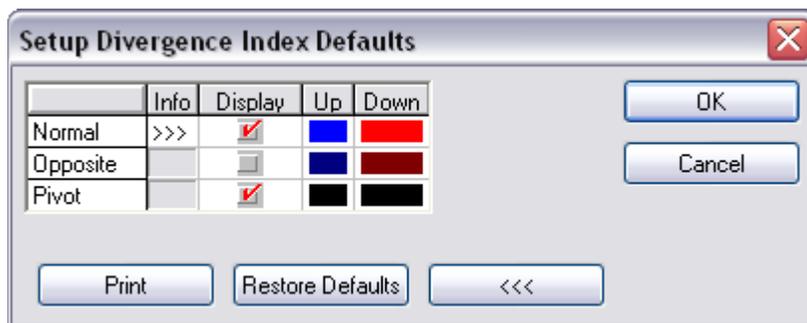
Peak Confirm: When selected, divergence is measured (at the right-hand point of the trend lines) at every peak (trough) which is confirmed by one lower high (higher low) to the right. Therefore, the divergence signal does not occur until the close of the bar following the current peak (trough). This peak (trough) is judged for its likelihood of being a significant reversal point.

Peak Sync: When selected, the oscillator trend line may not use the same points in time as the one placed on the bar. Instead, the study seeks the price peaks (troughs) and uses them to place the trend line on the oscillator. These points can be shifted either left or right of the price peaks (troughs). The system makes these shifts by looking at the slope of the oscillator at the time of the price peak (trough). If the slope is upward for a peak or downward for a trough, it moves the oscillator point to the right until just before the slope turns down (or up in case of a trough). If the slope is downward for a peak or upward for a trough, it moves the oscillator point to the left until just after the slope turns up (or down in case of a trough).

Peak Qualifier: When selected the 2nd price peak must be greater than the 1st price peak for upside divergence, and the 2nd valley must be lower than the 1st valley for downside divergences.

Current Always: When selected, divergence is measured at the current bar all the time. The study will not wait for lower high (higher low) to confirm the divergence at the current bar.

- **Display:**



Normal: For peaks, normal is represented by trendlines moving away from each other, and for troughs normal is represented by the trendlines converging.

Opposite: For peaks, opposite is represented by trendlines moving away towards each other, and for troughs opposite is represented by the trendlines moving away from each other.

Pivot: Used to mark the left points of the trendlines that are used to measure divergence.

Envelope (Env)

The Simple Moving Average Envelope consists of moving averages calculated from the underlying price, shifted up and down by a fixed percentage.



When prices rise above the upper band or fall below the lower band, a change in direction may occur when the price penetrates the band after a small reversal from the opposite direction. Remember, because only previous data is used to compute a moving average, it will always lag behind the actual prices. As a result, moving averages will not predict a *change* in trend, but rather follow behind the current trend. Use them for trend identification and trend following purposes and not for prediction.

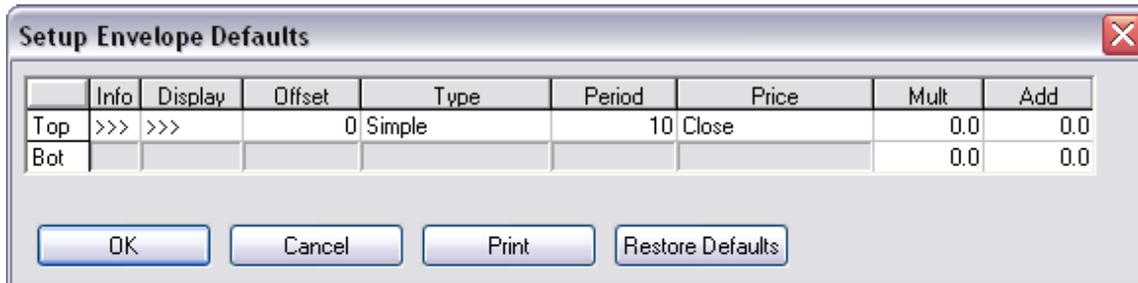
When the market constantly ranges between the moving average and the envelope, the trend is intact.

The following formulas are used to calculate the boundaries:

Top Envelope: $MATE = MA * ((100 + PERCENT) / 100)$

Bottom Envelope: $MABE = MA * ((100 - PERCENT) / 100)$

Envelope Parameters



- [Display](#)
- **Offset:** A time offset. Positive numbers move the display to the right, negative numbers move it to the right.
- **Type:** The type of moving average used for the Average True Range calculations. Choices include: Simple, Smoothed, Exponential, Weighted, and Centered.
- **Period:** The period for the moving average.
- **Price:** The price used for the calculations.
- **Mult:** Adds or subtracts the selected percent from the top and bottom envelope. **Top** adds the selected percent to the center envelope to derive the top envelope. **Bot** subtracts the selected percent from the center envelope to derive the bottom envelope.
- **Add:** Adds or subtracts the selected amount. **Top** adds the selected amount from the center envelope to derive the top envelope. **Bot** subtracts the selected amount from the center envelope to derive the bottom envelope.

External Data (XData)

XData allows you to import your proprietary, external minute or higher time-frame bar data into COG Integrated Client for charting and analysis. These charts can be viewed as historical (static) or in a snap-shot/live mode (dynamic) depending on the data source. COG provides an historical representation of the data and/or snap-shots of the live data in a charting environment.

Once imported, you are able to analyze it using COG's library of over 200 analytic tools, including the popular Bollinger Bands, Relative Strength Index, Moving Average, and MACD (Moving Average Convergence Divergence) studies.

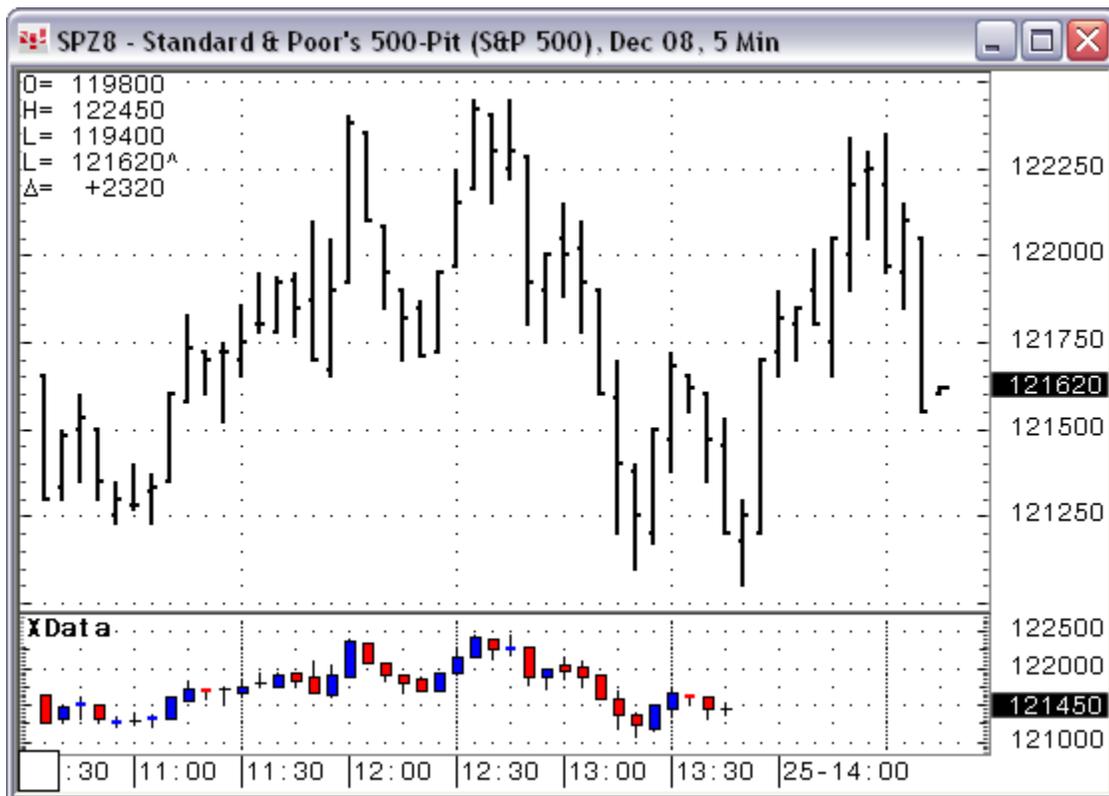
Use this study when you have an external data source represented either an historic ASCII data set or a continuously appended ASCII data set.

All data sets with a continuous date or time series can be used with this study.

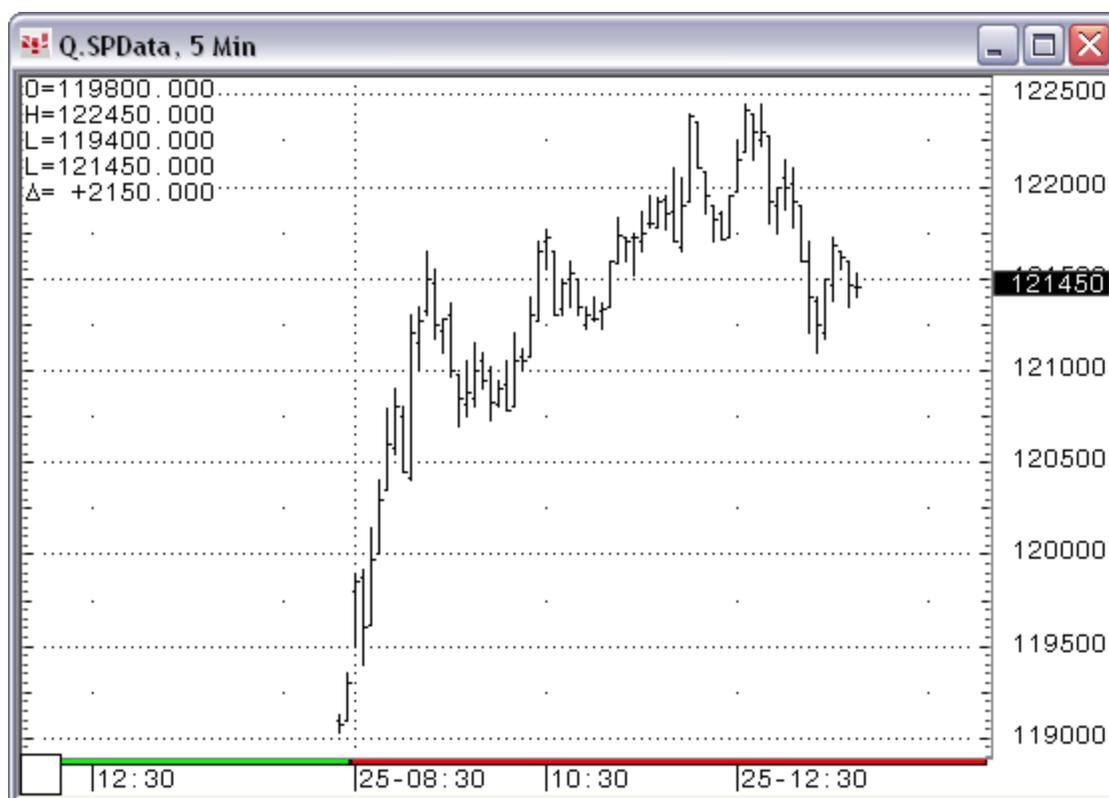
You can also formulate custom studies specifically for your needs. The integration of your data with other markets adds additional depth to your analytic capabilities.

You can also use external data with [Bar External Data](#), [CVB External Data](#), and [TFlow External Data](#) studies, which use tick data.

The XData study is displayed like this:



You can also [chart the XData directly](#), like this:



Data file format

The ASCII file must be tab-delimited (.txt file) or space-delimited (.prn file). File type .csv (comma-delimited) cannot be used. Data must be ascending.

Columns should contain this bar data:

- Column A = Date
 - If you select OldFormat as the date type when you set up the QFormula, then the date format must be YYMMDD. Otherwise, the date format can be any combination of DD, YY, and MM with any non-digit delimiter. For example, YYaDDbMM is valid date format.
- Column B = Time
 - Format HH:MM or HHMM. For daily or higher time-framed data, you do not need this column.
- Column C = Open
- Column D = High
- Column E = Low
- Column F = Close

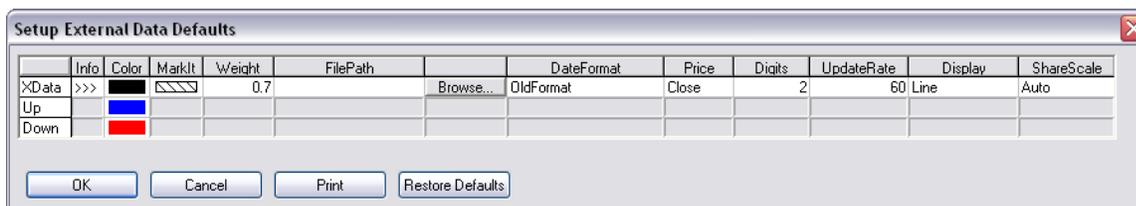
CQG automatically assigns OHLC to four columns of data following the time, HLC for three columns, HL for two columns, and C for one column.

You can also create a file using CQG data by copying and pasting data from a Tabular Display chart.

To chart XData

1. Click the Formula button to open the **Define User Formulas** window.
2. On the **QFormulas** window, click the **New** button.
3. Type a name for the QFormula, and click **OK**. The new QFormula is displayed in the list with the next QNumber in the series assigned to it. Click the drop down arrow to change the QNumber or type a new number.
4. Click the **XData** button (at the bottom of the Formula Editor).
5. Enter a CQG symbol in the **Issue** field. The symbol you choose reflects the same holiday schedule, session information, and price format as your external data.
6. Browse to find the data file to use in the formula.
7. Select the date format that you used in the data file. If you select OldFormat, then the date format must be YYYYMMDD in the data file.
8. If you would like the system to check for changes in the ASCII file and automatically import the data into CQG, then set the **Update Rate** in seconds.
9. Click **OK** to close the window.
10. Open a chart using the time that matches your ASCII file time frame.
11. Type the QNumber or the QFormula name in the entry field.
12. Once the XData curve is loaded in the chart, apply any study or indicator.

External Data Parameters



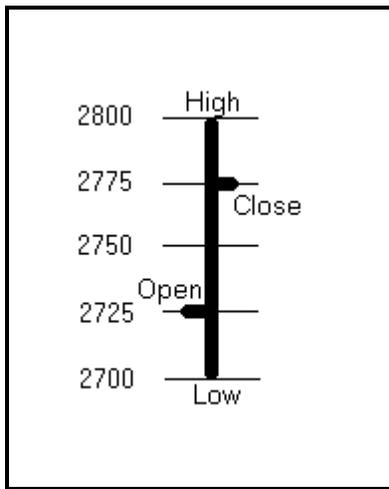
- **FilePath:** Location of data file.
- [Color](#)
- [MarkIt](#)
- [Weight](#)
- **DateFormat:** Format of date in data file.
- **Price:** Price to chart.
- **Digits:** Number of digits of price to chart.
- **UpdateRate:** How often you would like the system to check for changes in the data file.
- **Display:** Choose **Bar**, **Line**, **Histogram**, **Candle** for the bar display.
- [ShareScale](#)

Fancy On Balance Volume (FOBV)

Fancy On Balance Volume is an On Balance Volume calculation where tick volume or actual volume, if available, is divided into buying and selling activity.

The Total Selling volume is subtracted from the Total Buying volume, and the difference is then added to a cumulative total. This gives a more accurate value over traditional On Balance Volume.

The division of the volume is determined by the following ranges. The "points" for this example are from the sample bar, below:



For this hypothetical example: Assume that Tick Volume = 40, that is, 40 ticks or price changes occurred during the bar)

Open - High (Buying) 75 points

Open - Low (Selling) 25 points

High - Close (Selling) 25 points

Low - Close (Buying) 75 points

Total Buying = 150 points out of 200, or 75%

Total Selling = 50 points out of 200, or 25%

Total Buying - Total Selling = 100 points out of 200, or 50%

The volume distribution formula can be simplified = $(\text{close} - \text{open}) / (\text{high} - \text{low})$: $(2775 - 2725) / (2800 - 2700) = 50\%$

50% of the tick volume, 50% of 40 ticks, would be added to the cumulative total, therefore, the FOBV would increase by 20.

Note: If the difference of Total Buying - Total Selling was a negative value, the negative value would be added to the cumulative total, effectively decreasing the cumulative total.



FOBV with a Simple Moving Average

Fancy On Balance Volume Parameters



- [Color and Weight](#)
- [MarkIt](#)
- **Type:** Select **Tick Only** or **Exchange or Tick**.
- **Start Time:** Define the bar range by number of bars back, date back, or from a specific date.
- **Display:** Choose whether the study should be displayed as a line or as a histogram.
- **Contract or Commodity:** Select **Auto**, **Contract**, or **Commodity**. Auto corresponds to the existing volume type.

Fast Stochastics (FStoch)

Fast %K (FSTOCH) - The system identifies the highest high, lowest low, and the current Price for a specified Period.

It subtracts the lowest low from the current PRICE, and then divides the difference by the range, (where the range is the highest high - lowest low). The result becomes the first Fast %K value.

The system continues to calculate Fast %K values by excluding the oldest bar and including the next more recent bar before repeating the above calculation.

Fast %D (F STO %D) - Is a Moving Average of Fast %K values. The default for Fast %D is a Smoothed 3 Period Moving Average.

Users can choose between the Original and the Simple Algorithms. Generally, the simplified will be more responsive to price changes. The formulas for each are:

Original

K:= ((Close(@)- LoLevel(@,10))/ (HiLevel(@,10)- LoLevel(@,10)))*100;

D:= (MA((Close(@)- LoLevel(@,10)),Smo,3)/ MA((HiLevel(@,10)- LoLevel(@,10)),Smo,3))*100;

Simplified

K:= ((Close(@)- LoLevel(@,10))/ (HiLevel(@,10)- LoLevel(@,10)))*100;

D:= MA((Close(@)- LoLevel(@,10))/ (HiLevel(@,10)- LoLevel(@,10)),Smo,3)*100;

Original Algorithm = [Moving Average (Closing Range)]/[Moving Average (Total Range)]

Simplified Algorithm = Moving Average [(Closing Range/Total Range)]

Closing Range = Close – Range Minimum

Total Range = Range Maximum – Range Minimum

Fast Stochastics Parameters



- [Display](#)
- **Period:** Period for the calculations.
- **Price:** The price used for the calculations.
- **HiLevel:** Selects the price used for the high level in the range.
- **LoLevel:** Selects the price used for the low level in the range.
- **Algorithm:** The Algorithm for calculating the stochastic. Choices include: Original or Simplified. The Original algorithm smoothes the close minus the range minimum and the range prior to dividing them. The Simplified algorithm divides the close minus the range minimum and the range prior to smoothing.
- **Type:** The type of moving average used for the Average True Range calculations. Choices include: Simple, Smoothed, Exponential, Weighted, and Centered.
- [OB/OS](#)
- **Type:** Defines the overbought and oversold level setting. Choices include Fixed (2 hard coded lines, HI and LO, set by user, default is 80 for overbought and 20 for oversold) or Dynamic which calculates the lines based on standard deviations away from the mean over a user selected time period. Settings for Dynamic include: Standard deviation, the number of deviations away from the mean, and Lookback period, the number of periods used to calculate the mean. (Default is 2 standard deviations from the mean over the last 100 periods).

Historical Volatility (HVol)

Historical Volatility measures the market's past volatility. It is defined as the standard deviation of a series of price changes measured at regular intervals. It can be used in conjunction with Implied Volatility to gauge how the market's current expectations differ from history.

The Historical Volatility display appears in a window below its corresponding chart. COG allows the user to define the Historical Volatility using either Percent or Logarithmic price changes. Percent changes assume that prices change at fixed intervals. Logarithmic changes assume that prices are continuously changing. Although the logarithmic method may seem more appropriate, because it more accurately reflects an assumption of continuous trading, real world trading is not always continuous, so the Percent method may be more realistic.

High/Low Range changes use a different approach to the standard deviation way of calculating historical volatility. This approach uses high/low ranges that convey much more information than a simple chart of closing prices.

The following formulas are used to calculate Historical Volatility:

Percent:

Price Changes

$$X_i = \frac{P_{i+1} - P_i}{P_i}$$

Logarithmic:

Price Changes

$$X_i = \ln\left(\frac{P_{i+1}}{P_i}\right)$$

where P is the price at the end of each interval i

High/Low Range:

Price Changes

$$\sigma = \sqrt{\frac{1}{n} \sum_n \left\{ 0.5 \left[\ln\left(\frac{h_i}{l_i}\right) \right]^2 + 0.39 \left[\ln\left(\frac{P_i}{P_{i-1}}\right) \right]^2 \right\}}$$

where:

n = period

h = high price

l = low price

P is the price at the end of each interval i

Mean:

$$m = \frac{1}{n} \sum_{i=1}^n x_i$$

where m is the mean of n occurrences (X)

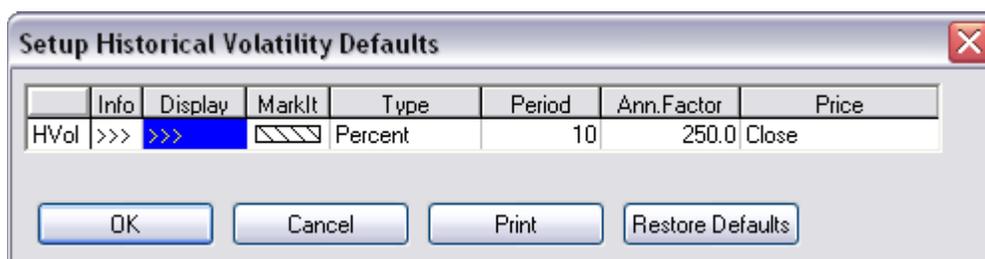
Standard Deviation:

See Standard Deviation Formula

Annualized Hvol:

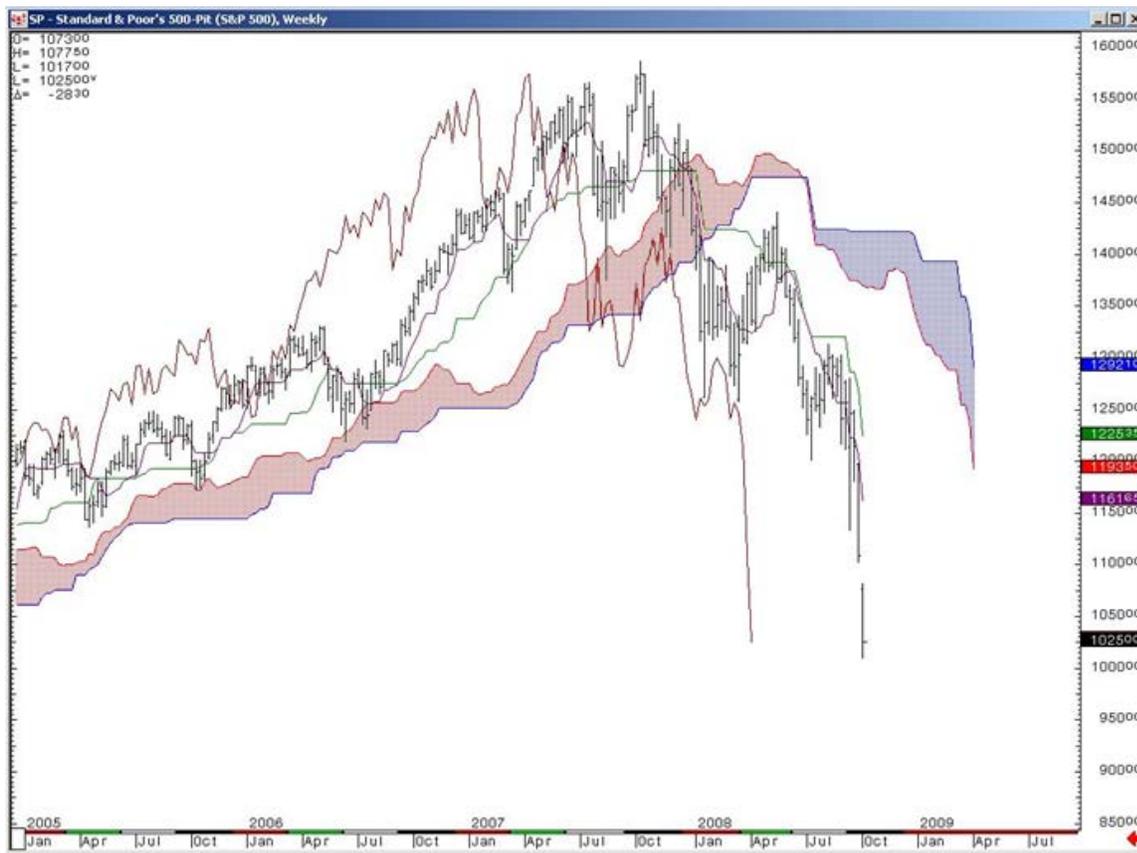
COG annualizes Historical Volatility by multiplying the resulting Standard Deviation by the square root of the number of bars in a year. When a Daily Chart is displayed the system multiplies by square root of 252, Weekly by square root of 52, Monthly by square root of 12, Intraday by square root of (252 x Number of Bars Per Day).

Note: If these methods are compared to bank compounding of interest, at some point the differences between Regular Interval Compounding (Percent) and Continuous Compounding (Logarithmic) become very small.

Historical Volatility Parameters

- [Display](#)
- [MarkIt](#)
- **Type:** Defines the type of Historical volatility to calculate: Percent, Log, or Hi-Low Range.
- **Period:** Defines the time period for the calculation.
- **Ann. Factor:** The number of trading days per year for the contract. To calculate bars per year, multiply this value by the bars per day.
- **Price:** Determines the price level comparison.

Ichimokukinkouhyou (Imoku)



Notice in this example how the study offsets into the future.

The Ichimoku study default outputs are defined as follows:

Imoku: 1 SimpleMovingAverage ('Input': HHi+LLow/2, Period: 9, Offset: 0)

Imoku: 2 SimpleMovingAverage ('Input': HHi+LLow/2, Period: 26, Offset: 0)

Imoku: 3 SimpleMovingAverage ('Input': HHi+LLow/2, Period: 52, Offset: 26)

Imoku: 4 SimpleMovingAverage (((Imoku1 + Imoku2)/2), Period: 1, Offset: 26)

Imoku: 5 SimpleMovingAverage ('Input': Close, Period: 1, Offset: -26)

where: 'Input' = the contract the study is applied to (e.g. DJI)

Imoku: 1	(MaxPer(High, Period1) + MinPer(Low, Period1))/2. It is the average of the highest high and the lowest low for last Period1 bars. Default value for Period 1 is 9. Also display offset can be configured for this output (by default it is zero).
Imoku: 2	(MaxPer(High, Period2) + MinPer(Low, Period2))/2. It is same as Imoku1 but with a different period. Default value for Period2 is 26. Also display offset can be configured for this output (by default it is zero).

Imoku: 3	$(\text{MaxPer}(\text{High}, \text{Period3}) + \text{MinPer}(\text{Low}, \text{Period3}))/2$. It is same as Imoku1 but with different period and displayed with offset. Default value for Period3 is 52; default offset is 26 bars into the future.
Imoku: 4	$\text{MovingAverage4}((\text{Imoku1} + \text{Imoku2})/2, \text{Period4})$. It is a moving average of average of the first and the second outputs, which is displayed with offset. The simple (by default), smooth, exponential, weighted, or centered moving average can be used. The default period of moving average is 1 and default offset is 26 bars into the future.
Imoku: 5	$\text{MovingAverage5}(\text{Input5}, \text{Period5})$. It is a moving average of price, selected by a user (Close by default), which is displayed with offset. The simple (by default), smooth, exponential, weighted, or centered moving average can be used. The default period of moving average is 1 and default offset is 26 bars into the past.

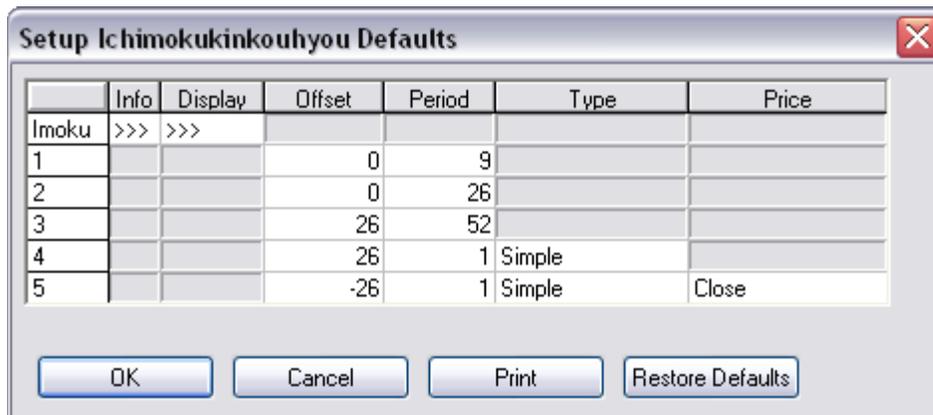
For further information, see:

Elliott, Nicole. [Ichimoku Charts: An introduction to Ichimoku Kinko Clouds](#). Harriman House, 2007.

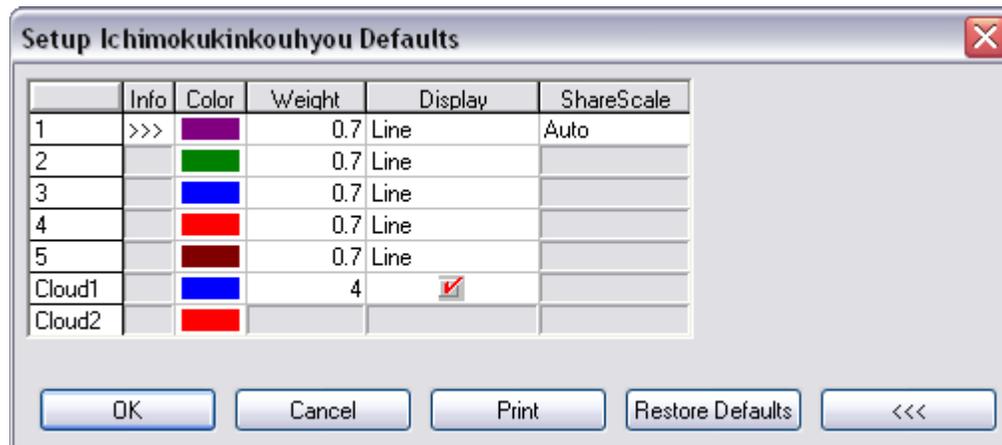
This site describes a similar implementation of this study:

<http://www.fxwords.com/u/ichimoku-cloud.html>.

Ichimoku Parameters



- [Display](#)



- **Offset1-5:** The number of bars to offset curves into the future (offset > 0) or into the past (offset < 0).
- **Period1-3:** The time frame used for the highest high and the lowest low calculation.
- **Period4-5:** The time frame used for the moving average calculation for Imoku 4 and Imoku 5 curves.
- **Type:** The type of moving average used for the Ichimoku calculations. Applies only to Imoku 4 and Imoku 5.
- **Price:** The price used for the calculations. Applies only to Imoku 5.

Implied Volatility (ImpVol)

Implied Volatility is the amount of volatility assumed by the market. Rather than using a simple Standard Deviation-based formula, like Historical Volatility, Implied Volatility plugs several variables, such as actual option price, underlying price, strike price, and expiration date, into the selected model and solves for volatility. Thus, this value represents the volatility implied by the other variables. Specifically, CQG uses the volatilities implied by the Cox-Ross Rubenstein model, which calculates implied volatilities by taking weighted averages of some of the possible underlying expiration prices.

Establishing the Implied Volatility involves two major steps:

- selecting the series to evaluate
- performing the implied volatility calculations on those series

Selecting the Series to Evaluate

CQG initially starts with a baseline of the 3 at-the-money contracts for each month for calls and puts, then several filters are run to eliminate series which would distort the implied volatility calculation.

Using Minimum and Maximum Days till Expiration to Filter Series

After establishing a strike range, minimum and maximum days to expiration is used to weed out more contracts.

The minimum and maximum DTE are fixed based on the commodity.

Note: Days till Expiration excludes today, holidays, and weekends.

Using Strike Prices to Filter Series

To determine which strikes to use when calculating the implied volatility, **CQG** establishes a strike range (SR). The strike range indicates the number of series for each option type for each expiration month around the underlying price used to calculate the Implied Volatility.

Example: If there were 3 expiration months and the SR was 3 the calculation would consider $3 \times 3 \times 2$ (No of Months * Strike Range value * 2 (since calls and puts are considered)) or 18 series.

Using the Underlying Price to Filter Series

Option strikes are filtered out if the strike price is greater than the underlying price plus a defined range for the underlying or less than the underlying price minus that range.

Note: The underlying price is the price that occurred at the moment of the option tick.

Using Minimum Number of Ticks to Filter Series

Any series which does not meet the minimum number of ticks requirement will not be included in the implied volatility calculation.

Using Olympic Rules to Filter Series

After the implied volatilities are calculated for the series still in the running, these series are arranged in order from highest volatility to lowest volatility and a fixed percentage (based on the commodity and number of strikes) of series are eliminated from the top and the bottom to arrive at the series that will be considered in the final implied volatility number.

How Implied Volatility is Calculated

Once the series for the calculation have been determined, CQG calculates the implied volatility using the following method:

Option price ticks are collected for the selected series. However ticks more than 720 minutes old are excluded:

The series are sorted by month.

The implied volatility vs. the days till expiration is plotted for the selected series within each month.

A regression line is fitted to the points for each month and the implied volatility for the optimal days till expiration (a constant value, assigned separately to each commodity) is taken from the regression line

Note: The optimal days to expiration is derived from the Time Value curve. It represents the number of days just before the time value curve attains its steepest slope, that is, just before the rate of time decay is greatest.

Calculating Settlement Implied Volatility

To calculate settlement volatility, CQG stops collecting regular volatility ticks when the first settlement tick passes. CQG collects only settlement ticks for the next 20 minutes. Implied Volatilities are grouped by call and put. A linear regression line is plotted for each group. The value of the regression line at the optimal days to expiration are the call and put volatilities for the commodity.

Implied Volatility Constant Parameters Per Commodity

Subject to change

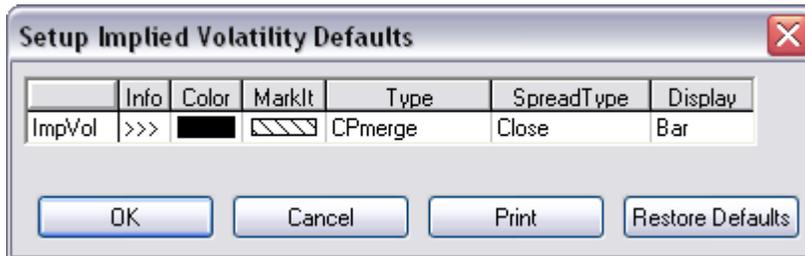
Symbol	MinDE	MaxDE	ODR	SR	MinTicks	Orpct
C	15	90	42	29	20	20
CL	4	90	42	1.4	10	20
DC	20	90	42	139	30	20
DM	15	90	42	0.02	20	20
EU	15	95	42	0.04	10	20
ED	30	280	80	0.8	30	20

Symbol	MinDE	MaxDE	ODR	SR	MinTicks	Orpct
HO	4	70	38	0.04	10	20
NG	4	90	42	1	10	20
OX	15	90	42	10	50	20
PN	6	90	42	1.6	20	20
QD	4	90	30	4	30	20
QM	4	200	60	0.29	10	20
QE	4	200	60	0.29	10	20
S	15	90	42	50	30	20
SP	10	90	42	24	20	20
US	6	90	42	4	30	20
GC	15	90	42	7.5	20	20
SU	10	90	42	0.5	20	20
OJ	10	90	42	10	30	20
CT	10	100	42	3	10	20
QS	10	140	42	0.5	20	20
TY	10	140	42	2	20	20
FV	10	130	42	2	10	20
VE	10	140	42	0.25	30	20
PP	10	90	42	0.1	10	20
W	15	90	42	20	20	20
QG	10	90	42	2	10	20
VI	10	140	42	2	20	20
CC	15	105	42	50	20	20
CF	15	105	42	10	20	20
BO	10	100	42	1	20	20
SM	10	90	42	15	20	20
LC	10	100	42	1	40	20

Symbol	MinDE	MaxDE	ODR	SR	MinTicks	Orpct
HU	10	90	42	0.01	1	20
IB	10	90	42	100	50	20
MO	10	90	42	1.5	10	20
DL	10	90	42	0.25	70	20
JY	15	90	42	0.0003	10	20
BP	15	90	42	0.003	10	20
MB	2	90	42	4	10	20
SF	10	90	42	0.02	20	20
BX	15	145	42	0.25	30	20
DB	15	90	42	0.375	100	20
QO	5	90	42	3.5	5	20
KW	15	90	42	20	20	20
MX	15	90	42	0.002	10	20
CP	15	95	42	2	10	20
QC	15	95	42	75	20	20
QA	15	105	42	75	20	20
RC	15	90	42	0.25	20	20
LH	15	90	42	1	20	20
FC	15	110	42	2.5	20	20
CA	15	145	42	0.005	40	20
QP	15	90	42	5	10	20
UW	15	90	42	100	10	20
ND	15	90	42	20	30	20
NC	15	90	42	6	10	20
MW	15	145	42	20	20	20
HW	15	90	42	50	10	20
O	15	90	42	10	10	20

Symbol	MinDE	MaxDE	ODR	SR	MinTicks	Orpct
DF	15	90	42	200	20	20

Implied Volatility Parameters

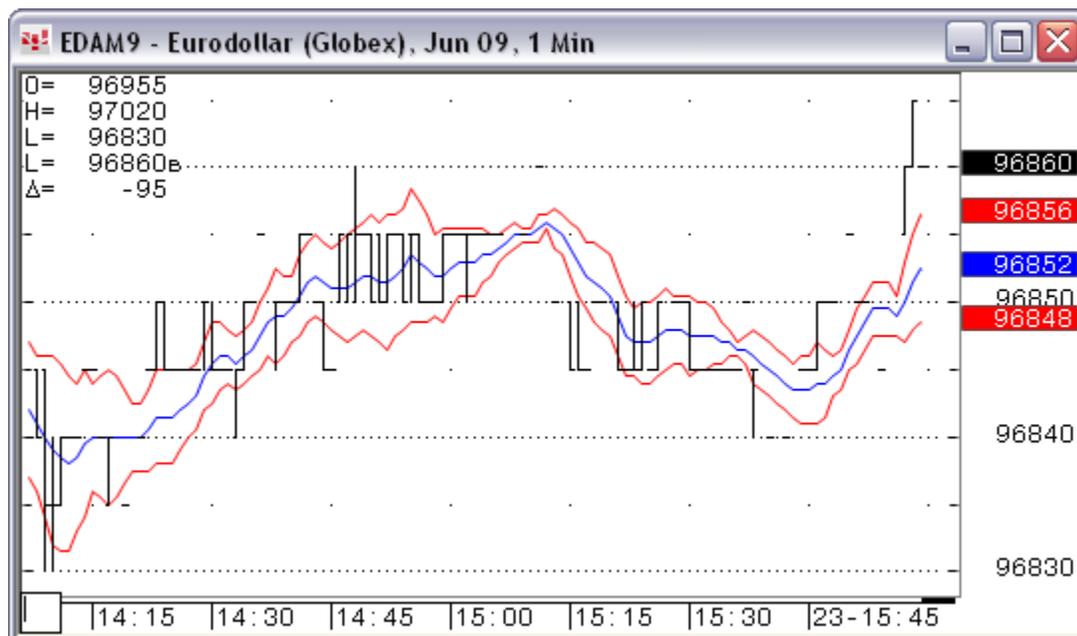


- [Color](#)
- [MarkIt](#)
- **Type:** Choose to display call, put, both call and put, or a call/put spread.
- **SpreadType:** Choose the price to use for spreads.
- **Display:** Choose bar or line for the study display.

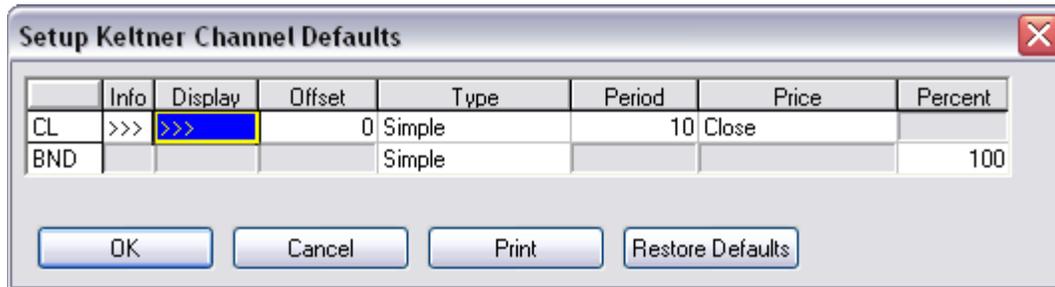
Keltner Channel (Kelt)

Keltner channels compare today's prices with yesterday's prices. An absence of new highs indicates a downtrend. An absence of new lows indicates an uptrend. In conjunction with this method of trend identification, the Minor-Trend Rule is used. The Minor Trend Rule states that the minor trend is bullish if the daily trend sells above its most recent high; conversely, the minor trend is bearish if the daily trend sells below its most recent low.

The Keltner channel study consists of a moving average (center line, CL) and two channel lines (band, BND). The channel lines are drawn by adding to and subtracting from the current moving average value the product of a constant (percent/100.0) multiplied by the average true range of each bar.



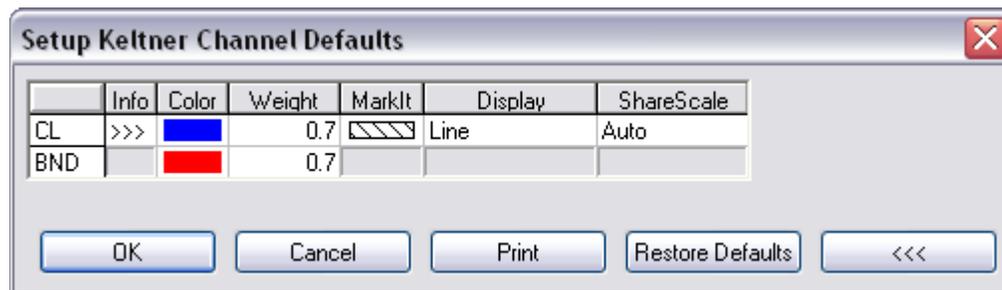
Keltner Channel Parameters



- [Display](#)

CL = center line

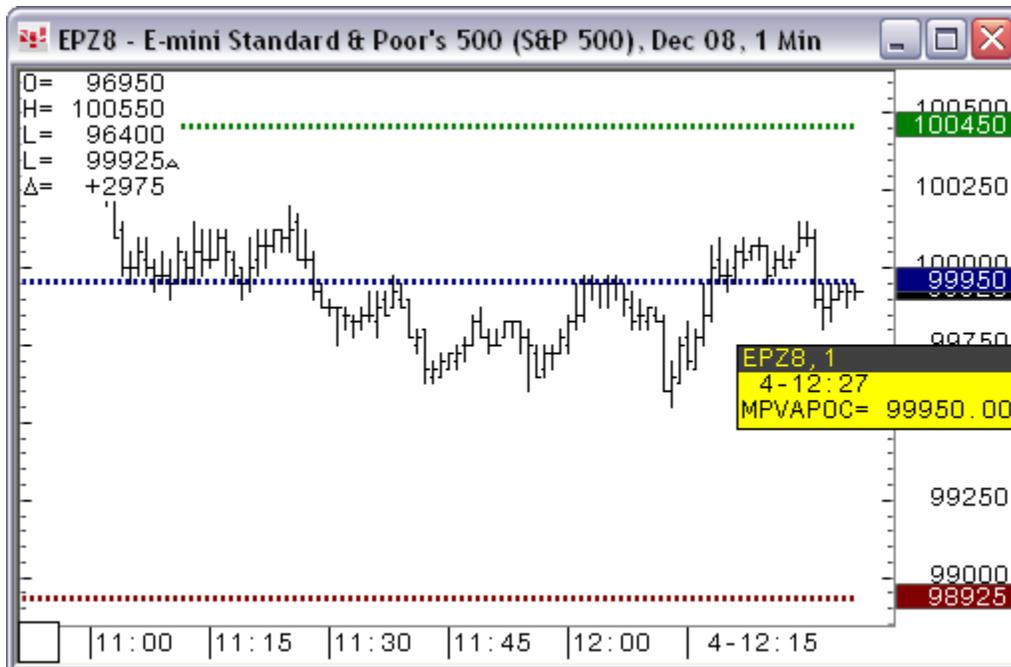
BND = band



- **Offset:** The offset in bars of the study outputs from the parent chart.
- **Type:** The type of moving average used for the Average True Range calculations. Choices include: Simple, Smoothed, Exponential, Weighted, and Centered. Used for the Average True Range calculations and the moving average used to calculate the central line.
- **Period:** The time frame used for the moving average calculation.
- **Price:** The price used for the calculations.
- **Percent:** The percentage factor added to, or subtracted from, the average true range of each bar to derive the channel lines. Applies only to BND.

Market Profile Value Areas (MPVA)

This study calculates the Market Profile's value area and point of control (POC).



The value area begins calculating at the POC. The system expands the value area one price at a time in either direction until the value area represents 70% of the TPOs, choosing the direction on each iteration on the basis of the number of TPOs the two prices adjacent to the current value area have. It is expanded in the direction of the price having more TPOs.

The high boundary of the value area is represented by a green line, and the low boundary of the value area is represented by a red line. You can change these colors.

The POC is calculated as the price that has the maximum TPO during the specified time period. If several prices have the same max TPO, then the price that is closest to the middle price range is the POC price. The POC is blue by default.

Traders may want to analyze the value area's width to determine trade facilitation. Traders may also want to compare the previous day's value area to the current day. A higher value area may indicate that the market is buying. TPO value areas are available on all contracts.

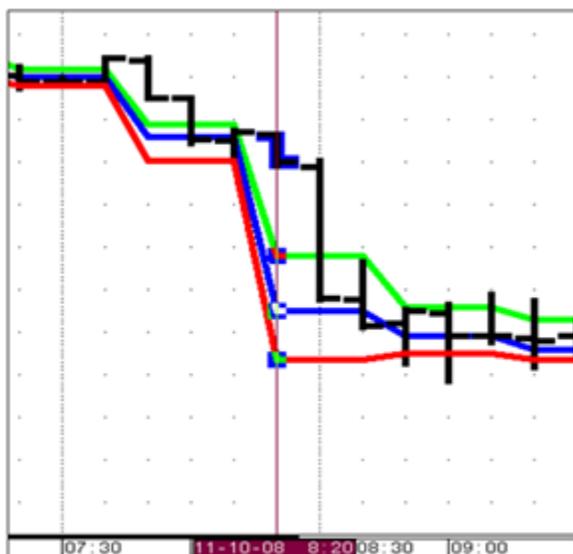
Note: POCHi and POCLo can be incorporated into your custom formulas to identify a range of POCs. The MPVA study available in the Formula Toolbox has been updated with these new range values.

[Contact CQG](#) if you would like to be enabled for this study.

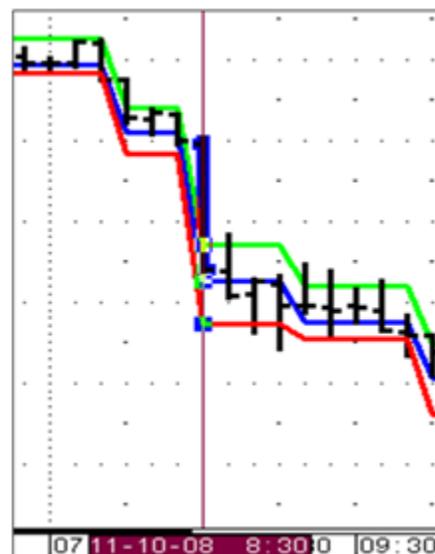
Details of MPVA Calculation

MPVA in dynamic mode: Dynamic mode allows you to calculate and show MPVA values for a custom-defined time interval on an intraday chart. In this case, any time the interval range is calculated from session start time or day, start time and MPVA study values for every time interval will take into account TPO of prices from the day or session start time, so dynamic mode shows how MPVA values are changing within the day or session for every defined time interval.

Dynamic mode, Start time = Day



Dynamic mode, Start time = Session



MPVA for intraday charts: This study is calculated on base of 5 min (or 1 min) bars. Using 5 min bars is the default. If the dynamic interval in dynamic mode isn't divisible by 5, then 1 min bars are used in the calculation. For every bar, MPVA values correspond to the end of this bar rather than its start time. This helps reflect the market state for the end of bar. It is especially helpful with Point and Figure, TFlow, and Constant Volume Bar charts where bar times aren't determined.

For example, if Dynamic Interval = 30, and there is one 1.5 hour bar (including approximately 3 time intervals), MPVA values will be calculated based on bars from day or session start time until the last dynamic interval that starts inside this long bar.

Example:

Session start = 8:30 a.m.

Dynamic Interval = 30 min

Dynamic mode is On

PF start bar time = 9:45 a.m.

end bar time = 10:50 a.m.

So, for this Point and Figure bar, the dynamic interval is 10:30 – 11:00 and will include data for the 8:30 – 11:00 period.

MPVA for historical charts: The start time parameter in dynamic mode are ignored for historical charts. Instead, for daily charts, the month interval is used for MPVA calculation; for weekly, every 3 months (starting from January); for monthly, yearly; for quarterly, every 4 years (since 1900); for semiannual, every 10 years (since 1900); for yearly, every 20 years (since 1900). Real bars (rather than 5 or 1 min bars) are used for the MPVA calculation.

Market Profile Value Areas Parameters

Info	MP Interval	Start Time	Dynamic	Dynamic Interval	Calculate On	Type	Display
MPVA	>>> 30 min	>>>	<input checked="" type="checkbox"/>		30 Price	Exchange or Tick	>>>

Buttons: OK, Cancel, Print, Restore Defaults

- **MPInterval:** Select one of the pre-set chart intervals or enter your own valid chart interval. The MPVA study is calculated based on the bars set here. If MPInterval is set for a historical chart:

Intraday values in MPInterval indicate the time intervals used to calculate study values. For example, 30 minutes indicates that the MPVA is build using 30-minute Time Price Opportunities (TPO). Values: **1 min, 5 min, 10 min, 15 min, 30 min, 60 min.**

Historical values in MPInterval indicate these values are used for MPVA calculation:

Daily = daily TPO are used for calculations; MPVA values are calculated for each month

Weekly = weekly TPO are used for calculations; MPVA values are calculated for each quarter

Monthly = monthly TPO are used for calculations; MPVA values are calculated for each year

Quarterly = quarterly TPO are used for calculations; MPVA values are calculated for every 4 years (from 1900)

Semi-Annual = semiannual TPO are used for calculations; MPVA values are calculated for every 10 years (from 1900)

Annual = yearly TPO are used for calculations; MPVA values are calculated for every 20 years (from 1900)

If chart interval is greater than MPInterval, MPVA values are calculated for each chart bar.

Also, chart's continuations settings will be used during MPVA calculation only if MPInterval is selected from standard options provided.

- **StartTime:** Allows you to start the calculation either from the beginning of the current session, from the beginning of the current day, from a custom date and time, or from a condition. Ignored if MPInterval is historical. Values: **Day, Session, Date/Time, Condition, Bars Back,** and **Days Back.**
- **Dynamic:** When selected, dynamic mode is turned on. When not selected, static mode is turned on. Ignored if MPInterval or chart interval is historical.
- **DynamicInterval:** This interval is the timeframe for the dynamic session selected in the Type field. If the time interval is not divisible by the chart time, then the time interval is rounded to the nearest divisible value. Ignored if MPInterval or chart interval is historical.
- **Calculate On:** Select **Price** or **Volume** for the calculation.

- **Type:** Defines type of volume displayed on curve. Select **Exchange Only**, **Tick Only**, or **Exchange or Tick**.

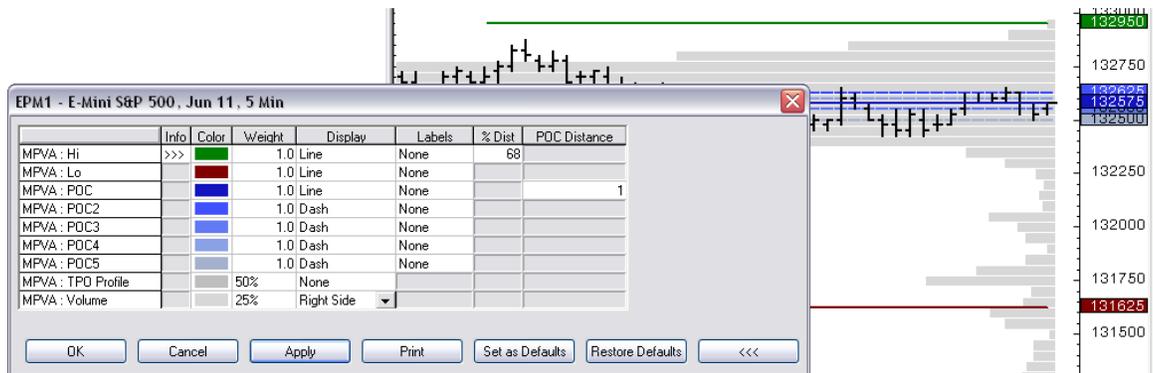
Actual volumes represent the total number of contracts traded during the selected chart interval.

Tick volumes are the number of price changes that occurred during a specified time period.

For **Exchange or Tick**, exchange volume will be used if it's available, otherwise ticks will be used.

- **Display:** Choose display properties, such as color and type of line for: Hi, Lo, POC, POC2, POC3, POC4, POC5, TPO Profile (number of time segments that this price was traded at), and Volume. POC Distance determines how many ticks between POCs. For example, a setting of 5 indicates that a range of 5 ticks is ignored when searching for the next POC.

Chart continuation settings apply to the volume output. Because equalized closes are not compatible with volume profiles, if that option is selected in chart preferences, then volume profiles are displayed for the current contract only.



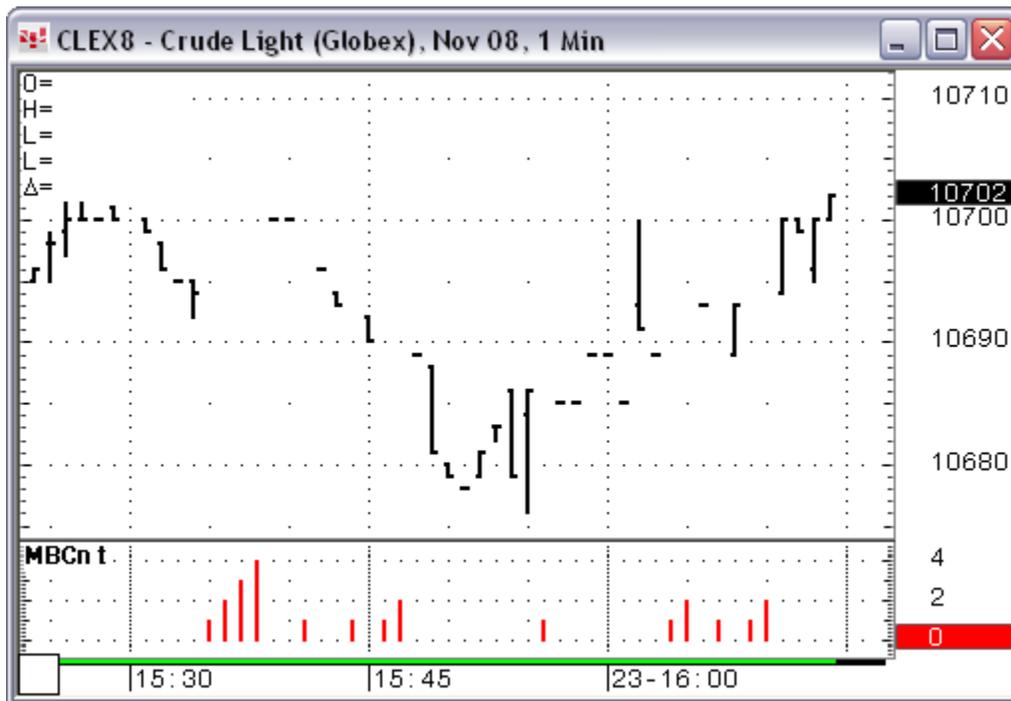
Missing Bar Count (MBCnt)

This study counts the number of blank (no price data) time periods between traded prints.

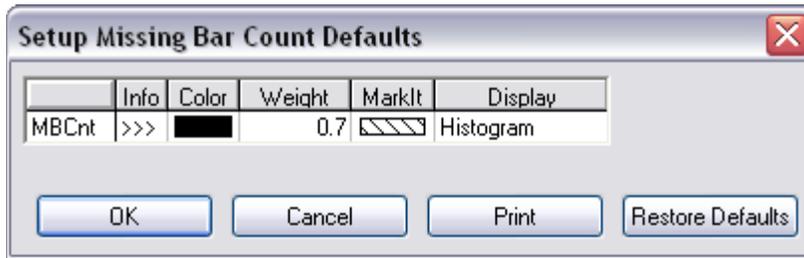
Use it during low trade volume sessions or markets that have little liquidity. You can use MissingBarCount to count the number of blank time periods between traded prints. The function can also be used in formulating conditions, alerts, and trade systems.

Most night sessions will exhibit time periods with no trade activity.

The counter will reset itself to zero when trade activity is present within the time frame, then it begins to increment each time frame from that point forward until a new trade print becomes present.



Missing Bar Count Parameters



- [Color, Weight](#)
- [MarkIt](#)
- **Display:** Choose to display the study as a histogram or line.

Momentum (Mom)

The Momentum study plots the difference between the current price and a prior price (you decide prior time). Momentum is centered on zero; it is positive when price is above its prior value and negative when it is below. The unit used for measurement is the minimum scale increment of the market being studied.

Momentum may simply be used to measure the net change of a market between two bars.

Momentum is similar to [Rate of Change](#), as it is a direct measurement of market movement.

Momentum may be used as an oscillator type of study. Accordingly, users often define OB/OS conditions to identify when the market has achieved a significant move.

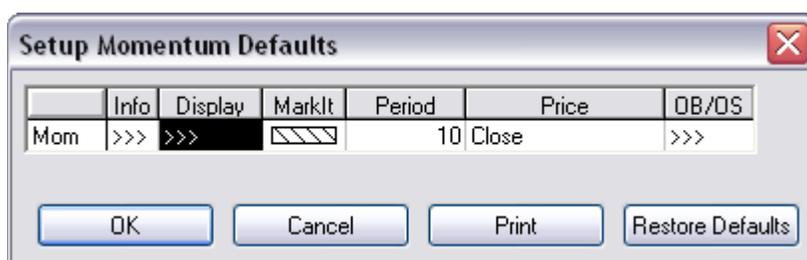
Momentum is an unbounded study making OB/OS levels difficult to define.

Selling an OB market or buying an OS market is effective in a trading range market but is likely to result in large losses during a trending market. If the market is trending the Momentum may stabilize indicating the market is continuing to move at a persistent rate. Traders may want to use an additional condition or set of conditions to confirm a trading signal. The placing of another momentum study such as a Moving Average or Moving linear Regression will reduce the number of trade signals.

Momentum, like other oscillators, may be used to identify divergence or confirmation of a new price extreme. A divergence indicates the market has lost its momentum or has become highly volatile and is likely to consolidate or reverse. Confirmation indicates the market is still accelerating away from its moving average and follow through is likely.

A difficulty with using divergence analysis on Momentum is its calculation is based off of two specific dates and changes from bar to bar in the earlier date will affect the value of Momentum to the same degree as changes in the current price. Therefore, using a long look back period is one way of smoothing out false signals.

Momentum Parameters



- [Display](#)
- **Period:** The time frame used for the Momentum calculation.
- **Price:** The price used for the calculations.
- [OB/OS](#)

Moving Average (MA)

The Moving Average (MA) study plots the average price over a user-specified period. Five methods of calculating the Moving Average are available in CQG: Simple, Smoothed, Centered, Weighted, and Exponential.



CQG also provides the ability to add envelopes to a MA. These lines are added to a MA when a figure is entered under percent. The envelopes are equal to the MA times 1 plus the percent and 1 minus the percent.

Moving averages are one of the most common forms of technical analysis because they tend to be effective tools for identifying the trend of a market.

Many trading strategies use the MA as a filter and only go long when the MA is rising or the price is above the MA and go short only when the MA is falling or the price is below it.

MAs tend to work best in trending markets and often lead to whipsaw type action in a sideways trading range market. Therefore, it is important to use other filters in order to understand trend. One method is to apply the [Rate of Change](#) to the average. A secondary method is to move the averages forward via the offset option. This will highlight periods of congestion and allow for a faster observation when a trend is changing. Bill Williams Profitunity [Alligator](#) study is one that uses this concept. A final method is track momentum by placing an average on a study, such as the [Parabolic](#). That study is good at catching the first part of a trend, but then is

unable to track an extended one. Placing a Moving Average on the Parabolic will ride the trend for longer and maintain more sensitivity than simply using a longer period Moving Average. This concept can be reversed, so a Parabolic is placed on the Moving Average to obtain the same effect.

Traders will often use multiple MAs of different lengths or calculation methodologies and watch for crossover points. The relationship between two MAs may be measured using the [Oscillator](#) and [MACD](#) studies.

The MA is often considered a support or resistance point.

The MA envelopes are generally used to identify overbought (OB) and oversold (OS) conditions. As with other indicators which provide OB/OS conditions, these may be used to either identify a breakout or an extreme point that may be traded against.

Traders generally consider price activity within the bands to be neutral in nature.

Simple Moving Average Calculation

For the following example the PERIOD = 3.

The first value for a Simple Average is determined by formula SIMPLE. It is plotted on the chart at the third bar from the left side of the screen.

$$\text{SIMPLE} = (\text{PRICE 1} + \text{PRICE 2} + \text{PRICE 3}) / \text{PERIOD}$$

The next value would be plotted at the fourth bar from the left side of the screen.

$$\text{SIMPLE} = (\text{PRICE 2} + \text{PRICE 3} + \text{PRICE 4}) / \text{PERIOD}$$

Subsequent values would be determined by eliminating the oldest PRICE from the calculation, and including the next more recent PRICE.

Centered Moving Average Calculation

A Centered Average is calculated the same as a Simple Average. The difference is where the first point is plotted. A Centered Average plots the first point at the center bar of the specified PERIOD.

For example: The first point for a 3 PERIOD Centered Average would be plotted at the 2nd Bar, where the first point for a 3 PERIOD Simple or Smoothed average would be plotted at the 3rd Bar.

In the case of a Centered Average with an even number of PERIODs, the first point would be plotted at the bar immediately to the right of the center bar.

Smoothed Moving Average Calculation

A Smoothed Moving Average is similar to a simple moving average. However, in a smoothed moving average, rather than subtracting the oldest value, as in a simple moving average, the previous smoothed average value is subtracted.

For the following example the PERIOD = 3.

First value is ready when Period first bars are accumulated.

First value $SMOOTH(1) = AccumulatedPrice / Period$ where AccumulatedPrice is a sum of Period input prices.

Next value (say $SMOOTH(N)$) is calculated as:

$$SMOOTH(N) = SMOOTH(N-1) + (Price(N) - SMOOTH(N-1)) / Period$$

The next value would be plotted at the fourth bar from the left side of the screen.

$$SMOOTH2 = (PREVIOUS SUM - PREVIOUS AVG + PRICE 4) / PERIOD$$

For the second calculation of SMOOTH, PREVIOUS SUM is the sum of PRICE 1 + PRICE 2 + PRICE 3; and PREVIOUS AVG is the initial value of SMOOTH.

The next value would be plotted at the fifth bar from the left side of the screen.

$$SMOOTH = (PREVIOUS SUM - PREVIOUS AVG + PRICE 5) / PERIOD$$

Subsequent values would be determined by subtracting the PREVIOUS AVG from the PREVIOUS SUM, adding the next more recent PRICE, then dividing by the PERIOD.

Example:

If the values 1,2,3,4 and 5 were reported for the first 5 bars the 3-period smoothed moving averages for those bars would be calculated as follows:

$$(1+2 +3)/3 = 2$$

This is the first value and would be plotted on the 3rd bar from the left.

$$(6 - 2 + 4)/3 = 2.67$$

This second value would be plotted on the 4th bar from the left.

$$(8-2.67+5)/3 = 3.44$$

This third value would be plotted on the 5th bar from the left.

Exponential Moving Average Calculation

For the following example the PERIOD = 3 and the PRICE = CLOSE.

To calculate an Exponentially Smoothed Moving Average, (ESMA), the user must enter an integer value for the PERIOD or a decimal value Smoothing Constant.

A decimal value Smoothing Constant must be greater than 0.0 and less than or equal to 2.0.
Example: .5

When an integer value is entered for PERIOD, the smoothing constant is converted by the system to a decimal value using the following formula:

Smoothing Constant:

$$= 2 / (PERIOD + 1)$$

$$= 2 / (3+1)$$

$$= 2 / 4$$

$$= .5$$

The Exponentially Smoothed Moving Average, ESMA, may be calculated after the Smoothing Constant is known.

The first ESMA value is initially set to the first PRICE before the calculation begins. The first PRICE is from the leftmost bar on the screen.

The formula for calculating the ESMA is as follows:

$$ESMA = pESMA - (\text{Smoothing Constant} \times (pESMA - PRICE))$$

In the above formula:

ESMA is the new Exponentially Smoothed Moving Average.

pESMA is the Previous ESMA value.

PRICE is the value of the PRICE used for each bar, e.g. CLOSE

Note: A decimal value Smoothing Constant equal to 0.0 stops the ESMA from being displayed, however, an ESMA will appear if the integer 0 is entered without the decimal point.

Weighted Moving Average Calculation

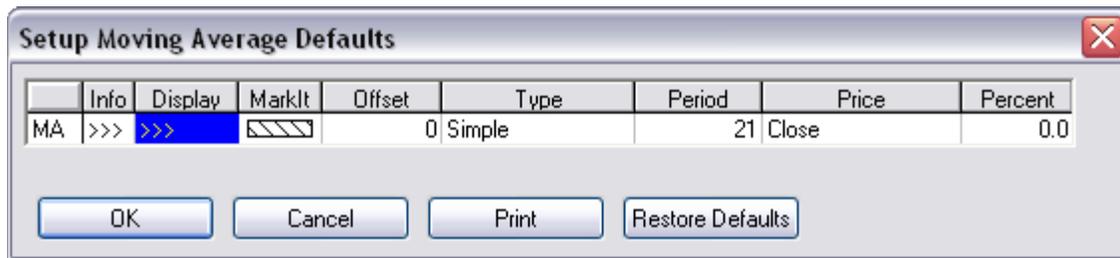
The CQG weighted moving average assigns weights linearly, assigning greater weights to more recent data points.

Example:

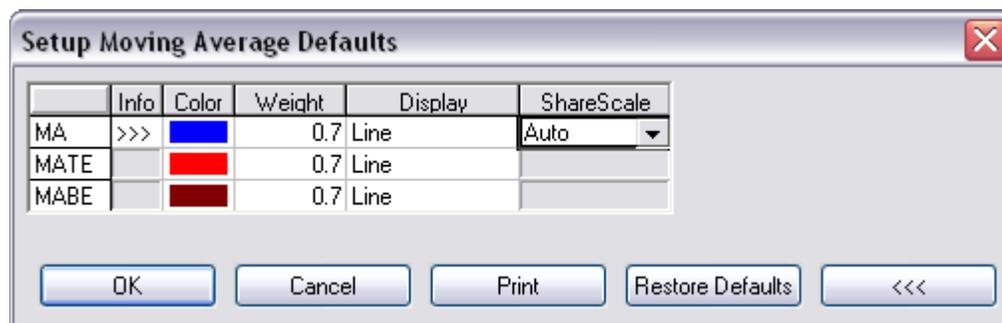
A 21 period weighted moving average would be calculated as follows:

$$[21 * \text{Close}(0)] + [20 * \text{Close}(-1)] + [19 * \text{Close}(-2)] + \dots + [1 * \text{Close}(-20)]$$

Moving Average Parameters



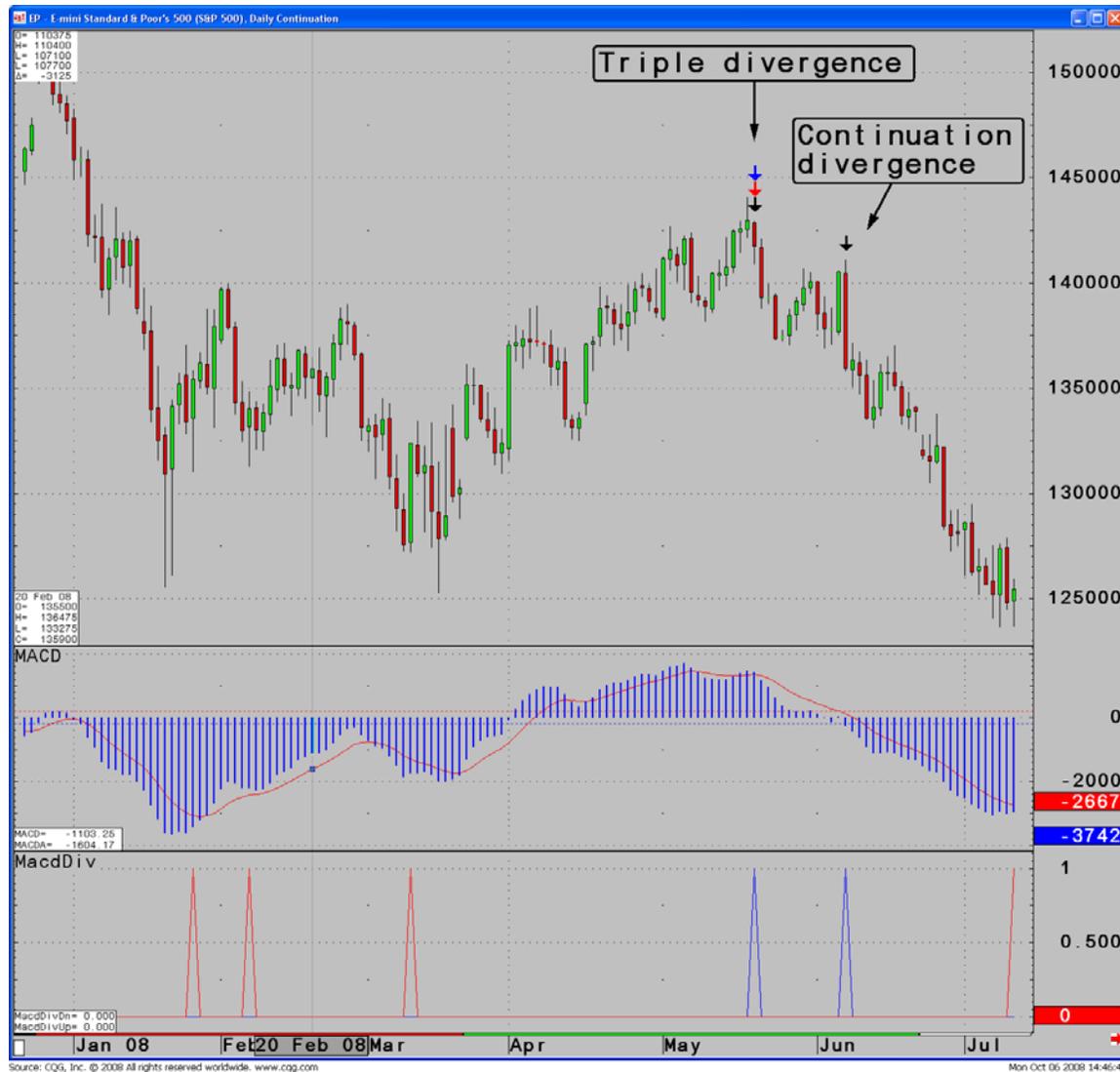
- [Display](#)



- **Offset:** The offset in bars of the study outputs from the parent chart.
- **Type:** The type of moving average used for the Average True Range calculations. Choices include: Simple, Smoothed, Exponential, Weighted, and Centered.
- **Period:** The time frame used for the moving average calculation.
- **Price:** The price used for the calculations.
- **Percent:** Adds the selected percentage amount to form the top line. Subtracts the selected percentage amount to form the bottom line.

Moving Average Convergence/Divergence (MACD)

The MACD is a specific type of OSCILLATOR study. It measures the difference between two exponential moving averages of different lengths, in addition, a trailing moving average of the MACD is plotted (MACDA), this is commonly referred to as the "Trigger" line. The two moving averages have different sensitivities to market action, thereby providing an indication of a change in the market environment, such as the emergence of a new trend or a trend reversal. Gerald Appel defined the MACD with its default parameter values.



Calculation

MACD = Exponential MA1 - Exponential MA2

MACDA = Exponential MA of MACD

Characteristics & Usage

The MACD is a simple and effective trend following tool, with the CQG defaults the most common variables used in the market.

When the MACD crosses 0, it indicates the shorter, more sensitive, moving average is crossing over the longer, slower, moving average.

Convergence of the two exponential averages, identified as the MACD moving toward 0, indicates trend termination or consolidation.

An expansion apart between the two exponential averages indicates the shorter/faster average is accelerating away from the longer/slower average. This is associated with a strengthening trend.

The MACD is an unbounded study enabling it to follow the market as long as the trend is gaining momentum.

The MACD generates two types of trading signals:

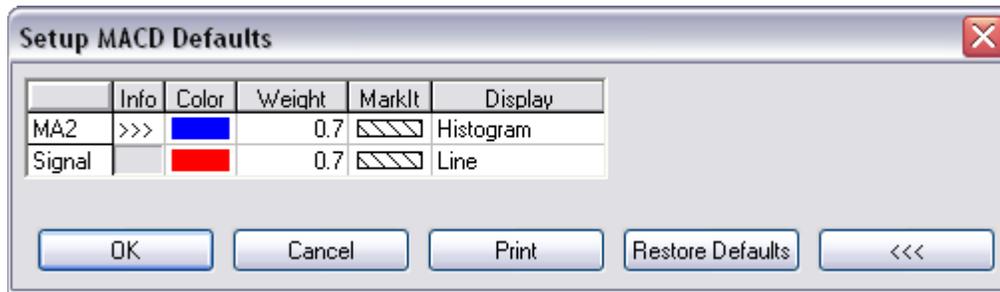
- A cross above zero generates a buy signal, while a cross below zero is a sell signal.
- A cross of the MACD and the MACDA may be used to generate buy and sell signals, as well. This technique can effectively identify the resumption of a trend when the MACD does not cross 0. The distance between the MACD and the MACDA is the basis of the Oscillator Less MA of Oscillator study.

The unbounded nature of the MACD study makes defining specific OB/OS levels difficult. Given this characteristic an MACD should not be traded against simply because it is OB or OS rather one should wait to see deterioration in its behavior. This may be done by paying greater attention to the MACDA. This allows for the study to be used as a divergence based indicator. Due to the fact that it is unbounded in value, it does not have so many problems associated in the Stochastic and the RSI. Namely, placing linear calculations on non-linear data. Studies such as MACD Divergence, which is linked to MACD Steps, can provide further definition in identifying true divergence. The chart shows three arrows on one sell signal which indicates divergence appearing when calculated through the high, low, and close. The single black arrow highlights the powerful and unique signal of divergence as a continuation of an existing trend.

Moving Average Convergence Divergence Parameters



- [Display](#)



- **Offset:** Offset of the curve with respect to the chart.
- **Period:** Time frame used for moving average calculation.
- **Price:** Price used for calculations.
- **Digits:** Number of digits after the decimal point in the study's outputs.
- [OB/OS](#)

Moving Average Cross (MAx)

The Moving Average Cross (MAx) study plots three moving averages of different lengths or types. Each average has a different sensitivity to market action. Taken together, the behavior of the averages provides an indication of a change in the market environment, such as the emergence of a new trend.

Calculation

See the [Moving Average](#) study for the specific formulas for each type of moving average.

Top Envelope: $MATE = MA * ((100 + PERCENT) / 100)$

Bottom Envelope: $MABE = MA * ((100 - PERCENT) / 100)$

Characteristics & Usage

The strength of using multiple moving averages is to identify trends of different magnitudes.

The comparison of two moving averages is a common form of technical analysis used to identify the primary trend of a market. When a third average is employed the MAx study may be used to identify the secondary trend as well.

Analysis of the two 'slower' averages yields information on the longer term trend.

Analysis of the two 'faster' averages yields information on the shorter term trend.

Traders will often use multiple moving averages of different lengths or calculation methodologies and watch for crossover points. The crossover of a more sensitive moving average over a less sensitive average serves as an indication of a change in trend.

The market may be considered strongly bullish when the 'fast' moving average is rising and above the 'slow' moving average.

The market may be considered strongly bearish when the 'fast' moving average is falling and below the 'slow' moving average.

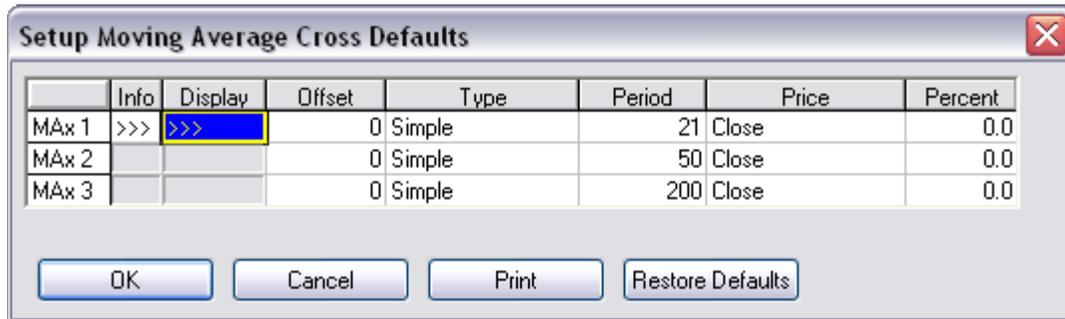
The convergence of two moving averages following a trend often serves as an early indication of a weakening trend.

However, MAx tends to be a lagging indicator.

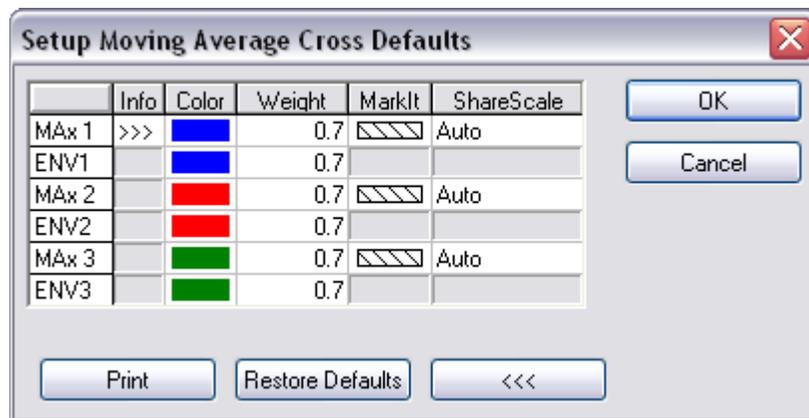
The relationship between two moving averages may be measured using the [Oscillator](#) and [MACD](#) studies. MAs tend to work best in trending markets and often lead to whipsaw type action in a sideways trading range market. Therefore, it is important to use other filters in order to understand trend. One method is to apply the [Rate of Change](#) to the average. A secondary method is to move the averages forward via the offset option. This will highlight periods of congestion and allow for a faster observation of when a trend is changing. Bill Williams Profitunity [Alligator](#) study is one that uses this concept. A final method is track momentum by placing an average on a study such as the [Parabolic](#). That study is good at catching the first part of a trend but then is unable to track an extended one. Placing a Moving Average on the Parabolic will ride the trend for longer and maintain more sensitivity than simply using a longer period Moving Average. This concept can be reversed, so a Parabolic is placed on the Moving Average to obtain the same effect.

COG's conditional coloring attribute is available with the Moving Average Cross study, allowing the color of the study to change when a user-defined condition is true.

Moving Average Cross Parameters



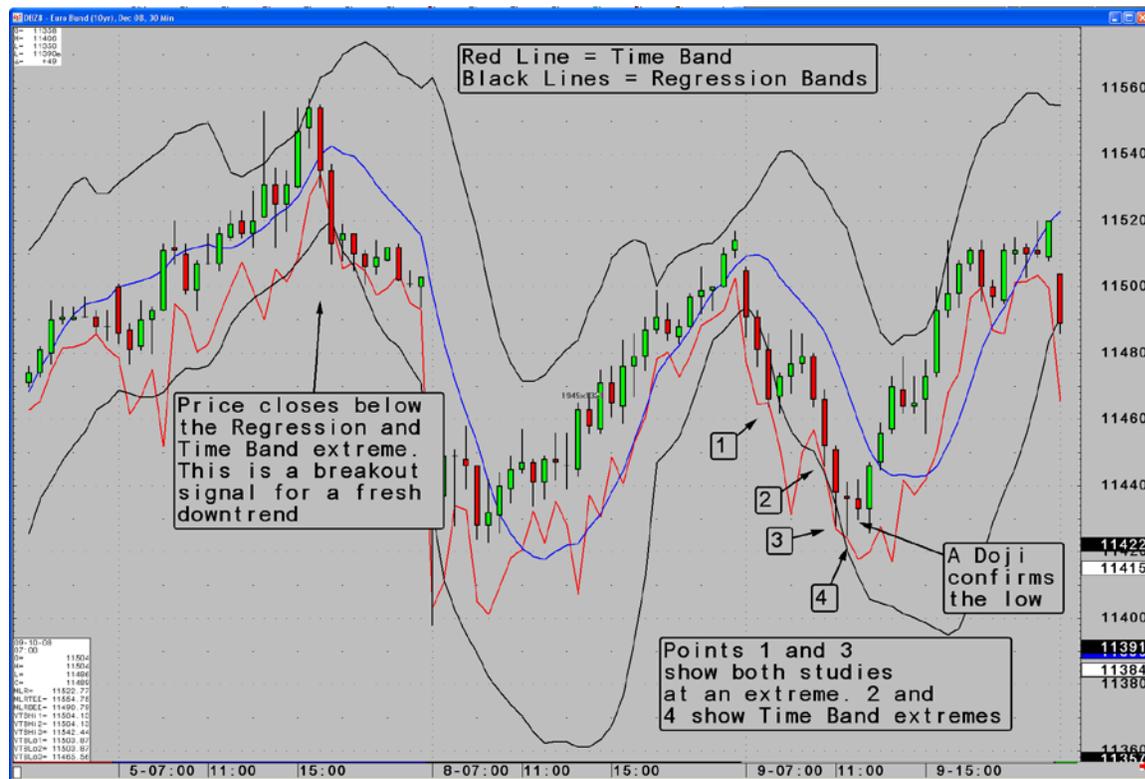
- [Display](#) parameters can be set for MAx 1, MAx 2, MAx 3, ENV1, ENV2, and ENV3.



- **Offset:** Shifts the curve by offset bars to the future if the parameter is positive or to the past if the parameter is negative.
- **Type:** The type of moving average used for the Average True Range calculations. Choices include: Simple, Smoothed, Exponential, Weighted, and Centered.
- **Period:** The time frame used for the moving average calculation. Each of the moving averages can be turned off by setting this parameter to zero.
- **Price:** The price used for the calculations.
- **Percent:** Adds the selected percentage amount to form the top line. Subtracts the selected percentage amount to form the bottom line. Top and bottom envelopes for each curve are turned off by default and can be turned on by changing this parameter to a non-zero value.

Moving Linear Regression (MLR)

Moving Linear Regression, also known as the End Point Moving Average, begins by fitting an unseen line to a set of data points. These points are specified by the Price and Period parameters. The process of fitting the line to the data points uses the least squares technique. This technique finds the line that minimizes the sum of the squares of the distances between each point and the line.



The value of the fitted line at the last point (end point of the line) for the specified period is plotted on the chart. The set of data points then shifts to the next most recent bar and another line is fitted to these points. The end point of this line and of successive lines is plotted on the chart. The displayed Moving Linear Regression line connects these calculated end points. An envelope can be displayed in relation to the Moving Linear Regression line by setting selecting percent, factor x standard error, or factor x residuals as the envelope type.

The beauty of this study compared to most momentum-based, trend-following indicators is the fact that it tracks the trend however steep or shallow. In short, it maintains sensitivity without causing time lag. The other main difference is that in order to signal the end of a trend, the line must simply change direction. It does not signal the end of a trend if price crosses the line.

The study can be applied to any market and any timeframe with variables normally set anywhere between 20 and 80 periods. The higher number is for use on high frequency short term trading methods often associated with CQG's TFlow.

One important caveat is, due to the fact that it redraws the best fit, the value of the line can change retrospectively. However, while this means that historically-tested results will be

different when in real-time, the study's benefits - in being sound exit code - far outweigh its drawbacks.

It is possible to place bands around the line. The best setting to use is the factor and standard error with a factor set at 2 or 3. It's also important so that you have a fixed reference on an extreme that the offset is either set at 1 or the calculation goes through the open instead of the close. This means that an extreme value is set for the timeframe chart and represents partial profit taking points to trend following trades or aggressive counter trend trades, if linked to other extreme reading studies such as Volatility Time Bands or Range Deviation Pivots. The chart below shows an example where a breakout is signaled by a close beyond the lower regression and the 3rd deviation of the Volatility Time Band. As the trend develops the extreme low is exactly at the Regression Band low which coincides with the Volatility Time Band low. This means that the market is at an extreme on both an absolute momentum basis (regression band) and at an extreme for the time of day (Volatility Time Band). This also provides a counter trend opportunity.

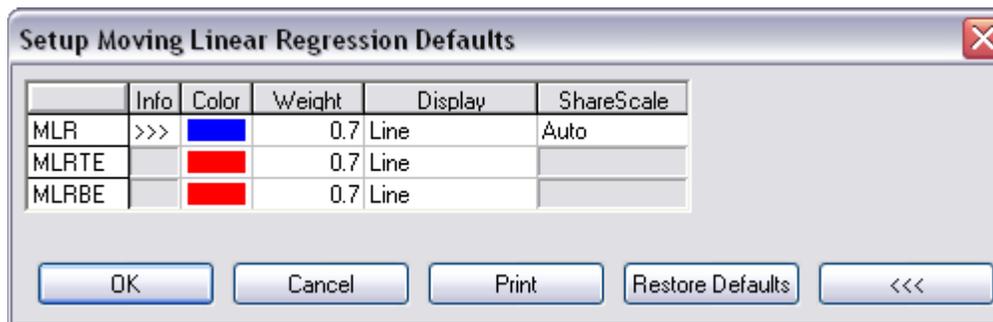
Moving Linear Regression Outputs

Parameter	Description
MLRTE(21)	Moving Linear Regression Top Envelope (21-period).
MLRBE(21)	Moving Linear Regression Bottom Envelope (21-period).
MLRIntercept(21)	Moving Linear Regression Intercept.
MLR(21)	Moving Linear Regression Line.
MLRSlope(21)	Slope of the Moving Linear Regression Line.
MLRResidual(21)	The total amount the observations deviate from the mean.
MLRRSquared(21)	The correlation coefficient, indicating how well the observed data points fit the linear regression line.
MLRTEE(21)	Moving Linear Regression Top Envelope, Standard Error $MLR(@,period) + Factor * StdDev(@,period)$
MLRBEE(21)	Moving Linear Regression Bottom Envelope, Standard Error $MLR(@,period) + Factor * StdDev(@,period)$
MLRTRE(21)	Moving Linear Regression Top Envelope, Residual $MLR(@,period) + Factor * SqRoot(MLRResidual(@,period)/(period-1))$ with n-1 as divisor
MLRBRE(21)	Moving Linear Regression Bottom Envelope, Residual $MLR(@,period) + Factor * SqRoot(MLRResidual(@,period)/(period-1))$ with n-1 as divisor

Moving Linear Regression Parameters



- [Display](#)



- **MarkIt**: Select conditions and chart coloring for the conditions.
- **Offset**: Lookback period for the calculations.
- **Period**: Time period used to calculate the least squares line.
- **Price**: Price used to calculate each least squares line.
- **Envelope**: Select the method used for applying the envelope lines. Choices are **Percent**, **Factor x Std Err**, or **Factor x Residuals**.

$$\text{Standard Error} = \text{MLR}(@, \text{period}) + \text{Factor} * \text{StdDev}(@, \text{period})$$

$$\text{Residual} = \text{MLR}(@, \text{period}) + \text{Factor} * \text{SqRoot}(\text{MLRResidual}(@, \text{period}) / (\text{period} - 1))$$

with n-1 as divisor

- **Percent**: Percent that is added and subtracted from the regression line to derive the top and bottom envelopes, if Percent was chosen as the Envelope parameter.
- **Factor**: The + and - factor used to multiply the standard error to derive the top and bottom envelopes, if a factor-based envelope was selected.
- **Divisor**: N = a standard deviation calculation; N-1 = population standard deviation calculation.

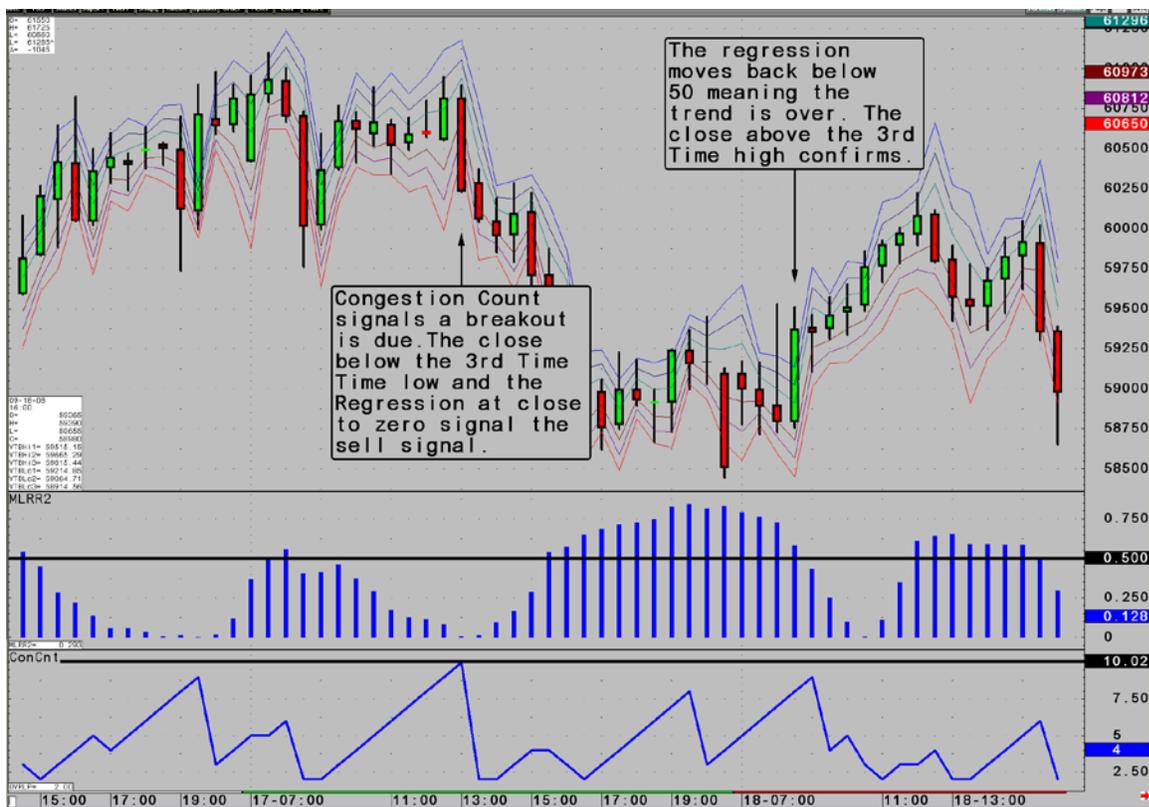
In addition to these parameters, the Formula Toolbox can be used to access additional Moving Linear Regression parameters that can be used in custom studies.

Moving Linear Regression R Squared (MLRR2)

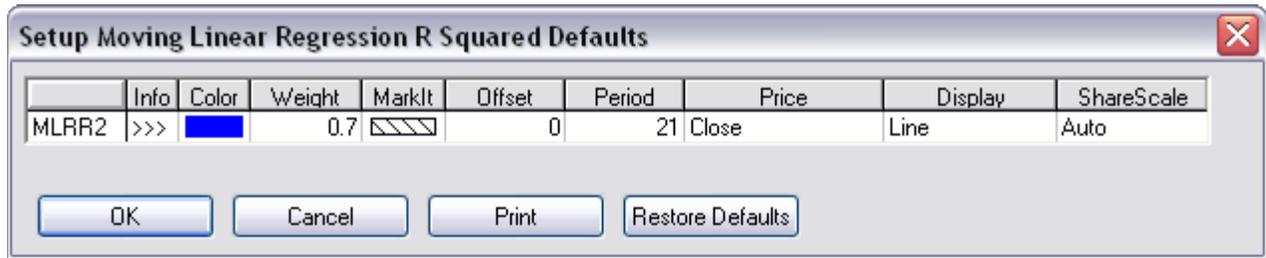
Plots the square of the correlation coefficient based on the MLR for the currently displayed chart.

This is the measure of the degree to which two variables are linearly related. The study computes between 1 and zero with meaning the correlation is absolute within the trend and zero that there is either no trend or there is a reverse correlation, e.g. a sharp change in trend.

The use of this study within Congestion Count is a useful way of identifying a sideways pattern quickly. You then can use another indicator to signal the breakout and its direction. The set up is as follows. Congestion Count records a value of 10 or higher. This means that the last 10 bars have touched each other's range on a consecutive basis. MLR Squared records a value below 10. The breakout occurs when price closes outside of the 3rd deviation of the Volatility Time Band.



Moving Linear Regression R Squared Parameters



- [Color and Weight](#)
- [MarkIt](#)
- **Offset:** A lookback period for the calculations.
- **Period:** The time frame used for the moving average calculation.
- **Price:** The price used for the calculations.
- **Display:** Choose whether the study should be displayed as a line or as a histogram.
- [ShareScale](#)

On Balance Volume (OBV)

On Balance Volume is a line that plots the cumulative total of tick volume or exchange volume if exchange volume is available. OBV is a measure of accumulation/distribution and may be predictive of trends. Upward sloping OBV lines are typically seen in uptrends. Divergences at tops and bottoms may also be observed.

If the current close is above the previous close, the current bar's volume is added to the total.

If the current close is below the previous close, the current bar's volume is subtracted from the total.

If the current close is equal to the previous close, the value for the OBV is unchanged.



OBV with a 20-period Simple Moving Average (SMA)

On Balance Volume was developed by Joe Granville.

On Balance Volume Parameters



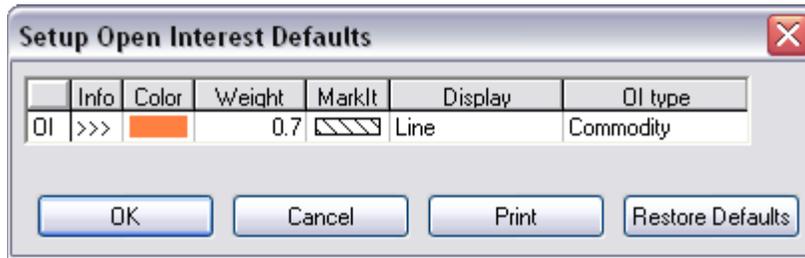
- [Color and Weight](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.
- **Type:** Select **Tick Only** or **Exchange or Tick**.
- **Start Time:** Define the bar range by number of bars back, date back, or from a specific date.
- **Display:** Choose whether the study should be displayed as a line or as a histogram.
- **Contract or Commodity:** Select **Auto**, **Contract**, or **Commodity**. Auto corresponds to the existing volume type.

Open Interest (OI)

The Open Interest for the current day is updated when the volume information becomes available from the exchanges. The exchanges transmit volume information at different times.



Open Interest Parameters



- [Color and Weight](#)
- [MarkIt](#)
- **Display:** Choose whether the study should be displayed as a line or as a histogram.
- **OI type:** Select **Commodity** or **Contract**.

Oscillator (Osc)

The Oscillator study plots the difference between two moving averages of different lengths or types. The difference of two moving averages with different sensitivities to market action provides an indication of the development of a change in the market environment, such as the emergence of a new trend or a trend reversal.

Calculation for Oscillator

$$\text{OSC} = \text{MA1} - \text{MA2}$$

An Oscillator (OSC) is the difference between two moving averages. The Oscillator is calculated by subtracting the value of the Oscillator's 2nd Moving Average from the value of the Oscillator's 1st Moving Average.

Characteristics & Usage

The Oscillator is a primary trend following tool.

When the Oscillator crosses 0 it indicates a change in trend as the shorter, more sensitive, moving average is crossing over the longer, slower, moving average.

Movement away from 0 indicates the shorter/faster average is accelerating away from the longer/slower average. This is associated with a strengthening trend.

When the two averages are converging, the Oscillator is moving toward 0, this is generally associated with the termination of a trend.

Many trading strategies employ an Oscillator to indicate a buy signal on a cross above zero and a sell signal on a cross below zero.

Users will often place an average on the Oscillator to detect significant changes in its behavior. This is the basis of the Oscillator Less MA study. MACD is a specific type of Oscillator and plots this trailing moving average.

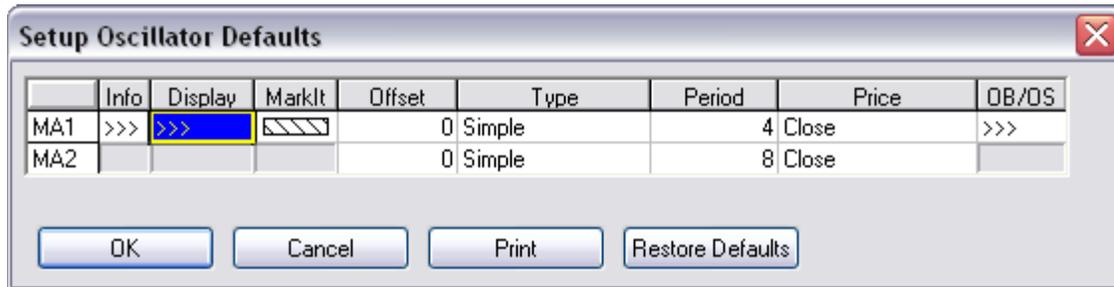
One of the benefits of using an Oscillator to measure the distance between the two averages rather than simply watching their behavior, is that OB/OS levels may be identified.

By identifying extreme points the Oscillator indicates when a short-term trend is over extended relative to its longer-term trend.

The Oscillator is an unbounded study (in contrast to a Stochastic). Accordingly, it will follow the market higher or lower, but this makes defining specific OB/OS levels difficult. Given this characteristic an Oscillator should not be traded against simply because it is OB or OS rather one should wait to see deterioration in its behavior. This may be done by watching studies such as the Oscillator Less MA of Oscillator.

CQG's Conditional Coloring attribute is available with the Oscillator study allowing the color of the study to change when a user-defined condition is true (see Define Formulas - Conditions).

Oscillator Parameters



- [Display](#)
- [MarkIt](#)
- **Offset:** A lookback period for the calculations.
- **Type:** The type of moving average used for the Average True Range calculations. Choices include: Simple, Smoothed, Exponential, Weighted, and Centered.
- **Period:** The time frame used for the moving average calculation.
- **Price:** The price used for the calculations.
- [OB/OS](#)

Oscillator Cross (OSCx)

The Oscillator Cross (OSCx) is the display of Oscillator 1 and Oscillator 2 with a moving average of Oscillator 1.

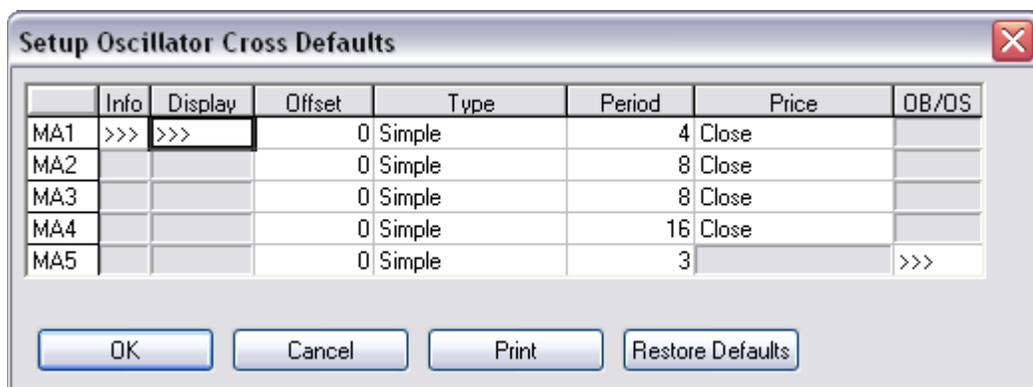
Oscillators 1 (OSCx1) and 2 (OSCx2) are calculated as follows:

Oscillator 1 = Moving Average 1 (MA1) - Moving Average 2 (MA2)

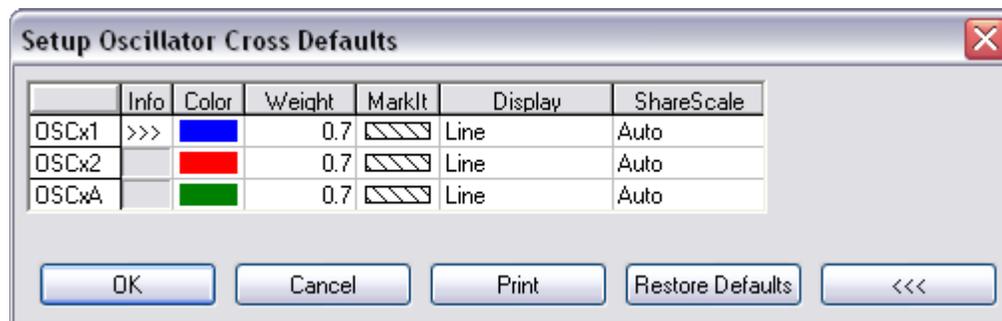
Oscillator 2 = Moving Average 3 (MA3) - Moving Average 4 (MA4)

A Moving Average of Oscillator 1 (MA5) is also displayed.

Oscillator Cross Parameters



- [Display](#)



- **Offset:** A lookback period, in bars, for the calculations.
- **Type:** The type of moving average used for the Average True Range calculations. Choices include: Simple, Smoothed, Exponential, Weighted, and Centered.
- **Period:** The time frame used for the moving average calculation.
- **Price:** The price used for the calculations.
- [OB/OS](#)

Oscillator 1 - Oscillator 2 (OsD)

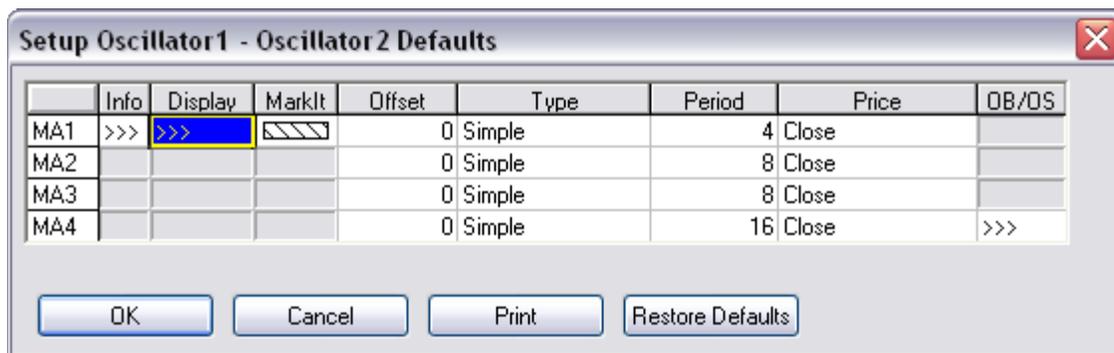
OSC1 - OSC2 (OsD) plots a line that represents the difference between the two available Oscillators.

Oscillators 1 and 2 are calculated as follows:

Oscillator 1 = Moving Average 1 (MA1) - Moving Average 2 (MA2)

Oscillator 2 = Moving Average 3 (MA3) - Moving Average 4 (MA4)

Oscillator1 - Oscillator2 Parameters



- [Display](#)
- [MarkIt](#)
- **Offset:** A lookback period, in bars, for the calculations.
- **Type:** The type of moving average used for the Average True Range calculations. Choices include: Simple, Smoothed, Exponential, Weighted, and Centered.
- **Period:** The time frame used for the moving average calculation.
- **Price:** The price used for the calculations.
- [OB/OS](#)

Oscillator - MA of Oscillator (OsMA)

OSC1 - MA OSC1 (OsMA) plots a line that represents the difference between the first oscillator and the moving average of the first oscillator.

The calculation of OsMA subtracts the value of MA OSC1 from the value of OSC1.

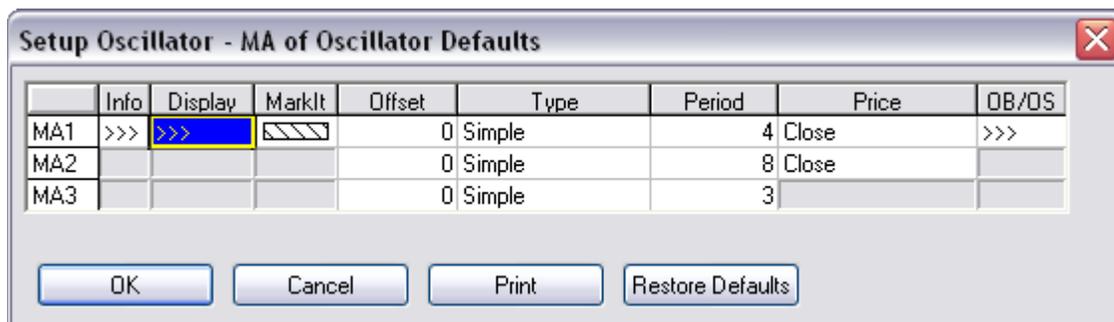
OsMA is the display of the difference between the first Oscillator and the Moving Average of the first Oscillator.

Oscillator 1 and OsMA are calculated as follows:

Oscillator 1 = Moving Average 1 - Moving Average 2

OsMA = Oscillator 1 - Moving Average 3 of Oscillator 1

Oscillator - MA of Oscillator Parameters



- [Display](#)
- [MarkIt](#)
- **Offset:** A lookback period for the calculations.
- **Type:** The type of moving average used for the Average True Range calculations. Choices include: Simple, Smooth, Exponential, Weighted, and Centered.
- **Period:** The time frame used for the moving average calculation.
- **Price:** The price used for the calculations, e.g. close, mid, last, and average.
- [OB/OS](#)

Parabolic (Para)

Welles Wilder's Parabolic study is a time/price reversal system. The letters "SAR" stand for "stop and reverse" meaning that the position is reversed when the protective stop is hit. It is a trend-following system. As prices trend higher, the SARs tend to start out slower and then accelerate with the trend. In a downtrend, the same thing happens but in the opposite direction. The SAR numbers are calculated and available to the user for the following day based on the following equation:

$$SAR_{\text{Tomorrow}} = SAR_{\text{Today}} + AF(EP_{\text{Trade}} - SAR_{\text{Today}})$$

where: AF begins at 0.020 (default value) and is increased by .02 each bar that a new high/low is made (depending on the trend direction) until a value of 0.20 is reached; EP = Extreme Price point for the trade made so far (if Long, EP is the extreme high price for the trade; if Short, EP is the extreme low price for the trade).

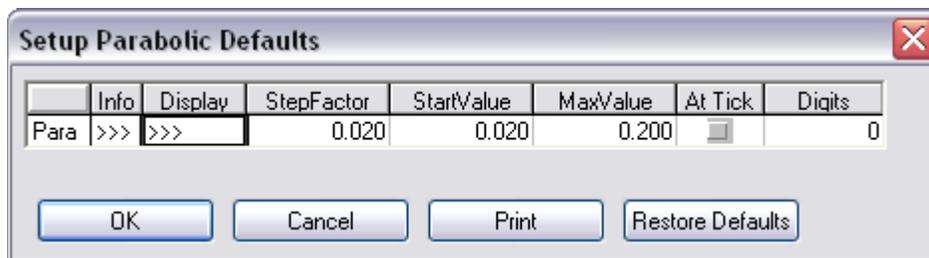
Thus, the Parabolic Time/Price System rides the trend until the SAR price is penetrated. Then the existing position is closed out and the reverse position is opened.



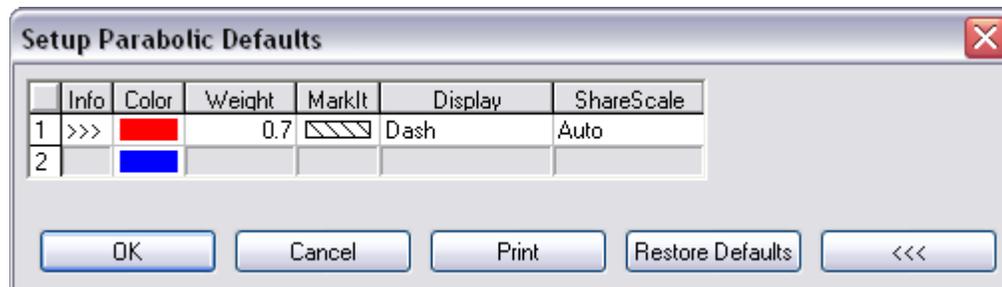
Parabolic Outputs

- **Para:** Value of the active parabolic curve (either ParaUp or ParaDn).
- **ParaUp:** Value of the ParaUp curve.
- **ParaDn:** Value of the ParaDn curve.
- **ParaStep:** How much the step factor increases for each new high or low. This is based on the highest previous high or the lowest previous low and the ParaStep value.
- **ParaDir:** If the parabolic curve is going up, then ParaDir = 1. If the parabolic curve is going down, then the ParaDir = -1.

Parabolic Parameters



- [Display](#)



- **StepFactor:** The percentage of the previous move used to calculate the new position.
- **StartValue:** The start of the multiplier factor
- **MaxValue:** The maximum multiplier factor.
- **At Tick:** When selected, the value will be plotted at the nearest tradable price away from the market. In other words, when the volatility stop price is below the bar price it will go to a floor price, and when the volatility stop price is above the market, it will go to the ceiling price. When off, the volatility stop value will be shown at its exact price.
- **Digits:** Indicates the number of digits to the right of decimal place displayed for the Parabolic study.

Percent R (%R)

The %R calculation identifies the highest high, lowest low, and the current price for a specified period.

It subtracts the lowest low from the current price, and then if range is not empty (highest high - lowest low == 0), it divides the difference by the range, (where the range is the highest high - lowest low) otherwise %R value will be 50%. The result becomes the first %R value.

The system continues to calculate %R values by excluding the oldest bar and including the next more recent bar before repeating the above calculation.

This study can be used to set up support and resistance strategies, similar to how we use the Stochastic Indicator. The buy setup occurs when %R gets below 20 and the sell setup occurs when %R is above 80.

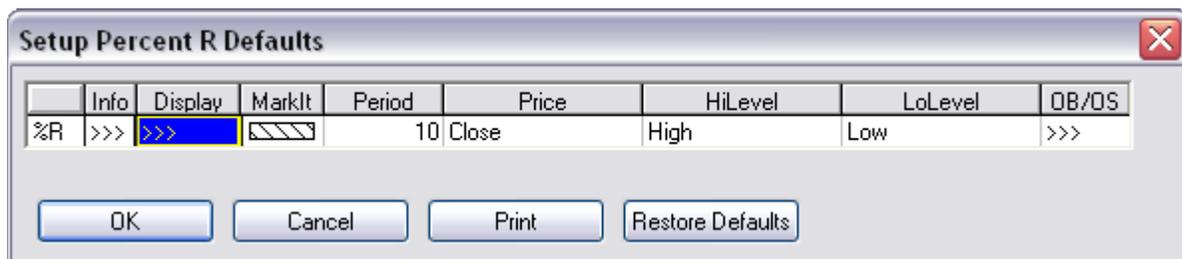
As the study has a limited range, it will always give OB or OS signals in a strong ongoing trend. This study creates a signal for every market reaction. To ensure meaningful signals each time, you may want to use this study for non-trending situations.



If %R falls below 80, it would be a sell signal. If it rises above 20, it is a buy. This study is best for shorter trends.



%R Parameters



- [Display](#)
- [MarkIt](#)
- **Period:** The time frame used for the moving average calculation.
- **Price:** The price used for the calculations.
- **HiLevel:** Selects the price used for the high level in the range.
- **LoLevel:** Selects the price used for the low level in the range.
- [OB/OS](#)

Rank (Rank)

This study ranks the individual chart points of a particular contract over a specified number of previous trading periods. For example, if a chart point had a rank of "5", and the periods were ranked from highest to lowest and the user indicated he wanted a ranking over 50 periods, that would indicate the 5th highest close over the 50-period time frame.

It is more or less a statistical measure how important a certain bar (close) is. If the Rank is 1 in a 20-period measure, you are looking into the highest close, which could mean that in a trend there might be higher closes following.



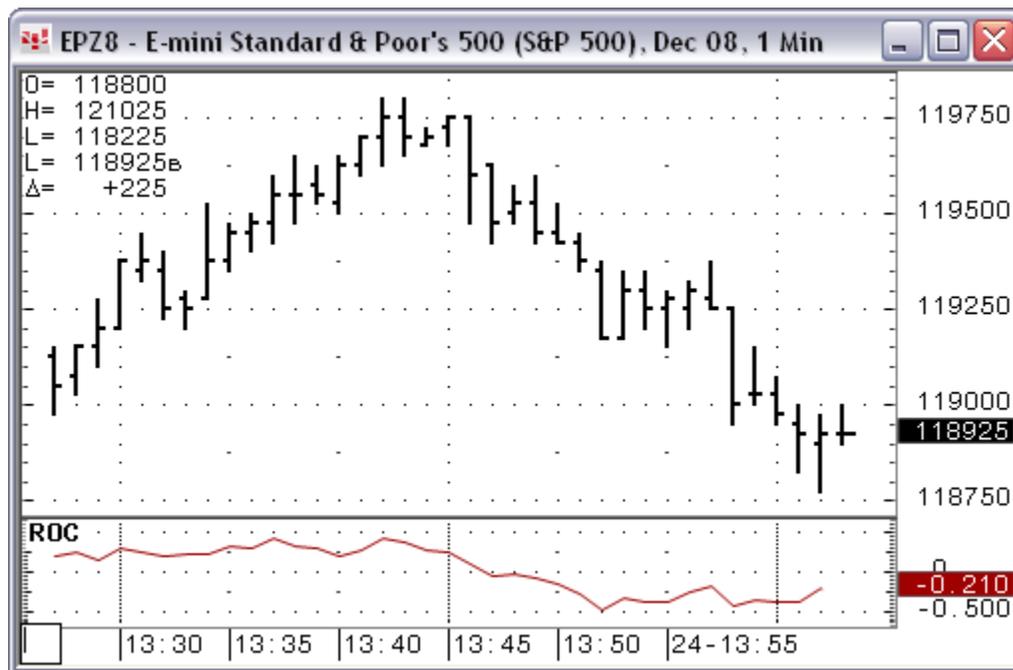
Rank Parameters



- [Display](#)
- [MarkIt](#)
- **Period:** The time frame used for the moving average calculation.
- **Price:** The price used for the calculations.
- **Order:** Allows the user to select how the rankings will be ordered. Choices include: Low to High or High to Low.
- **Prelude:** If checked, the ranking will begin immediately, rather than waiting for the entire range of observations to be completed.
- **TieValue:** Determines how ties in the observation values are treated in the ordering.
- [OB/OS](#)

Rate of Change (ROC)

This study plots the percentage change between a current price and a price that occurred a user-specified number of periods/bars earlier. ROC is centered on zero; it is positive when Price is above its prior value and negative when it is below.



Characteristics and Usage

ROC may simply be used to measure the percentage change of a market between two bars. As its name suggests, ROC may be considered a measurement of the “slope” of the market.

ROC is similar to Momentum, since it is a direct measure of market movement. The advantage of a percentage change calculation is that it is not sensitive to different price levels.

This provides for:

- A more accurate comparison between the market action of different commodities or stocks.
- A more accurate comparison of market action at different times when the commodity or stock was trading at a fundamentally different price level. This is particularly important for stocks where a \$1 point move on a \$100 stock is 1% but a \$1 move on a \$10 dollar stock is 10%.

ROC is often used as an oscillator-type study. Accordingly, users often define OB/OS conditions to identify when the market has attained a significant move.

Selling an OB market or buying an OS market is effective in a trading range market but is likely to result in large losses during a trending market; if the market trends the ROC may stabilize indicating the market is continuing to move at a persistent rate. Traders may want to use an additional condition or set of conditions to confirm a trading signal.

ROC is an unbounded study making OB/OS levels difficult to define.

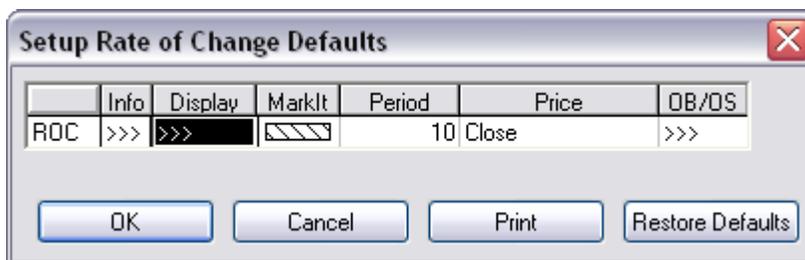
ROC, like other oscillators, may be used to identify divergence or confirmation of a new price extreme. A divergence indicates the market has lost its momentum or has become highly volatile and is likely to consolidate or reverse. Confirmation indicates the market is still accelerating away from its moving average and follow through is likely.

A difficulty with using divergence analysis on ROC is its calculation is based off of two specific dates and changes from bar to bar in the earlier date will affect the value of ROC to the same degree as changes in the current price.

Calculation

$$\text{ROC} = ((\text{Current PRICE} / \text{Prior PRICE}) * 100) - 100$$

Rate of Change Parameters

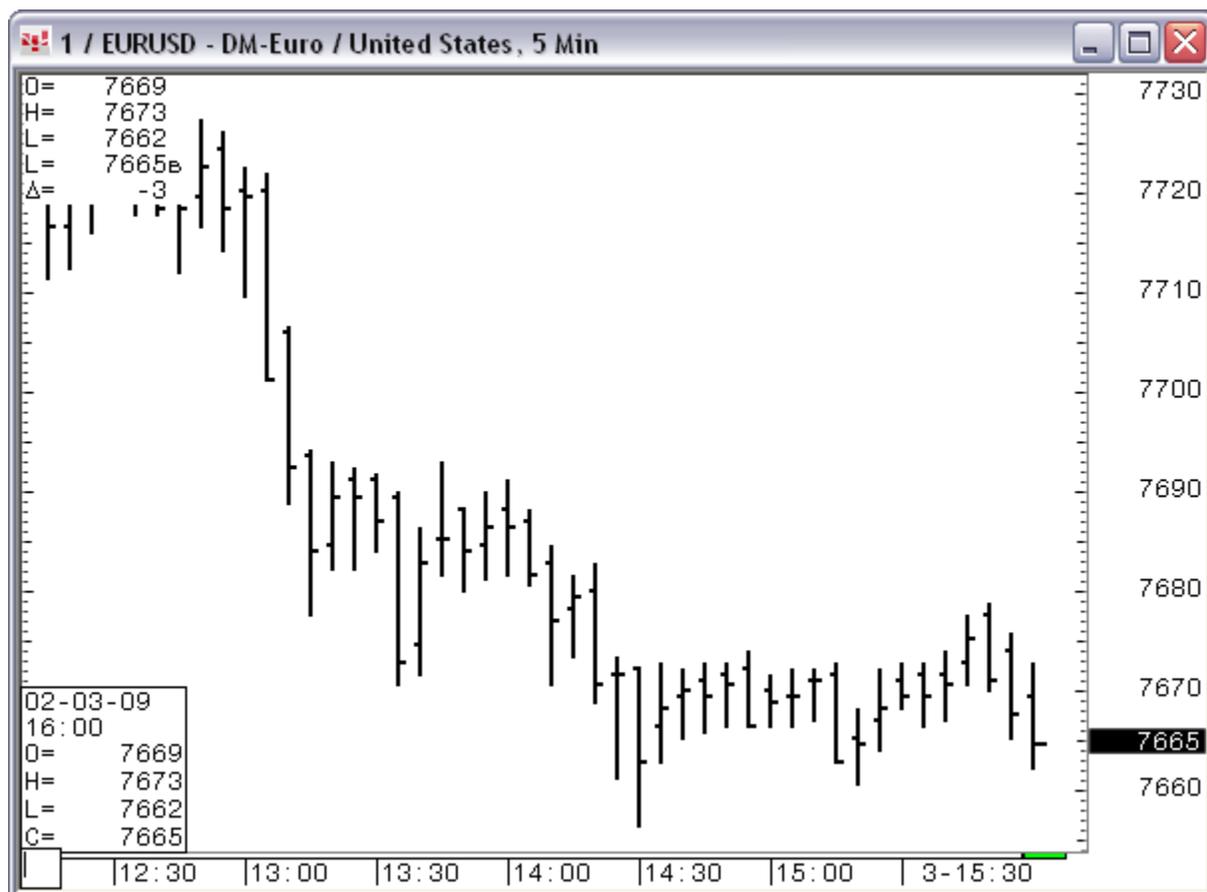


- [Display](#)
- [MarkIt](#)
- **Period:** The time frame used for the moving average calculation.
- **Price:** The price used for the calculations, e.g. open, high, last, or best ask.
- [OB/OS](#)

Reciprocal (1/X)

This study plots the reciprocal (1/x) of each chart value. This study is popular with foreign exchange traders. They can easily see the price action in the opposite pair. For example, using the symbol EURUSD plots a chart of the euro in dollars. Applying the 1/X study, and the chart becomes the price of the dollar in Euros.

These chart values are the equivalent of inputting the symbol in as lower case letters, that is, spu instead of SPU by holding down **SHIFT**. If the 1/X study is applied, then the title bar displays 1/symbol, alerting users that a reciprocal chart is displayed.



There are no parameters for this study.

Relative Strength Index (RSI)

Relative Strength Index is a price momentum indicator. Mathematically, RSI is represented as:

$$RSI = 100 - [100/(1+RS)]$$

where,

RS is the ratio of the smoothed moving average of n-period gains divided by the absolute value (that is, ignoring sign) of the smoothed moving average of n-period losses.



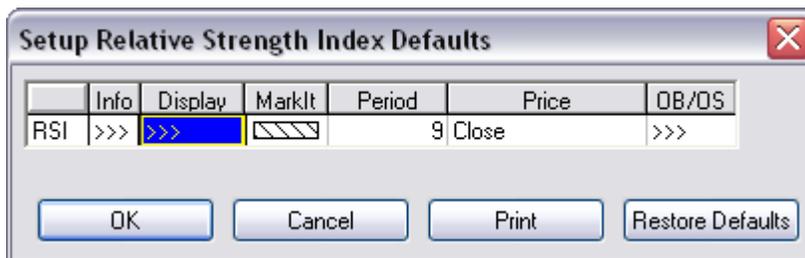
RSI quantifies price momentum. It depends solely on the changes in closing prices. Despite its name, it has nothing in common with the traditional relative strength concept, whereby the price of a stock is divided by a broad market index (such as Standard & Poor's 500 Index) to arrive at a ratio that shows the trend of a stock's performance relative to the general market. Instead, the RSI is actually a front-weighted price velocity ratio for only one item (a stock futures contract, or an index).

RSI is said to indicate an "overbought" condition when it is above 70 (CQG's default set at 75.00) and an "oversold" condition below 30 (default set at 25.00). The center line default is 50.00.

This can be a problem with explosive trends as the RSI above 90 or below 10 shows powerful momentum and an imminent crescendo type top or bottom.

Also, RSI momentum divergences are said to be frequently accurate for indicating that a market turning point is imminent, if quantified correctly. Shaun Downey's book [Trading Time](#) looks at this problem in detail.

Relative Strength Index Parameters



- [Display](#)
- [MarkIt](#)
- **Period:** The time frame used for the Momentum calculation.
- **Price:** The price used for the calculations.
- [OB/OS](#) for Hi, Lo, and Center lines.

Reversal (Rev)

Measures the profit potential in a market by assuming that the user buys whenever the market falls by a selected amount or sells whenever the market rises by that same amount.



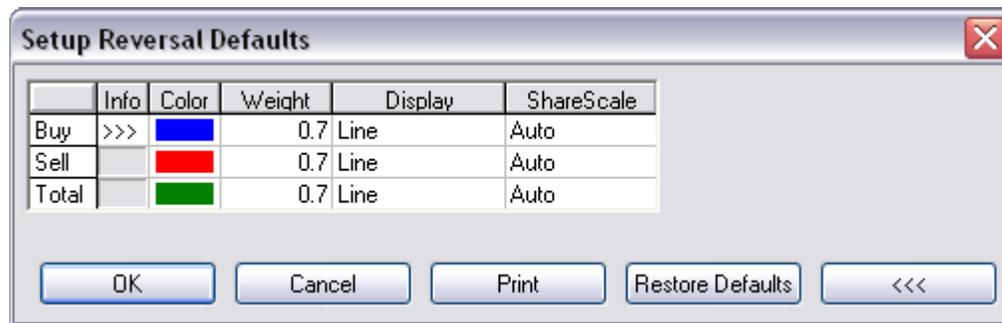
Source: CQG, Inc. © 2008 All rights reserved worldwide. www.cqg.com

09/30/2008

Reversal Parameters



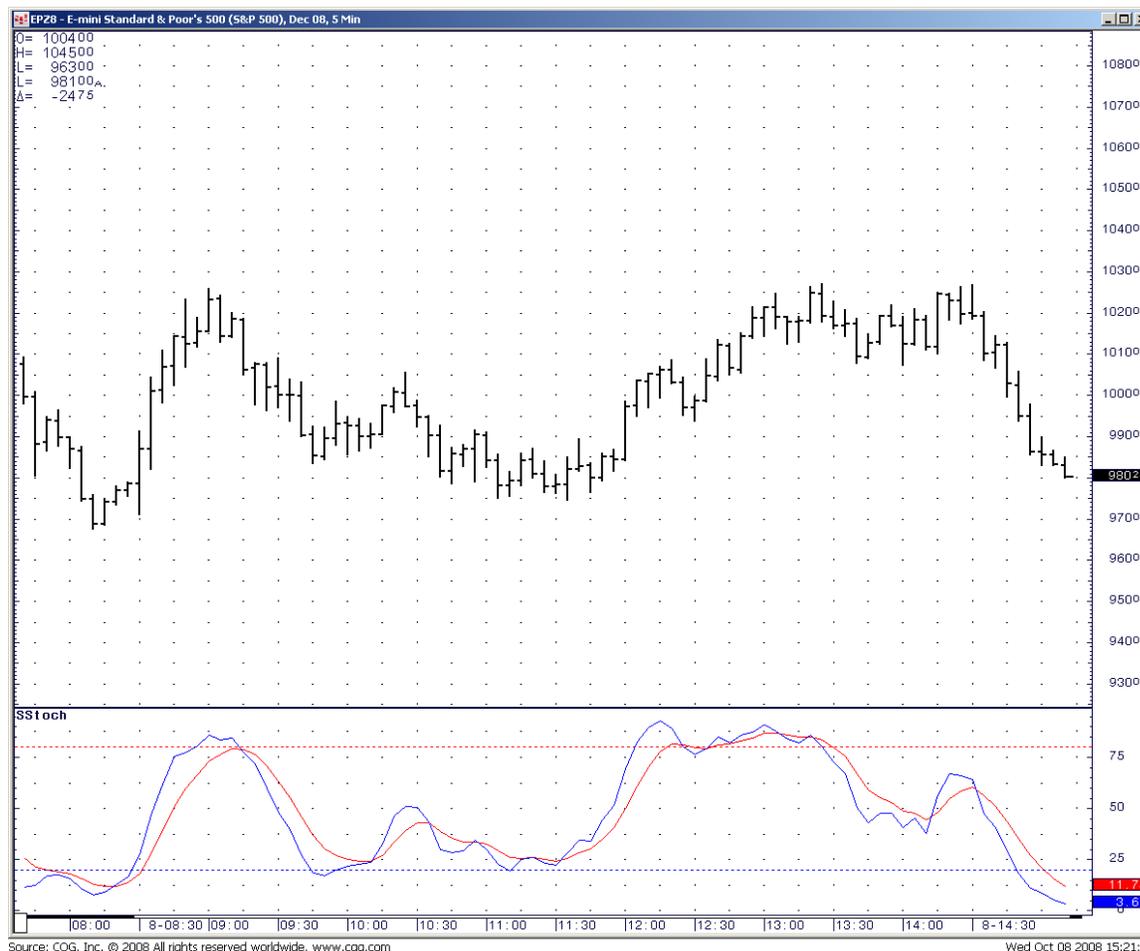
- [Display](#)



- **Price:** The price used for the calculations.
- **Bars:** Number of bars to include in study.
- **Rev:** The reversal amount, which determines how often the user switches positions.

Slow Stochastics (SStoch)

When Slow Stochastic is selected, the system internally calculates the [Fast Stochastic](#), however, only the Slow %K and Slow %D lines are displayed on the screen.



Slow %K - Is equal to the Fast %D.

Slow %D - Is a Moving Average of Slow %K values. The default for Slow %D is a Smoothed 3 Period Moving Average.

Users can choose between the Original and the Simple Algorithms. Generally, the simplified will be more responsive to price changes. The formulas for each are:

Original

K: = $(MA(\text{Close}(@) - \text{LoLevel}(@, 10), \text{Smo}, 3) / MA(\text{HiLevel}(@, 10) - \text{LoLevel}(@, 10), \text{Smo}, 3)) * 100;$

D: = $MA((MA(\text{Close}(@) - \text{LoLevel}(@, 10), \text{Smo}, 3) / MA(\text{HiLevel}(@, 10) - \text{LoLevel}(@, 10), \text{Smo}, 3)), \text{Smo}, 3) * 100;$

Simplified

K: = $MA(((\text{Close}(@) - \text{LoLevel}(@, 10)) / (\text{HiLevel}(@, 10) - \text{LoLevel}(@, 10))), \text{Smo}, 3) * 100;$

D: = $MA(MA(((\text{Close}(@) - \text{LoLevel}(@, 10)) / (\text{HiLevel}(@, 10) - \text{LoLevel}(@, 10))), \text{Smo}, 3), \text{Smo}, 3) * 100;$

Original Algorithm = [Moving Average (Closing Range)]/[Moving Average (Total Range)]

Simplified Algorithm = Moving Average [(Closing Range/Total Range)]

Closing Range = Close – Range Minimum

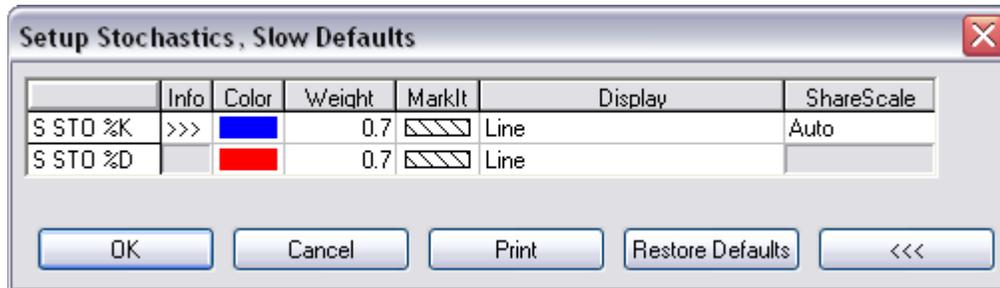
Total Range = Range Maximum – Range Minimum

Slow Stochastics Parameters



S STO

- [Display](#)



- **Algorithm:** The Algorithm for calculating the slow stochastic. Choices include: Original or Simplified. The Original algorithm smoothes the close minus the range minimum and the range prior to dividing them. The Simplified algorithm divides the close minus the range minimum and the range prior to smoothing.
- **Period:** Defines the time period for an unseen Fast %K, needed for calculating the Slow Stochastics.
- **Price:** The price used for the calculations.
- **HiLevel:** Selects the price used for the high level in the range.
- **LoLevel:** Selects the price used for the low level in the range.
- [OB/OS](#)

S STO %K and %D

- **Type:** The type of moving average used for the Average True Range calculations. Choices include: Simple, Smoothed, Exponential, Weighted, and Centered.
- **Period:** Defines the time period for Slow %D and %K.

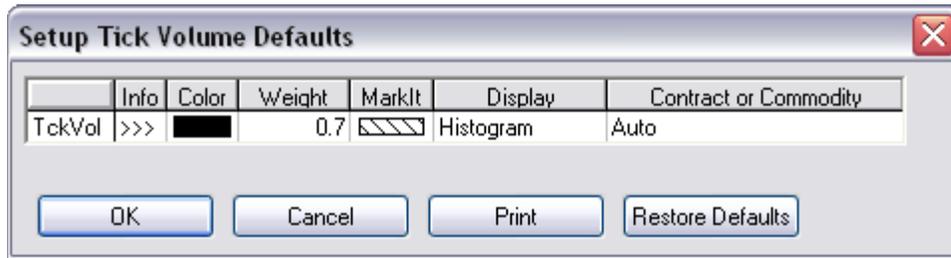
Tick Volume (TckVol)

Tick Volume represents the number of price changes, which occurred during a specified time period. This volume is always available.

Example: The Tick Volume for a 15 Minute Bar would be 50, if the price of the displayed contract changed 50 times during the 15 minutes period that constituted the bar.



Tick Volume Parameters



- [Color and Weight](#)
- [MarkIt](#)
- **Display:** Choose to display the study as line or histogram.
- **Contract or Commodity:** Select **Auto**, **Contract**, or **Commodity**. Auto corresponds to the existing tick volume type.

TFlow External Data (TFXData)

The three XData studies (BarXData, CVBXData, and TFXData) allow you to take sub-minute (millisecond) external data and plot three different types of charts within COG. These charts can be viewed as historical (static) or in a snap-shot/live mode (dynamic) depending on the data source.

Markets with good trade activity that will give the granularity needed for millisecond analytical decision making are best for this study.

These studies are used with an external data source that is sub-minute and either an historic ASCII data set or a continuously appended ASCII data set.

The data file should be represented in this column order: Date, Time, Bid, BidVolume, Ask, AskVolume, Trade, TradeVolume.

Ask, AskVolume, Bid, BidVolume, Trade, and TradeVolume are prices and volumes that are used to calculate TFXHigh/Low/Open/Close and other bar outputs and to determine the starting position of new bars. TradeVolume is used to assign TFXAskVolume/TFXBidVolume (according to current bid and ask best prices) and volume bar outputs.

Also:

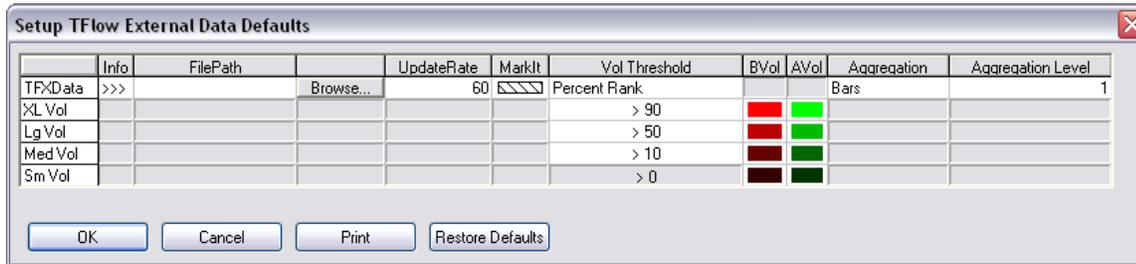
- The ASCII file must be tab-delimited (.txt file) or space-delimited (.prn file). File type .csv (comma-delimited) cannot be used.
- The first line of file should contain the contract description in this: **Symbol: MySymbol, Description: MyDescription.**
- Each value represents the current state of last best bid, last best ask, and last trade for particular date and time.
- Date format is MM.DD.YY; time format is hh:mm:ss.iii where i is milliseconds.
- Prices are two digits and are displayed as is.
- Data must be ascending.

To use this study:

13. Add the study to chart.
14. Right-click on the chart, and select **Modify Study Parameters**.
15. Click the **Browse** button to find the data file you want to import.
16. Set other parameters.
17. Click **OK**.

The data from your file is charted.

TFlowXData Parameters



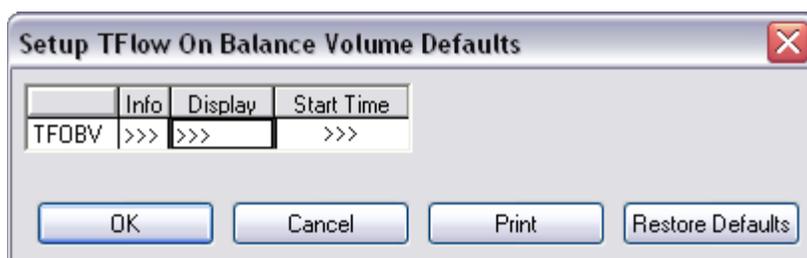
- **FilePath:** Location of data file.
- **UpdateRate:** How often you would like the system to check for changes in the data file.
- [MarkIt](#)
- **Vol Threshold:** Choose **Percent of Average**, **Percent Rank**, **Actual**, and **No Normalization**. **Percent of Average** values are taken as percents of average volume. It is calculated as the arithmetic mean of total volume of all bars in the same session from the previous trading day. **Percent of Rank** indicates where the bar falls relative to lookback period. If the previous day's average is not available, then **Actual** volume values will be displayed. **No Normalization** changes the bar color to black and removes weighted volume. Range of the bid and ask is displayed.
- **BVol:** Select the color for bid volume bars for each size of bar.
- **AVol** Select the color for ask volume bars for each size of bar.
- **Aggregation:** Select **Bars**, **Range**, or **Smoothing**.
- **Aggregation (Level):** Tells the system to create a new bar for every n bars or when the range exceeds n ticks.

TFlow On Balance Volume (TFOBV)

TFlow On Balance Volume is the running sum of the difference between bid and ask volume for each TFlow bar. The starting point of this sum is selected via study parameters. This study only works when applied to TFlow bars. It works with aggregated TFlow bars as well.

This study provides more complete information compared to the on balance volume (OBV) study applied to standard time-based price bars. The classic OBV study is the running sum of total volume traded for the price bar. The current bar's volume is added to the previous value if the bar closes higher than the previous bar and the total traded volume is subtracted if the bar closes lower than the previous bar. You don't know how much of the traded volume was actually buying or selling volume. TFlow OBV provides the actual measure of difference between buying and selling volume in the calculation.

TFlow On Balance Volume Parameters



- [Display](#)
- **Start Time:** Select number of bars back, days back, or a specific time.

Triple Exponential (Trix)

The Triple Exponential study displays the momentum of the result found by processing data through three passes of exponential smoothing.



The article "Good Trix - Triple Exponential Smoothing Oscillator" by Jack K. Hutson describing the Triple Exponential appeared in the July/August 1983 issue of Stocks & Commodities. The article explains, "When using exponential smoothing you are averaging past values of a time series in an exponentially decreasing manner. Alpha is usually used to represent the fractional value that past data is weighted, with most recent data having the most impact or weight, and each preceding days data having exponentially less impact."

The level of exponential smoothing "Alpha" is calculated by the system for the period (N) entered for the Triple Exponential, where $\text{Alpha} = 2/(N+1)$.

The article goes on to explain, "Taken by itself, triple exponential smoothing could tend to over-react to random market movements. This is the reasoning behind plotting the derivative (one day momentum) of the triple exponentially smoothed data."

One method of identifying turning points is the use of Trix step theory and Divergence. The chart below shows a 14-period Trix with the Divergence-based studies. There are 3 signals on the S*P in 2008.

Triple Exponential Parameters



- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.
- **Period:** The time frame used for the moving average calculation.
- [OB/OS](#)

Volatility (Volty)

Volatility is defined as market movement. Wide movement is considered volatile while narrow movement is considered non-volatile. The volatility study is a way to measure volatility using true range. The volatility study represents a smoothed moving average of the values found by dividing the true range by the midpoint of the true range.

The true range is the greatest of the following:

- The difference between current high and current low. It's midpoint = (current high + current low) / 2.
- The difference between current high and the previous close. It's midpoint = (current high + previous close) / 2.
- The difference between previous close and the current low. It's midpoint = (current low + previous close) / 2.

The complete formula (smoothing of the true range divided by true mid in percent) is:

```
hh := Maximum(Close(@)[-1],High(@));
```

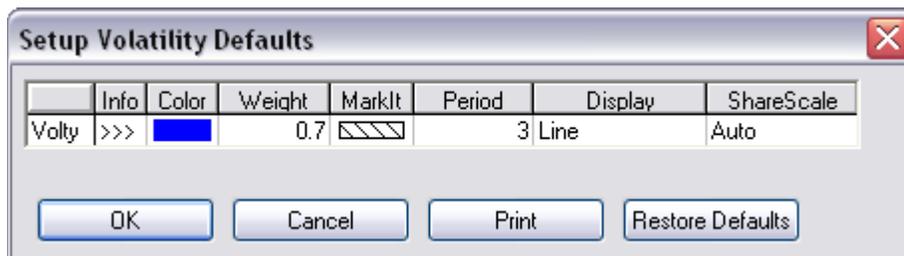
```
ll := Minimum(Close(@)[-1],Low(@));
```

```
range := hh - ll;
```

```
mid := (hh + ll) / 2;
```

```
volat := range / mid * 100
```

Volatility Parameters



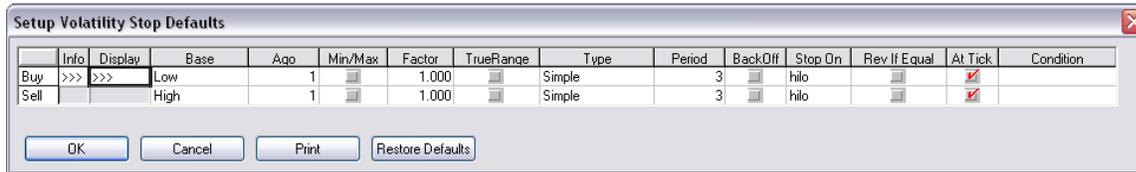
- [Color and Weight](#)
- [MarkIt](#)
- **Period:** The time frame used for the moving average calculation.
- **Display:** Choose whether the study should be displayed as a line or as a histogram.
- [ShareScale](#)

Volatility Stop (VolStp)

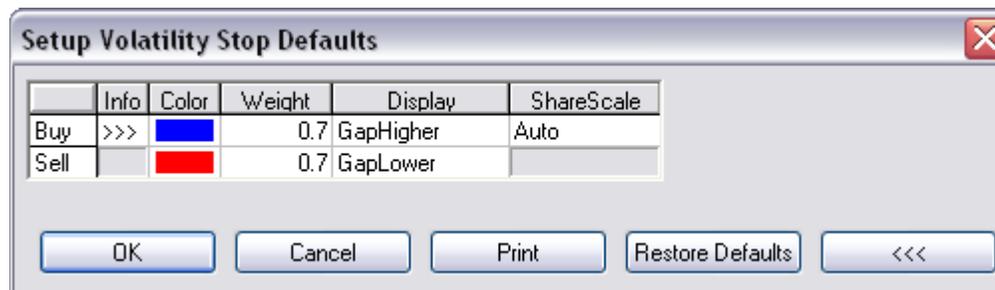
The Volatility Stop study sets stop values based on previous prices and the ranges of prior bars, giving the user great flexibility in calculating stop targets. The stops are calculated by adding the smoothed moving average of the ranges of the previous bars. The system gives sell stops by adding a moving average of the ranges of the previous bars to the lowest close. Likewise, it gives buy stops by subtracting the moving average from the highest close.



Volatility Stop Parameters



- [Display](#)



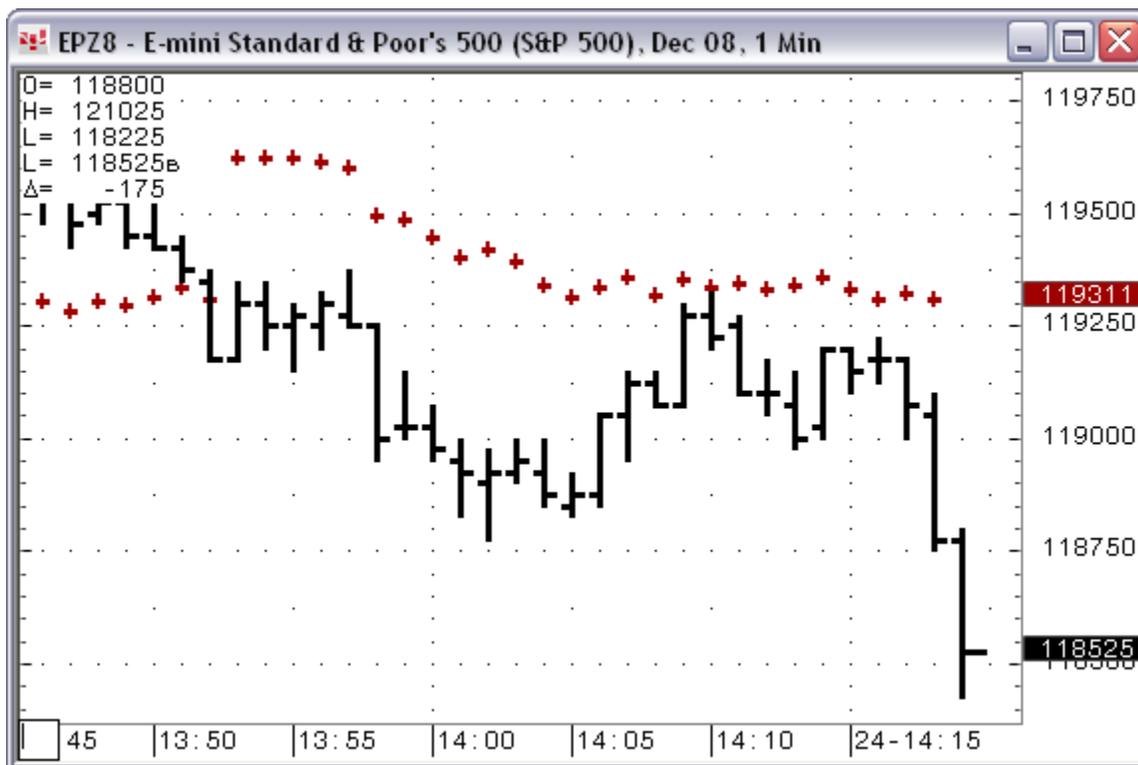
- **Base:** Selects the price used for the calculation.
- **Ago:** Selects how many bars back the calculation should begin.
- **Min/Max:** If the Min/Max checkbox is selected, the lowest (highest) base price occurring during the period that a stop is active is used to compute each stop value.
- **Factor:** The amount the average range is multiplied by before it is added to the range. Higher factors equal looser stops and, therefore, less switching between long and short.
- **TrueRange:** If selected, the average of the True Range, rather than the Range, is used in the calculation.
- **Type:** The type of moving average used for the Average True Range calculations. Choices include: Simple, Smoothed, Exponential, Weighted, and Centered.
- **Period:** The time frame used for the moving average calculation.
- **BackOff:** If selected, stops will be adjusted for increased volatility. Sell stops will be raised and buy stops will be lowered.
- **StopOn:** Allows the user to set the stop.
- **Rev If Equal:** Rather than penetration a signal is reversed when the bar high or low is equal to a stop value.
- **At Tick:** When selected, the value will be plotted at the nearest tradable price away from the market. In other words, when the volatility stop price is below the bar price it will go to a floor price, and when the volatility stop price is above the market, it will go to the ceiling price. When off, the volatility stop value will be shown at its exact price.
- **Condition:** Allows the user to specify a condition such that no positions are put on unless the selected condition is true. In other words, there is no automatic reversing.

Volatility System (VolSys)

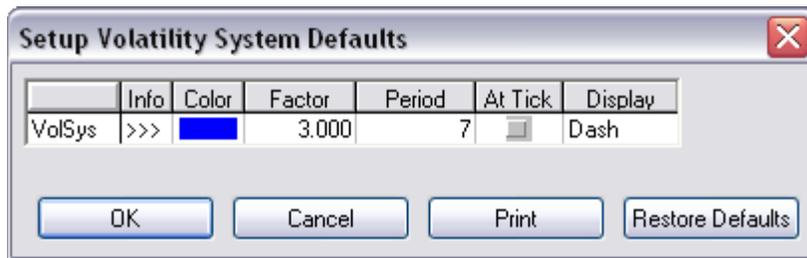
The Volatility System study was developed by J. Welles Wilder Jr. He explains it in detail in his [New Concepts In Technical Trading Systems](#).

The Volatility System is a trend-following system.

The paradigm is a stop and reverse trading system with a smoothed moving average of the ranges of previous bars. This average is added to the lowest close (for a buy stop) or subtracted from the highest close (for a sell stop), which occurred while the stop was active. The system allows the stops to back off from the market when volatility increases. However, since the stop is anchored to the highest or lowest close, the backing off is only due to increases in the volatility.



Volatility System Parameters



- [Color](#)
- **Factor:** The amount by which the average range is multiplied by before it is added to the base. Higher factors equate to looser stops and, therefore, less switching between long and short.
- **Period:** The time frame used for the moving average.
- **At Tick:** When selected, the value will be plotted at the nearest tradable price away from the market. In other words, when the volatility stop price is below the bar price it will go to a floor price, and when the volatility stop price is above the market, it will go to the ceiling price. When off, the volatility stop value will be shown at its exact price.
- **Display:** Choose whether the study should be displayed as **Dash**, **Cross**, or **Plus**.

Volume (Vol)

This study displays actual volume or tick volume either by total trades or bid/ask. Volume amounts can be filtered with a volume threshold.

Volume is used as a qualifier when interpreting patterns and other technical indicators. High volume events give more importance to underlying activity. Divergences between price action and volume are often used to predict future price activity. Volume is useful in identifying tops and bottoms of trends. An uptrend that shows volume trending lower may predict its conclusion, while a downtrend with waning volume and high volume event(s) may predict a reversal.

Tick Volume: Represents the number of price changes that occurred during a specified time period. This volume is always available. For example, the tick volume for a 15-minute bar would be 50 if the price of the displayed contract changed 50 times during the 15-minute period that constituted the bar.

Actual Volume: Represents the total number of contracts traded during the selected chart interval. The actual volume for the current day is updated when the volume information becomes available from the exchanges. The exchanges transmit volume information at different times. Therefore, when users request volume for the current day, only tick volume may be available.

For users receiving DDA data: For intraday charts, the volume study defaults to **Actual** if trade volume is being sent, otherwise the study defaults to **Tick**. Additionally, cumulative volume (reported by Eurex for certain contracts) is reported as netted volume, calculated by taking the difference between each cumulative volume figure sent by Eurex.

Auto Volume: Tells the system to automatically switch from tick volume to actual volume when actual volume is available.

This study can be applied to all chart types.

Volume Display

Volume is displayed as a histogram at the bottom of the chart. The volume values are displayed in the cursor value box:

- Vol = total actual or tick volume
- VolFilt = filtered total volume (actual volume of trades greater than the given threshold)
- VolAsk = volume of trades made on ask side
- VolFiltAsk = filtered ask volume (actual volume of trades made on the ask side greater than the given threshold)
- VolBid = volume of trades made on the bid side
- VolFiltBid = filtered bid volume (actual volume of trades made on the bid side greater than the given threshold)



Filtered values are indicated by the lighter shades of black, green, and red.

Volume Calculation

Trade volume is associated with a bid or ask side in this way:

- If the trade is less than or equal to the best bid, all of its volume is associated with the bid.
- If the trade is greater than or equal to the best ask, all of its volume is associated with the ask.
- If best bid and best ask are equal or crossed and the trade has occurred, half of its volume is associated with the bid and half with the ask (except TFlow).
- If the trade is less than the best ask and greater than the best bid, its volume is split between bid and ask inversely proportional to the distances to best bid/best ask, i.e. the closer the trade is to the best bid, the higher the quantity associated with the bid.

Fractional volume is rounded to the closest integer (standard mathematics).

Filtered trade volume for a bar is calculated as the sum of the ask/bid/total volumes of trades inside the bar, with the actual volumes greater than or equal to the given threshold.

Consecutive trades are considered as one large trade if all of the following conditions are met:

- They all happened on the same side (bid or ask).
- There were no intervening opposite side trades among them (trade that is split between bid and ask is not considered intervening).
- They happened within 50 milliseconds of each other (TFlow only).
- No BBA updates occurred between trades.

If a large trade contains trades from several bars, its volume is assigned to the last bar.

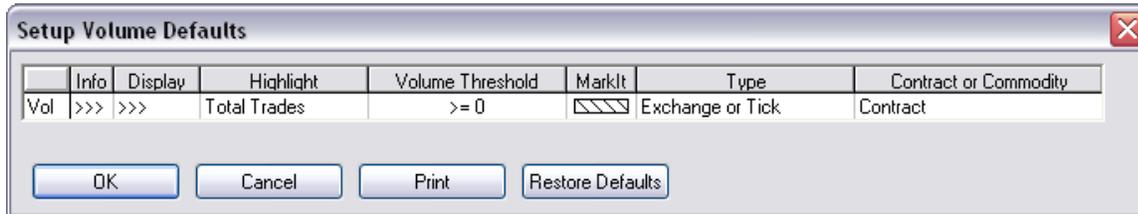
If a trade is associated with the bid or ask side, the tick corresponding to this trade is associated with the same side. If a trade is divided between both sides, then the corresponding tick is divided between sides in the same proportion. Ticks assigned to bid and ask sides are accumulated in the VolBid and VolAsk outputs.

Filtered tick volume is calculated as sum of ticks corresponding to:

- single trades, not recognized as large trades, with volume greater than or equal to the given threshold, and
- large trades with volume greater than or equal to the given threshold.

The Volume study works with most chart types (bar, candlestick, equalized sessions, fill gap, line, no gap, percent bar, tick, TFlow, time-based TFlow, yield, BarXData, CVBXData, and TFXData). Total actual and tick volume are calculated for historical charts and for point and figure charts built from bars. Total actual, bid, ask, and tick volume are calculated for point and figure charts built from ticks.

Volume Parameters



- [Display](#)
- [MarkIt](#)
- **Highlight:** Defines which curves are displayed, **Total Trades** or **Bids/Asks**.
- **Volume Threshold:** Filters volume. All trades with volumes greater than this value are treated as large, from 0-1000000. Must be enabled for this parameter.
- **Type:** Defines type of volume displayed on curve. Select **Exchange Only**, **Tick Only**, or **Exchange or Tick**.

Actual volumes represent the total number of contracts traded during the selected chart interval.

Tick volumes are the number of price changes that occurred during a specified time period.

For **Exchange or Tick**, exchange volume will be used if it's available, otherwise ticks will be used.

- **Contract or Commodity:** Select **Auto**, **Contract**, or **Commodity**. Auto corresponds to the existing volume type.
- **Hi/Lo:** Optionally, displays a high and low line (select the **Display** check boxes). You can choose the color, weight, and line style.

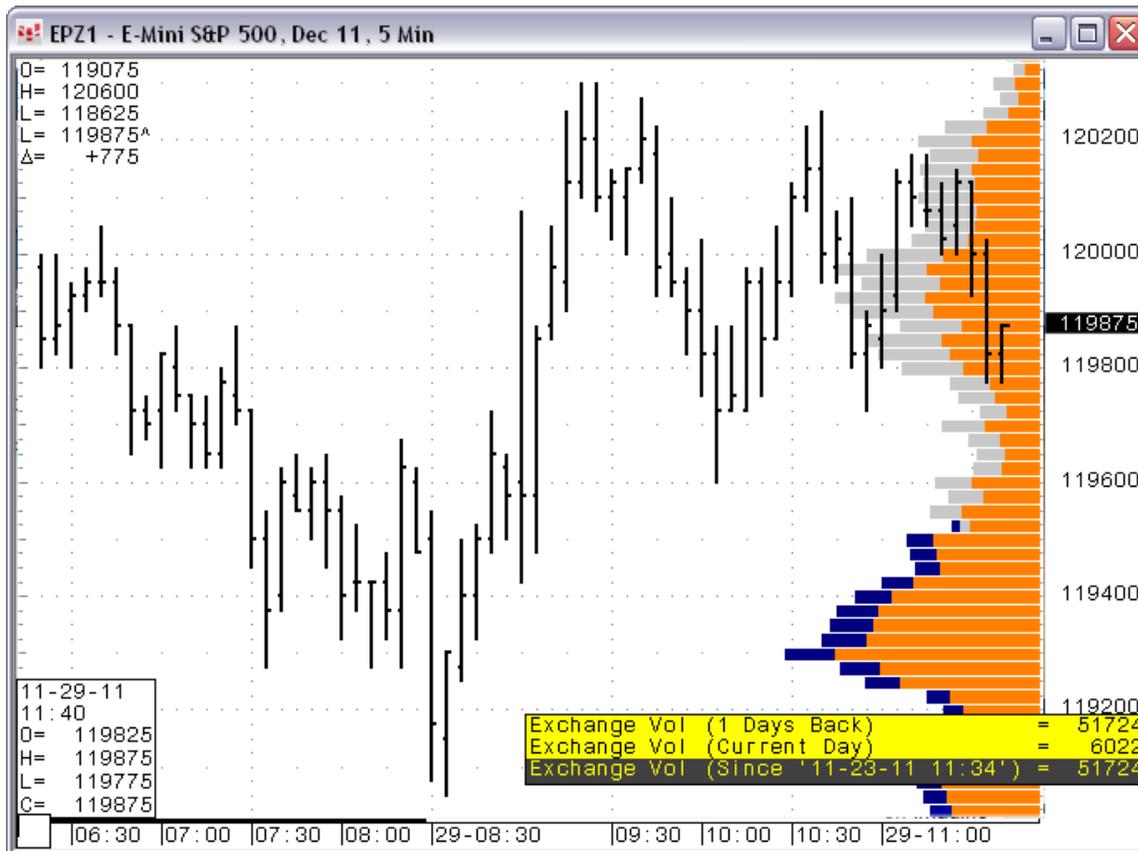
Volume Profile (VP)

The Volume Profile study displays the volume distributions for prices during the day or session, plotting volume as a histogram bar on the price axis.

It allows user to see and analyze prices with the most trades during the day or session. Volumes can be represented as ticks or as exchange volumes.

Volume for the current day or session is displayed for historical charts as well as for intraday charts.

Hovering the mouse over the display shows concrete price volume.



If you have more than one volume profile applied to the chart and they overlap, hover your mouse over the profile to see all values, as in the chart image.

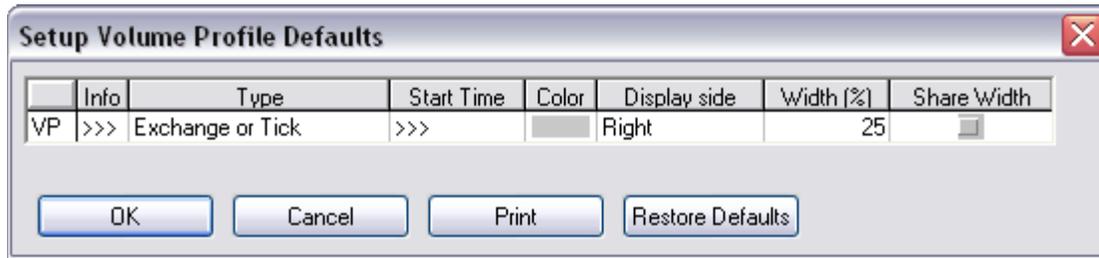
This study is the analog of the graphic volume presentation in Market Profile, although in the contrast to the Market Profile, it represents direct volumes for prices rather than volumes in percents.

If this study is part of an analog study, then volume will be shown for the foreground symbol only.

This study is an overlay available on all charts except SpreadBar and Market Profile.

[Contact CQG](#) to be enabled for this study.

Volume Profile Parameters



- Type:** Choose **Exchange** volume, **Tick** volume, or **Exchange or Tick**.
Exchange volumes represent the total number of contracts traded during the selected chart interval.
Tick volumes are the number of price changes that occurred during a specified time period.
 For **auto** volumes, exchange volume is used if it's available, otherwise ticks will be used.
- Start Time:** Choose **Current session**, **Current day**, or **Custom session**, **Date/Time**, or **Days back**. The custom session specified in Chart Preferences is used. If a custom session is not available, then the current day volume is displayed. The **Date** and **Time** parameters are available when you select **Date/Time** for the start time. The **Days back** parameter is available when you select **Days back** for the start time.
- Color** of the volume profile bars.
- Display side:** Choose which side of the chart you want volume displayed on.
- Width:** Determines how far across the chart the volume profile bars extend.
- Share Width:** If you have more than one volume profile applied to the chart, they are displayed on after the other at a particular price. If you select Share Width, the volume profiles overlap instead.

Volume and Open Interest (VoIOI)

Either the Tick Volume or Actual Volume will appear when Volume & Open Interest is requested.

Tick Volume

Tick Volume is available for most charts and appears when the Actual Volume is not available. Tick Volume displays the number of price changes that occurred during a specified time period.

Example: The Tick Volume for a 15 Minute Bar would be 50 if the price of the displayed Contract changed 50 times during the 15-minute period that constituted the bar.

Actual Volume

The study automatically reports Actual Volume, instead of Tick Volume, when Actual Volume is available. Actual Volume represents the Total Volume for all currently traded contracts, not the Contract Specific Volume. Actual Total Volume is updated automatically when the volume information becomes available from the exchanges. The exchanges transmit volume information at different times.

Open Interest

Open Interest displays the number of contracts that are not closed or delivered for a given day. The Open Interest that appears is the Total Open Interest for all currently traded contracts, not the Contract Specific Open Interest. Open Interest is updated when the volume and open interest information becomes available from the exchanges. Exchanges transmit volume and open interest information at different times.

Interpretation

Volume is used as a qualifier when interpreting patterns and other technical indicators. High volume events give more importance to underlying activity. Divergences between price action and volume are often used to predict future price activity. Volume is useful in identifying tops and bottoms of trends. An uptrend that shows volume trending lower may predict its conclusion while a downtrend with waning volume and high volume event(s) may predict a reversal. In the chart above during the uptrend Open Interest is declining predicting the end of the trend.

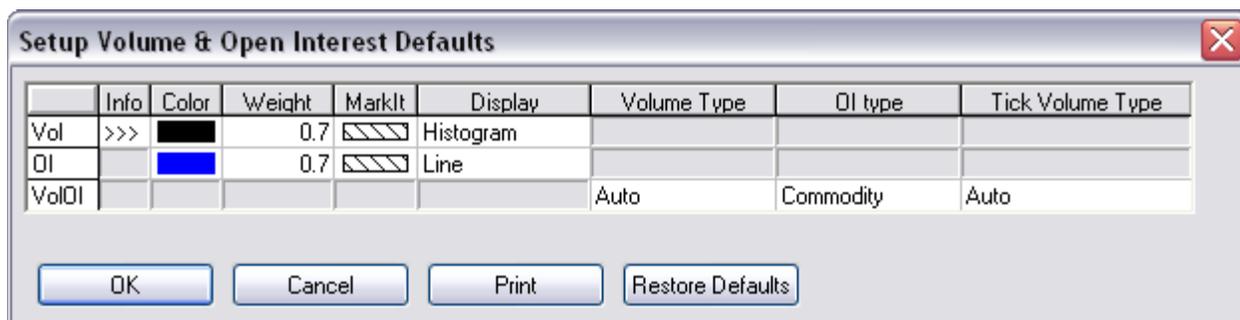


Volume with 50-period Simple Moving Average Added.

Key Reversal with high volume following a high volume down day.

Hook Reversal with High Volume

Volume and Open Interest Parameters



- [Color and Weight](#)
- [MarkIt](#)
- **Display:** Choose whether the study should be displayed as a line or as a histogram.
- **Volume Type:** Select **Auto**, **Contract**, or **Commodity**. Auto corresponds to the existing volume type.
- **OI type:** Select **Contract** or **Commodity**.
- **Tick Volume Type:** Select **Auto**, **Contract**, or **Commodity**. Auto corresponds to the existing tick volume type.

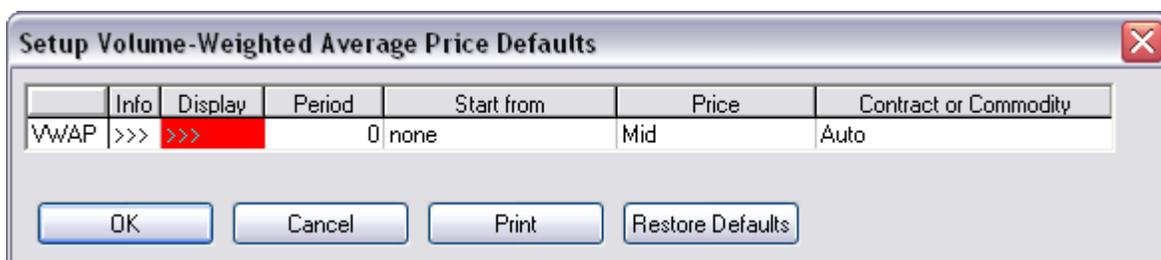
Volume-Weighted Average Price (VWAP)

VWAP is the volume weighted average price for a futures contract plotted as a line on the price chart. The calculation is the sum of traded volume times the price divided by the sum of the traded volume.

This study has a number of uses. It provides the current volume weighted average price for the trading day or the trading session. Traders can compare the current price to the VWAP. In addition, the VWAP can be calculated using a set look back period and smooth the price data similar to a standard moving average.

VWAP = (Sum of traded volume*price)/(Sum of the traded volume)

VWAP Parameters



- [Display](#)
- **Period:** Enter a value for the look back period of the average. Period is measured in bars and designates the fixed number of bars to weight. It is needed when **Start from** = **None**.
- **Start from:** Select **StartofDay**, **StartofSession**, or **None** to indicate the point to start the calculation. **None** indicates that Period will be used instead of **Start from**.
- **Price:** Select the price to be considered in the calculation.
- **Contract or Commodity:** Select **Auto**, **Contract**, or **Commodity**. Auto corresponds to the existing volume type.

ZigZag (ZZ)

The ZigZag study, a useful graphical tool that connects significant chart points together, draws a line between significant highs and significant lows based on the parameters that you set. In this way, it captures only the most significant changes. It provides an especially clear picture of contracts that move from a high to a low and back.

Peak is usually always correct "afterwards." If the next low is lower, peak would follow until it makes higher lows than it turns. If it makes a view higher low, it will first turn, but continue to downtrend if lower lows are following.



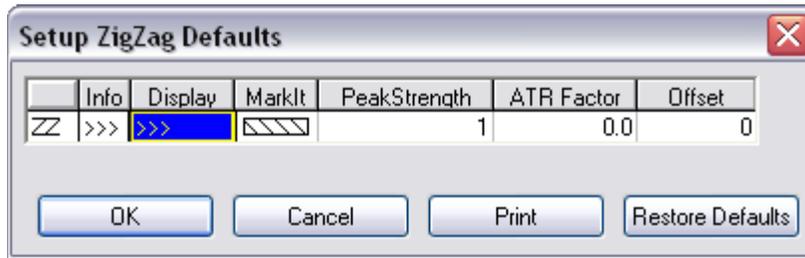
Peak Strength is used to find possible peaks. It determines the number of highs or lows that must be present before and after a particular price to define it as a peak. When a peak has been found, the ATR Factor is used to determine whether the found peak has had a significant price change using the following conditions:

When the price goes down: $\text{high} > \text{swingPrice} + \text{ATR_Factor} * (\text{TrueRange})$

When price goes up: $\text{low} < \text{swingPrice} + \text{ATR_Factor} * (\text{TrueRange})$

where TrueRange is calculated as $\text{MovingAverage}(\text{High-Low}, 7)$ and swingPrice contains price when swing has been started or continued.

ZigZag Parameters



- **Peak Strength:** The peak strength determines the number of highs or lows that must be present before and after a particular price to define it as a peak.
- **ATR Factor:** The average true range factor determines how far the price has to be up or down to be considered a new high or low.
- **Offset:** The current bar cannot be accurately included in the ZigZag study because the study is dependent on future information. This parameter allows you to offset the time series.

Pre-Trade Studies

DOMActivity (DmAct)

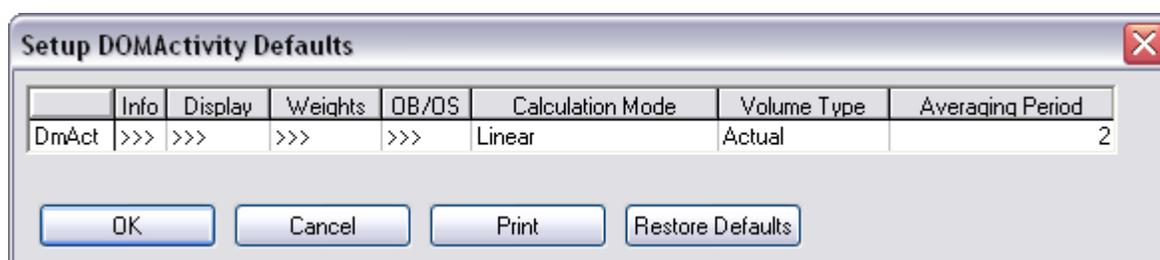
This is one of four pre-analytic studies that can be used with TFlow charts.

This study measures the amount of trader activity, including orders, modifies, and cancels, around the market. It is calculated as the amount of DOM changes for four ticks up and four ticks down from the best bid/ask.

The study begins calculating when you add it and will not display historical data. It is recalculated each time the TFlow bar updates until the next bar is created.

An enablement is required for this study.

DOMActivity Parameters



- [Display](#): Color, weight, display, and MarkIt for bid and ask.
- **Weights**: Enter values to weight the sum of the four bids or asks.
- [OB/OS](#)
- **Calculation Mode**: Select **Linear** or **Market Adaptive**.

Linear = uses the four bids and asks closest to best to calculate weighted sum (bids and asks 2, 3, 4, 5).

Market Adaptive = uses three bids and asks based on these rules: If the next bar's middle is higher, then bids 3, 4, 5 and asks 2, 3, 4 are used. If the next bar's middle is lower, then bids 2, 3, 4 and asks 3, 4, 5 are used. If the next bar's middle is the same as the current bar, then bids 2, 3, 4, and asks 2, 3, 4 are used.

- **Volume Type**: Select **Actual** or **Ticks**.
- **Averaging Period**: Enter a number, so that the study value is an average of that many of the last calculated values.

DOMTracker (DmTr)

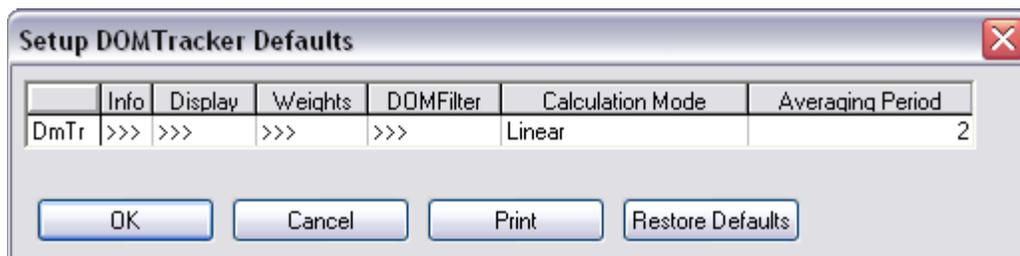
This is one of four pre-analytic studies that can be used with TFlow Charts.

This study shows the power of the offer and demand around the market.

It is calculated as a weighted sum of the four bids and a weighted sum of the four asks next to the best bid/ask.

An enablement is required for this study.

DOMTracker Parameters



- **Display:** Color, weight, display, and MarkIt for bid and ask.
- **Weights:** Enter values to weight the sum of the four bids or asks.
- **DOMFilter:** Filter by either time or size and set the threshold for the filter.
- **Calculation Mode:** Select **Linear** or **Market Adaptive**.
 - Linear = uses the four bids and asks closest to best to calculate weighted sum.
 - Market Adaptive = uses three bids and asks based on these rules: If the next bar's middle is higher, then bids 3, 4, 5 and asks 2, 3, 4 are used. If the next bar's middle is lower, then bids 2, 3, 4 and asks 3, 4, 5 are used. If the next bar's middle is the same as the current bar, then bids 2, 3, 4, and asks 2, 3, 4 are used.
- **Averaging Period:** Enter a number, so that the study value is an average of that many of the last calculated values.

DOMTracker Oscillator (DmTrOsc)

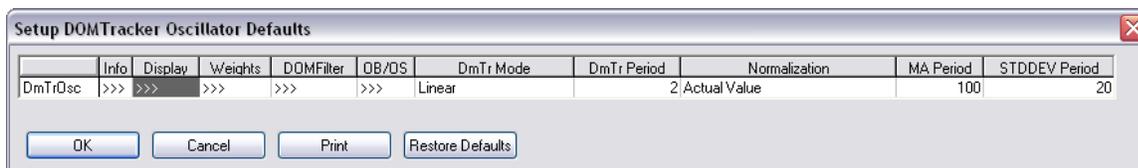
This is one of four pre-analytic studies that can be used with TFlow Charts.

This study displays the accumulated value of the difference between the offer and demand around the market.

It is calculated as the difference of the DOMTracker ask value and bid value accumulated over time.

An enablement is required for this study.

DOMTracker Oscillator Parameters



- [Display](#)
- **Weights:** Enter values to weight the sum of the four bids or asks.
- **DOMFilter:** Filter by either time or size and set the threshold for the filter.
- [OB/OS](#)
- **DmTr Mode:** Select **Linear** or **Market Adaptive**.
- **DMTr Period:** Time frame used to calculate study bars.
- **Normalization:** Select **Actual Value**, **Normalized by SUM** (value divided by sum of bid and ask), or **Normalized by StdDev** (based on standard deviation).
- **MA Period:** Time frame used to calculate moving average.
- **STDDEV Period:** Time frame used to calculate standard deviation.

Older Orders Ratio (OORatio)

This is one of four pre-analytic studies that can be used with TFlow Charts.

One OORat study value is calculated for each TFlow bar.

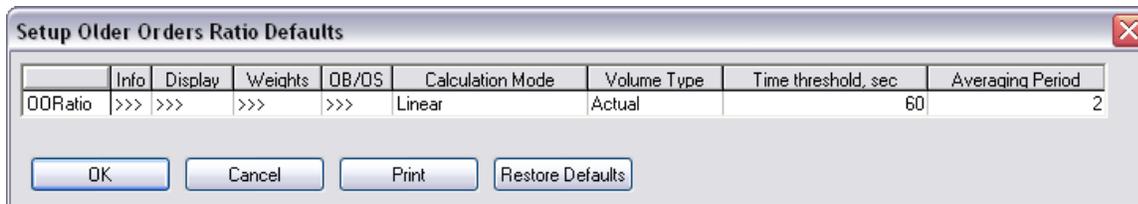
This study displays the order volume ratio for order activity that occurred earlier than the specified time threshold. You set the time threshold, calculation method, price weights, and price selection mode.

It is calculated as the ratio of two DOMTracker values. The study begins calculating when you add it and will not display historical data. It is recalculated each time the TFlow bar updates until the next bar is created.

The weighted average of all rates will be calculated using the weights defined for specified prices.

An enablement is required for this study.

Older Orders Ratio Parameters

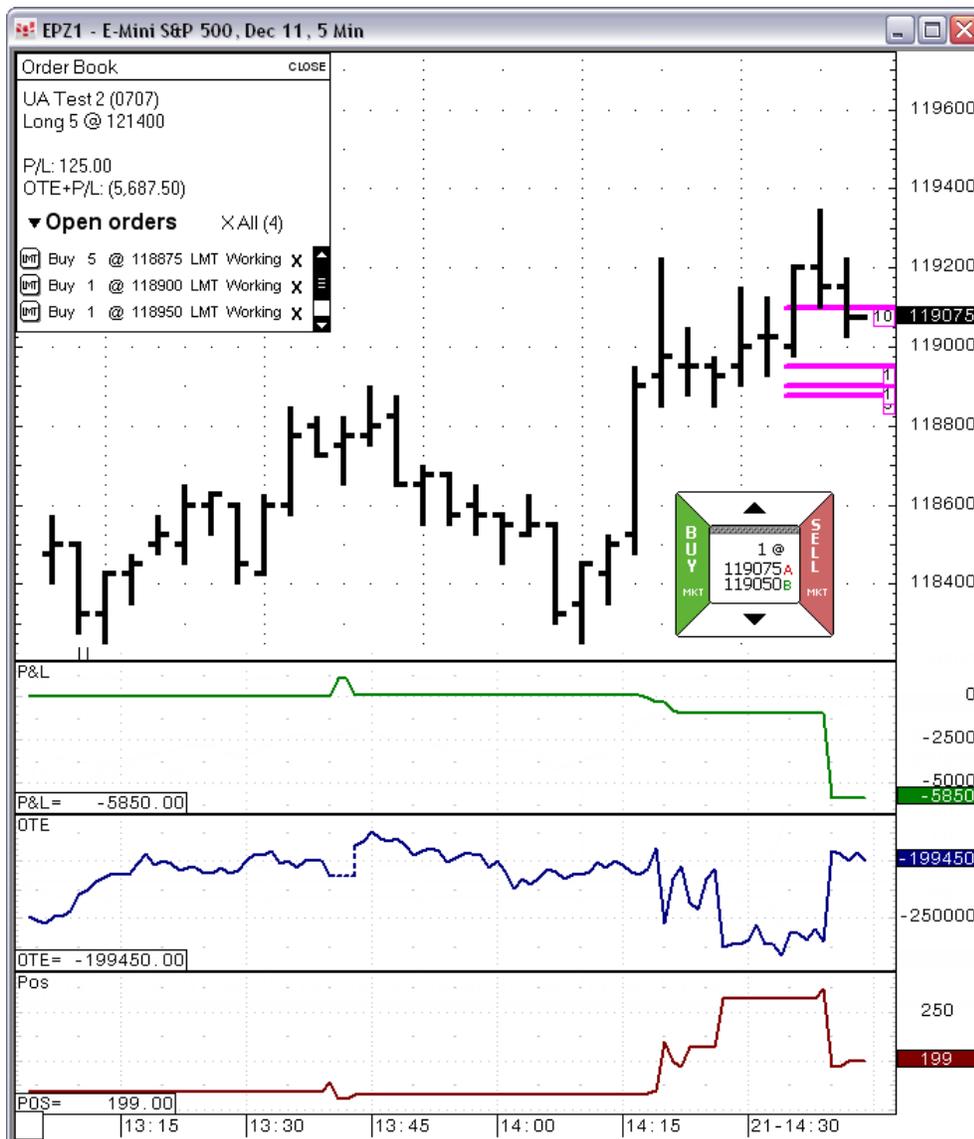


- [Display](#): Color, weight, display, and MarkIt for bid and ask.
- **Weights**: Enter values to weight the sum of the four bids or asks.
- [OB/OS](#)
- **Calculation Mode**: Select **Linear** or **Market Adaptive**.
 - Linear = uses the four bids and asks closest to best to calculate weighted sum.
 - Market Adaptive = uses three bids and asks based on these rules: If the next bar's middle is higher, then bids 3, 4, 5 and asks 2, 3, 4 are used. If the next bar's middle is lower, then bids 2, 3, 4 and asks 3, 4, 5 are used. If the next bar's middle is the same as the current bar, then bids 2, 3, 4, and asks 2, 3, 4 are used.
- **Volume Type**: Select **Actual** or **Ticks**.
- **Time threshold, sec**: Determines the older orders threshold in seconds.
- **Averaging Period**: Enter a number, so that the study value is an average of that many of the last calculated values.

Trading Studies

This set of studies provides open trade equity, position, and profit and loss account statistics.

Parameters allow you to choose between all accounts or a single account and between the current instrument or all instruments. Studies respect account mapping when a specific account is used.



Calculation is based on the parameters set in account preferences and global trading preferences, including:

- *Group strategy positions by filled spread orders*

- *Show synthetic positions for strategies*
- *Use yesterday's settlement price to calculate OTE and P&L*
- *Calculate OTE using Last trade or Best Bid/Ask*
- Trading studies do not take into account net combined commodity groups.

These studies, when applied to spreads, display the last value for the current bar only. Also in this case, all global trading preferences are taken into account.

For preceding trading days, study values are calculated following these rules:

- If the bar interval includes one or several historical statements, values are taken from the last statement belonging to the bar.
- If the bar interval does not include historical statements, values are taken from the historical statement of the preceding day for all bars except the last bar of the trading day. The value of last bar of the trading day is taken from the next historical statement corresponding to the trading day of the bar.

For example: For a week bar, the values are taken from Friday's statement. For yesterday's 60-min bars, the values are taken from the historical statement covering the day before yesterday, except for the last bar of yesterday. The value of the last bar of yesterday is taken from the next historical statement covering the yesterday.

These studies can be applied to charts that allow association of a bar with a specific bar time. They cannot be applied to Market Profile.* They do not support continuation mode and cannot be overlaid on a chart.

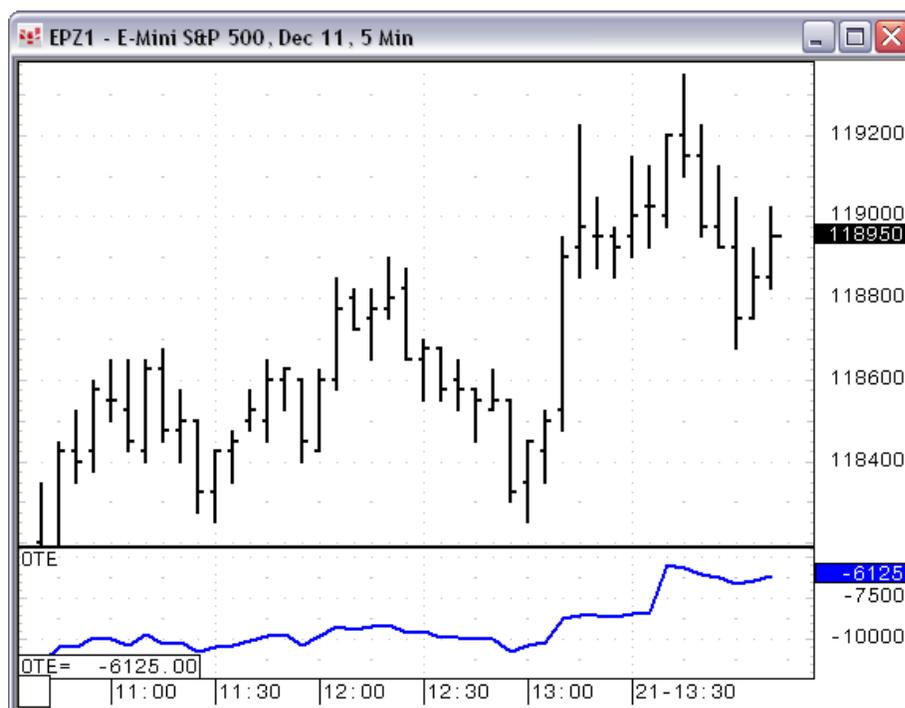
Access to trading studies requires an enablement.

*Market Profile is a registered trademark of CME, ©2011 Chicago Mercantile Exchange. ALL RIGHTS RESERVED.

Open Trade Equity (OTE)

The OTE study is one of a several trading studies.

It has a single output representing OTE of the open position. For options, output represents MVO.



Currency is determined by contract and account:

- For a specific contract, the currency of the contract is used.
- For a specific account and all contracts, the reporting currency of the specified account is used. If it is not specified, USD is used.
- For all accounts and all contracts, USD is used.

Open Trade Equity Parameters

- [Display](#)
- [MarkIt](#)
- **Account Filter:** Select **All Accounts**, **Selected Accounts**, or a single account.

If you choose **Selected Accounts**, then:

- if there is an account associated with the chart, either through SnapTrader or the Order Book, then that account is used.
- if there is no account associated with the chart, then no study values are returned.

Once this parameter is set, if you select a different account on the chart, then the newly selected account is automatically applied.

- **Instrument Filter:** Select **Current Instrument** or **All Instruments**.

For spreads, only **Current Instrument** is available.

Order Display (OrderDis)

The Order Display study is one of a several trading studies.

This study offers an easy technique to compare trading decisions with subsequent market action by marking executed trades on the price chart. This study is a good companion to use with the SnapTrader order routing interface and the Order Book.

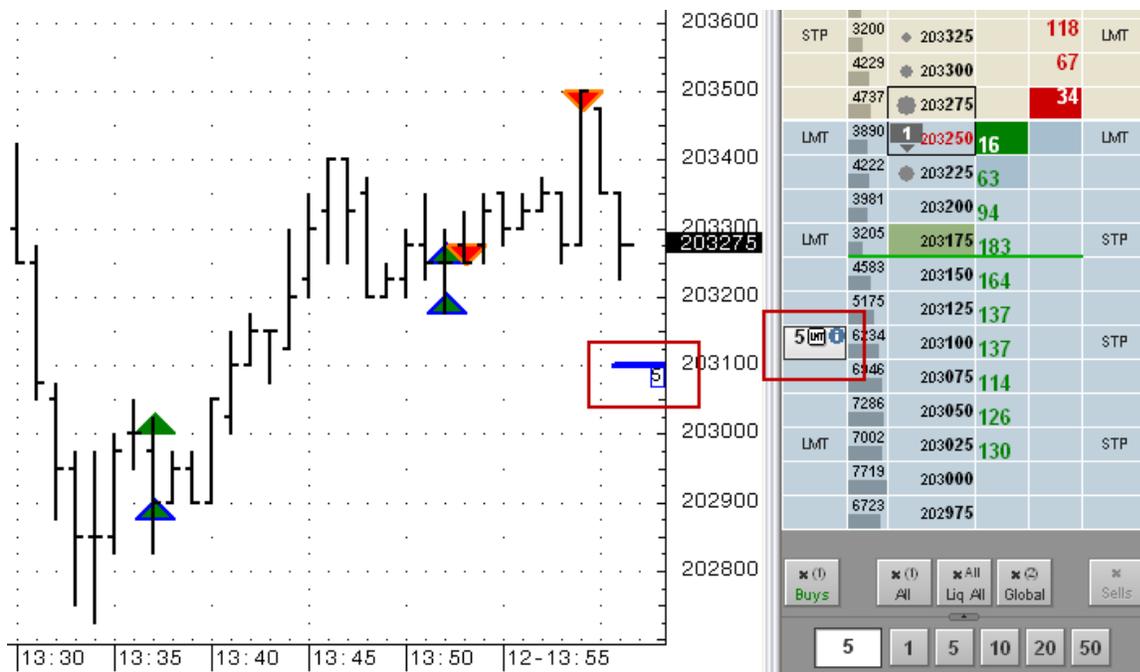
The study places symbols on a chart for any executed orders and plots horizontal lines for any working orders. The executed trade symbols are placed on the intraday bar the trade occurred during and at the price of the fill.

The plot for indicating a working order is a horizontal line. The line's starting point is the time the order was placed. The line displays the size of the working order. The working order can be canceled by right clicking on the horizontal line and choosing cancel order from the menu.

Rolling the mouse over the order display symbol on the chart opens a tooltip window detailing the date, time, bought or sold, and size of the filled order. The working order tooltip includes the same information and the type of working order.

Charts of synthetically traded spreads will display executed trade symbols and working orders on both the chart of the spread and the charts for the outright contracts. Charts of exchange traded spreads will only display the symbols on the chart for the exchange traded spread, not the outright legs.

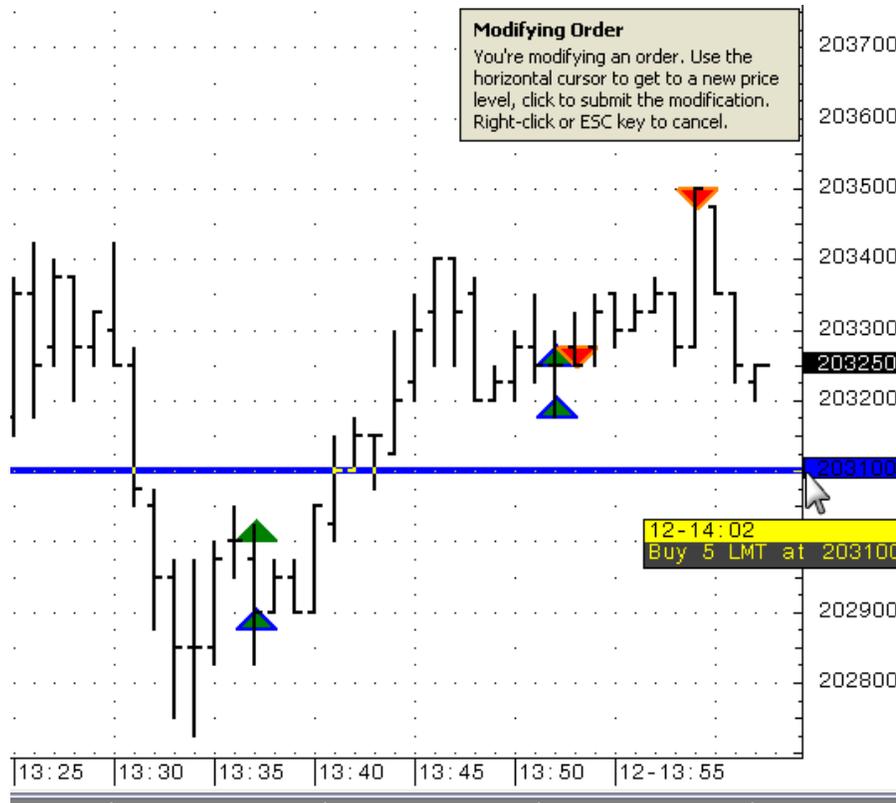
If the **Drag to Modify** parameter is turned on, you are able to modify the working order price from the chart. A working order is displayed on the chart with its quantity. In this example, the working order quantity is 5:



If the **Group strategy positions by filled spread orders** check box is selected (Strategy Order preferences), then this study shows fills of spreads also.

To modify working order price

1. Click the colored line associated with the order to enter modify mode, which is confirmed with a message on the chart.



2. Drag the horizontal line up or down to the new price.
3. Click to park the order at that price and exit modify mode. Depending on your notification preferences, you may be asked to confirm the modification.

All orders at a single price are modified even if you entered them as separate orders.

If the order price changes or if the order is no longer working due to other account activity, the order is not modified.

Order price modification mode is cancelled automatically if the order becomes invalid.

Order Display Parameters

Parameters are:

- **Enable:** Allows you to select which elements will be shown on the order display. Choices are: **All**, **Working**, or **Filled**.
- **Show Fills:** Allows users to select how multiple orders on the same bar are displayed. Choices are: **Combined** or **Individual**.
- **Account Filter:** Select **All Accounts** or a single account.
- **Order Filter:** Select orders that should be displayed based on how they were entered. This field always contains the options for All orders. Other values differ depending on your particular trading and include:
 - Manual** = trade posted through Order View
 - Local** = local trade created through AddTrade window or during upgrade process
 - Web** = trade posted through Web Client
 - undefined** = trade posted through unknown subsystem
 - Statement** = statement trade that was not reconciled successfully
 - CAST** = trade placed through CAST
 - Smart Client** = trade placed through Smart Client
 - Odyssey** = trade placed through Odyssey
 - Strategy** = trade placed through Strategy View
 - All, Price, Time, Line, Study, or Condition Alert** = trade placed through Alert View
- **Cursor Value:** Select the values to be displayed in the Cursor Value box. These values are valid at the current time only and have no historical value:
 - None** = no values (default)
 - WKG B/S Lots** = total number of working buy and sell lots
 - WKG B/S Orders** = total number of working buy and sell orders
 - Both** = working buy and sell lots and orders
- **Drag to Modify:** Enables modifying the working order price with a mouse click. If the parameter is turned on, then clicking the working order display symbol allows you to modify its price. If the parameter is turned off (default), then clicking the working order display symbol does nothing.
- [Display](#)

Working with Order Study Values on Market Profile

Instead of having to move to the trading interface from a market profile chart to see working and filled orders or to cancel working orders, you can place these orders directly on the market profile.

From an open market profile chart, you simply add the **Order Display (OrdDis)** study. Order are marked in this way:

-  = working order
-  = working stop order
-  = filled buy order
-  = filled sell order
-  = filled buy and sell at the same price

To add the Order Display study

1. Right-click the Market Profile window.
2. Click **Add Order Display Study**.

Working and filled orders will be displayed on the market profile.

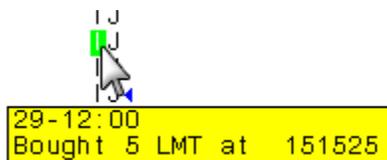
Working order icons are to the left of the price. If there is more than one working order at the same price, the most recent order will be displayed.

Filled orders are indicated by a highlighted TPO (time price opportunity) letter. Filled orders correspond to the time and closest fill price of the order. Note: The filled icon will not be visible if the corresponding TPO letter is not visible on the market profile.

You can add more than one study. When you do, the **Setup Market Profile Order Display Defaults** window is opened. On this window, you can change the parameters for the new instance of the order study. For example, you may want to add an order study for an individual account and color code it differently from the display of all accounts.

To view filled order details

Hover your mouse over the highlighted TPO letter:



If you would like to see each fill on a separate line, change the **Show Fills** parameter to **Individual**. If the **Show Fills** parameter is **Combined**, then the price is the average fill price of all order fills with the same side.

To modify study parameters

1. Right-click the **Market Profile** window or on the order study icon.
2. Click **Modify Study Parameters**. The **Chart Parameters** window opens.

Study parameters include:

- **Enable:** Select **Working**, **Filled**, or **All** to choose which orders should be displayed.
- **Show Fills:** Select **Individual** or **Combined** to choose how order details will be displayed in the order details pop up. Individual = pop up will display each fill that belongs to the selected TPO on a separate line. The maximum is ten. Combined = pop up will display aggregated information for all buy and sell orders that belong to the selected TPO.
- **Accounts:** Select **All** or **Individual** to choose which accounts should be displayed.
- **Order Filter:** Select **All** or **Manual** to choose which type of orders should be displayed.
- **Display:** Select **Buy and Sell colors for the display**.

To use the Order Display button

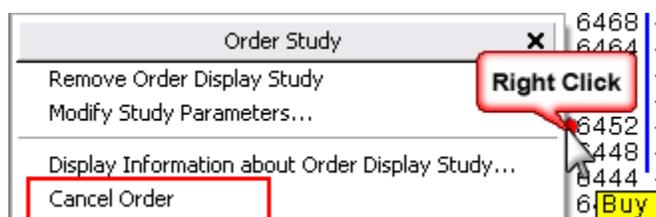
- Click the **OrderDis** button to add a study.
- Click the **OrderDis** button again to add another study.
- Click the **OrderDis** button to open the parameters window.
- Right-click the **OrderDis** button to remove a study.

If the button is not displayed:

1. Right-click the toolbar. The **Toolbar Manager** window opens.
2. Click the **Studies Add/Remove** button.
3. Click **OrderDis**.
4. Close the **Toolbar Manager**.

To cancel orders from the Market Profile

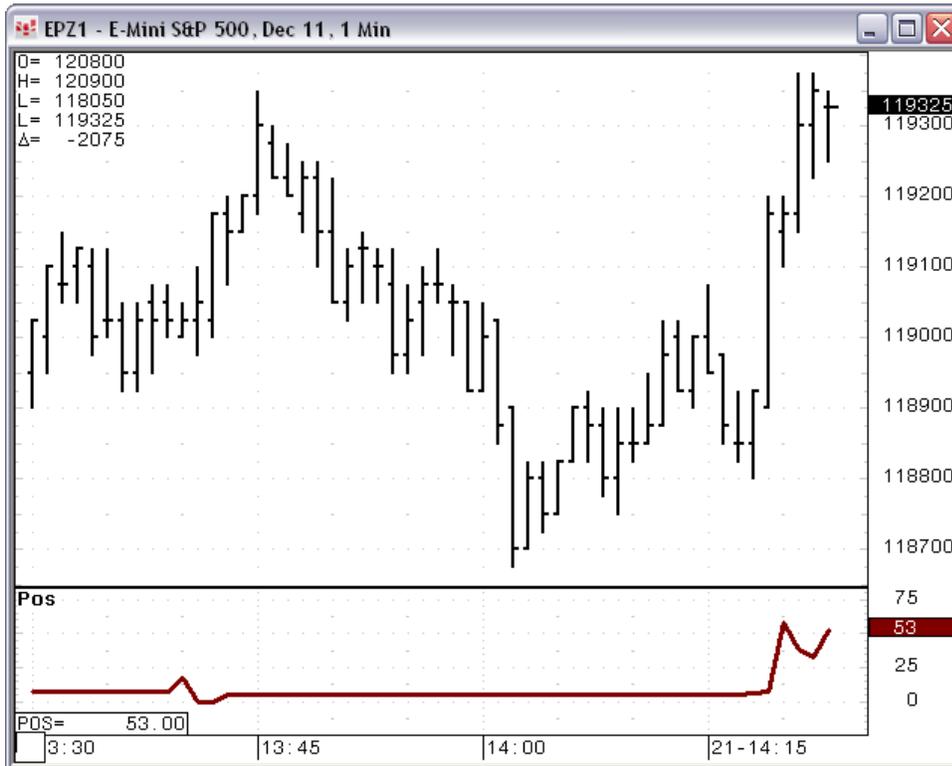
1. Right-click the **Order Study** icon.
2. Click **Cancel Order**. All orders at that price level will be cancelled. A confirmation window(s) will open if your trading preferences indicate that you want to receive order confirmation messages.
3. Click **Yes**.



Position (Pos)

The Position study is one of a several trading studies.

It has a single output representing open position. Long positions have a positive value, while short positions have a negative value.



For the current trading day, position is calculated for the bar time.

Position Parameters

- [Display](#)
- [MarkIt](#)
- **Account Filter:** Select **All Accounts**, **Selected Accounts**, or a single account.

If you choose **Selected Accounts**, then:

- if there is an account associated with the chart, either through SnapTrader or the Order Book, then that account is used.
- if there is no account associated with the chart, then no study values are returned.

Once this parameter is set, if you select a different account on the chart, then the newly selected account is automatically applied.

- **Instrument Filter:** Select **Current Instrument** or **All Instruments**.

For spreads, only **Current Instrument** is available.

Profit & Loss (P&L)

The Profit & Loss study is one of a several trading studies.

It has a single output representing profit and loss.



Currency is determined by contract and account:

- For a specific contract, the currency of the contract is used.
- For a specific account and all contracts, the reporting currency of the specified account is used. If it is not specified, USD is used.
- For all accounts and all contracts, USD is used.

For the current trading day, P&L is calculated for the bar time.

Profit & Loss Parameters

- [Display](#)
- [MarkIt](#)
- **Account Filter:** Select **All Accounts**, **Selected Accounts**, or a single account.
If you choose **Selected Accounts**, then:
 - if there is an account associated with the chart, either through SnapTrader or the Order Book, then that account is used.
 - if there is no account associated with the chart, then no study values are returned.Once this parameter is set, if you select a different account on the chart, then the newly selected account is automatically applied.
- **Instrument Filter:** Select **Current Instrument** or **All Instruments**.
For spreads, only **Current Instrument** is available.

Working with Pointer Tools and Studies

There are two ways to add studies to charts:

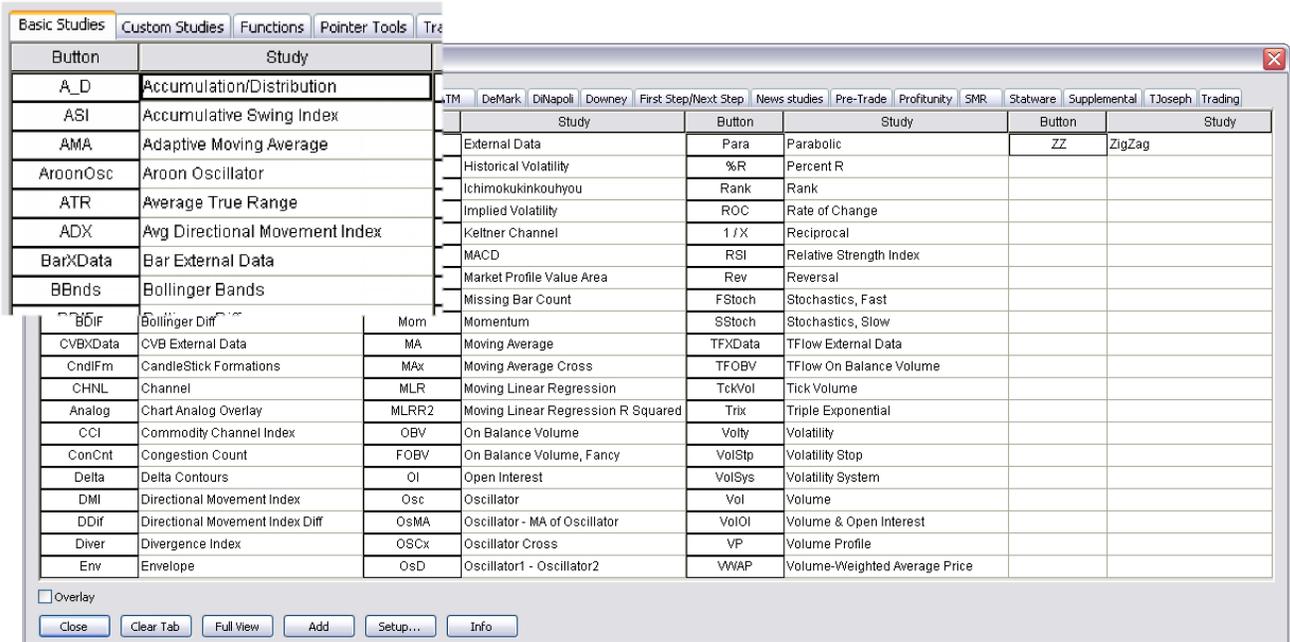
- Click a study button that you have added to the chart toolbar.
- Right-click the chart and click **Add Study**.

CQG offers a variety of [pointer tools](#) designed to highlight particular chart data to enhance analysis.

Adding Study Buttons to the Chart Toolbar

You can add a study to a chart by clicking the study button on the chart toolbar. If the study button is not included on the toolbar, you can add it using the **Add Study** window.

To open this window, click the **Studies** button on the chart toolbar.

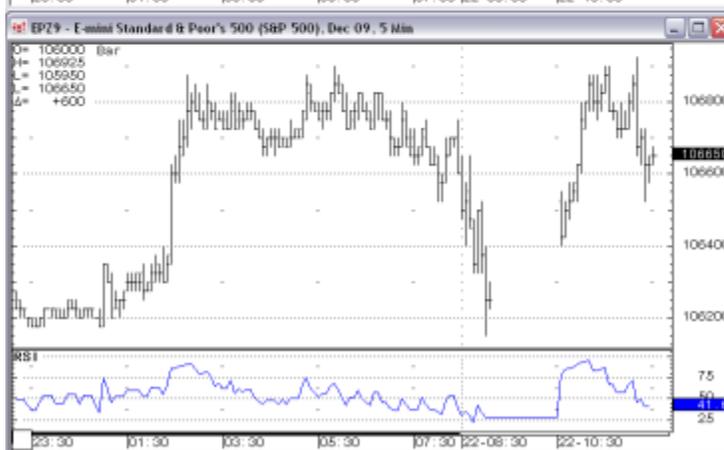


The window opens in tab view. Each tab corresponds to a particular study category. Click the **Full View** button to see all studies in one list.

To add study buttons to the chart toolbar

1. Click the **Studies** button.
2. Click the tab for the study category you want.
3. Click the study button, for example, RSI. The button turns gray when it is selected and is added to the chart toolbar.
4. When the study is added to the chart, it can be added as an overlay or as its own display at the bottom of the chart. To add the study as an overlay (applied to the underlying bar chart), select **Overlay** at the bottom left corner of the window.

RSI as overlay



RSI as its own display

5. When you are finished adding studies, click **Close**.

Once the button is added to the chart toolbar, click it to add the study to the chart.

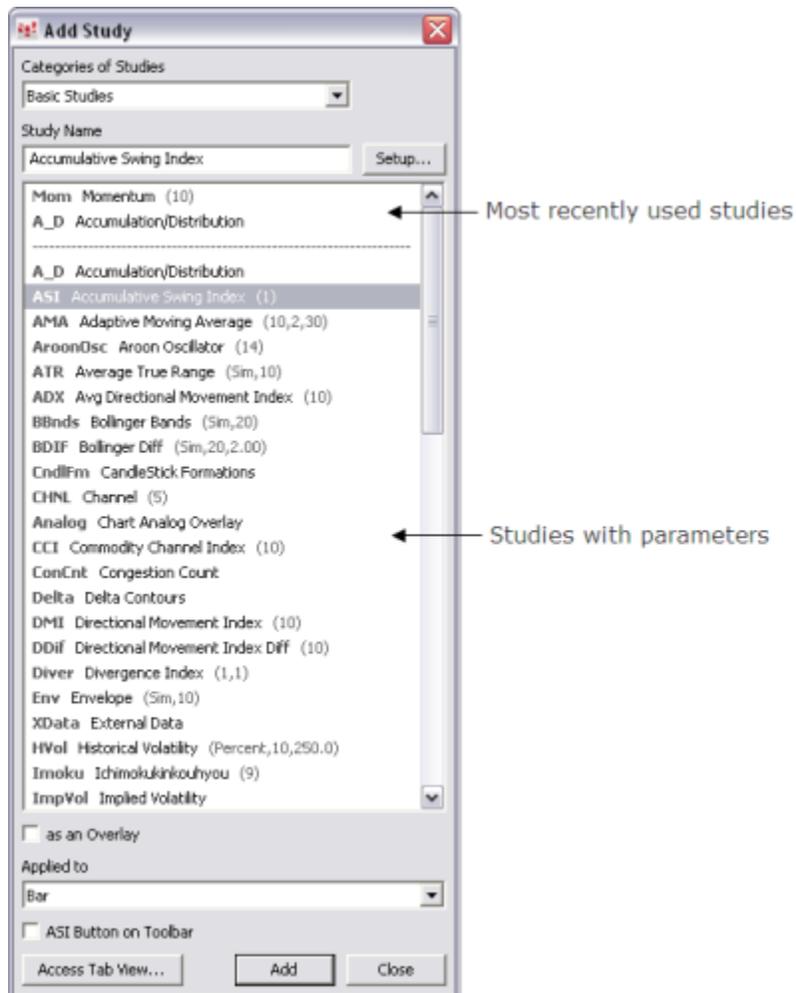
To clear study buttons from the chart toolbar

1. Click the **Studies** button.
2. Go to the tab for the buttons you wish to remove.
3. Click the **Clear Tab** button.

To remove a single button, click the study button, for example, RSI.

Adding, Managing, and Removing Studies on Charts

You can add a study to a chart by right-clicking the chart and then clicking **Add Study** to open the **Add Study** window. You can also right-click the **Studies** button.



This resizable window displays study names with abbreviations, which are included in the search. Parameters are displayed in parentheses.

If the cursor is in the **Study Name** field, use down arrow to move down through list.

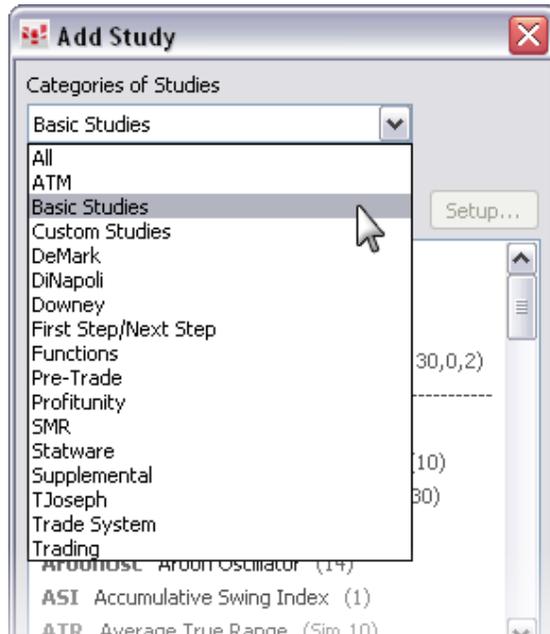
Pointer tools and chart types are not included in this window.

You can also:

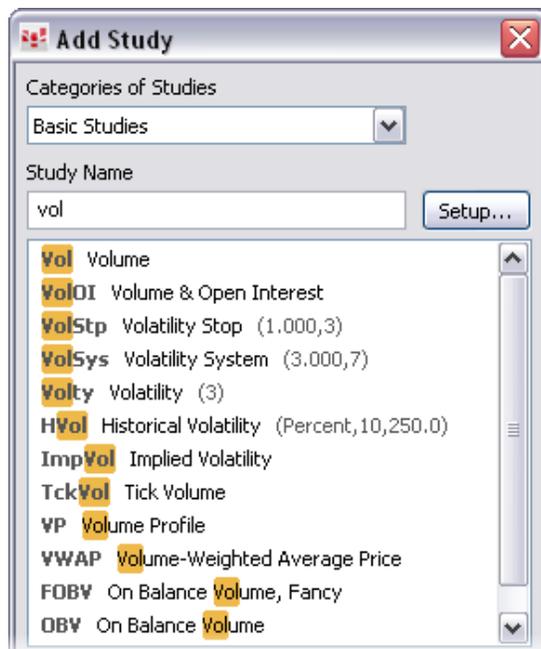
- Set study parameters: click the **Setup** button.
- Add a study button to a chart: select the **Button on Toolbar** box.
- Open the **Add Study** [to toolbar] window: click the **Access Tab View** button.

To add a study to a chart

1. Right-click the chart.
2. Click **Add Study**.
3. To filter the list of studies, use the **Categories of Studies** menu. This menu filters studies according to category, such as Basic Studies and Downey.



4. Type the name or abbreviation of the study in the **Study Name** field. As you start typing, the system displays the studies that match your entry.



5. To select the first study on the list and close the window, press **ENTER**. To select another study on the list and close the window, double-click the study. To select a study, click it.
6. Select the **as an Overlay** checkbox if you want the study to be overlaid on the chart.
7. If you would like the study to apply other than to the bar, use the **Applied to** menu to select another option.
8. Click **Add**.

To modify a study

1. Right-click the study displayed on the chart.
2. Click **Modify <study name>**.
3. Make desired change to the parameters.
4. Click **OK**.

You can also click the chart and select **Modify All Study Parameters**. In that case, all studies applied to that chart are listed in the parameters window.

This option applies to custom studies also.

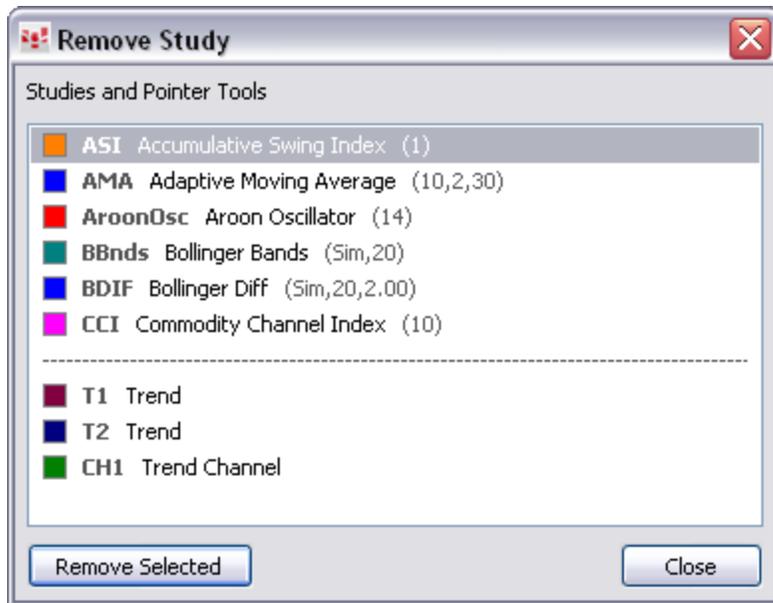
To remove a study from a chart

To remove an individual study

1. Right-click the study bar.
2. Click **Remove <study name>**.

To remove more than one study

The resizable **Remove Study** window lists the studies and pointer tools on the chart with the main display color and the associated parameters in parentheses.



There are several ways to remove studies using this window. Select one or several studies, then:

- Press the **Delete** key on your keyboard;
- Click the **Remove Selected** button; or
- Double-click.

Once all studies have been removed, the window closes automatically.

To select all studies, press **Ctrl+A**. To select some studies, hold down the **Ctrl** key while you select them.

Displaying Study Values on the DOM

Instead of having to move from your trading interface to a Chart to see the latest values associated with one your studies, you can place these values directly on the DOM on both the DOMTrader and Order Ticket.

You begin with a chart to which you have added a study. From the chart, you select to display the study values on the trading interfaces, both the DOMTrader and the Order Ticket.

Only studies that can be placed as an overlay on a chart can be linked to the DOM. The Chart Analog Overlay (Analog) is an exception; it cannot be displayed.

Your study values will be maintained on the DOM even if you:

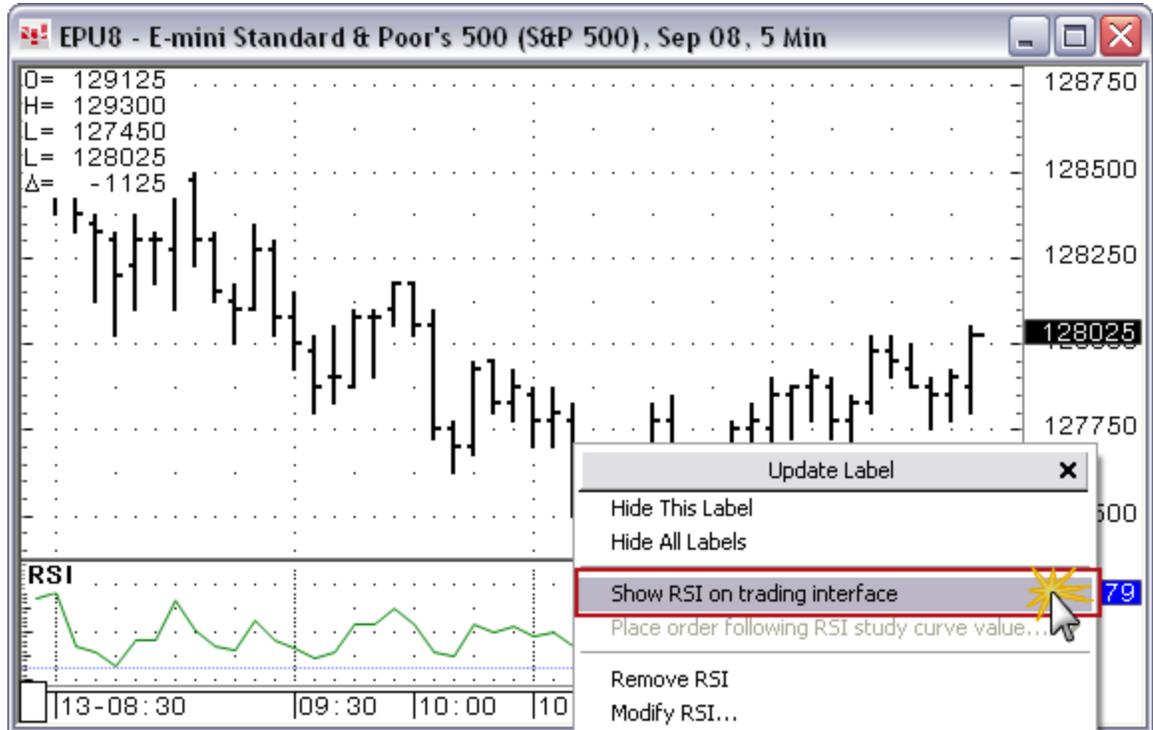
- create a new tab with this symbol,
- open a new DOM with this symbol;
- change the symbol on the chart;
- change the study or its parameters.
- change or restore the page;
- upgrade; or
- log off.

You can add up to twenty additional studies.

The study values will be removed if you chose to remove them or if the symbol expires.

To add study values

1. Open a chart and add a study.
2. Right-click the price label associated with study, and click **Show [study name] on trading interface**.

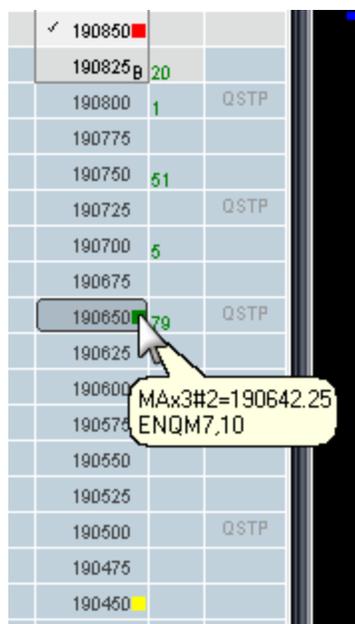


The DOM will display squares, in the same colors as the study lines, on the price row that corresponds to the study curve price value, like this:



When you hover the mouse over the study value square, the study value box hint pops up. It includes: the study name, the price, the symbol, and the chart's time variable (in this case, 5-minute).

When you have multiple studies of the same type displayed, the details will also include the instance of this study on the DOM.



The instance refers to the lines that make up the study on the chart. In the example above, the top/red line is 1, the green/middle line is 2, and the yellow/bottom line is 3.

If all of the study values are at the same price, the study value square will alternate color every second.

To select your rounding preference

If the study value is not aligned to the tick size (applies to compressed data also), then it is rounded.

1. Right-click the study icon (square) on the DOM.
2. Select **[Study] value rounding**, and then select the method. You have three choices:
 - **Use standard rounding method** (default): If study curve value is not aligned to the visible tick size, then it shall be rounded to the closest visible row according to standard mathematical rules.
 - **Round toward the current price**: If study curve value is not aligned to the visible tick size, then it shall be rounded to the closest visible row located to the market direction.
 - **Round away from the current price**: If study curve value is not aligned to the visible tick size, then it shall be rounded to the closest visible row located out of the market direction.

To remove study values

Right-click the study icon (square) and then select your removal choice:

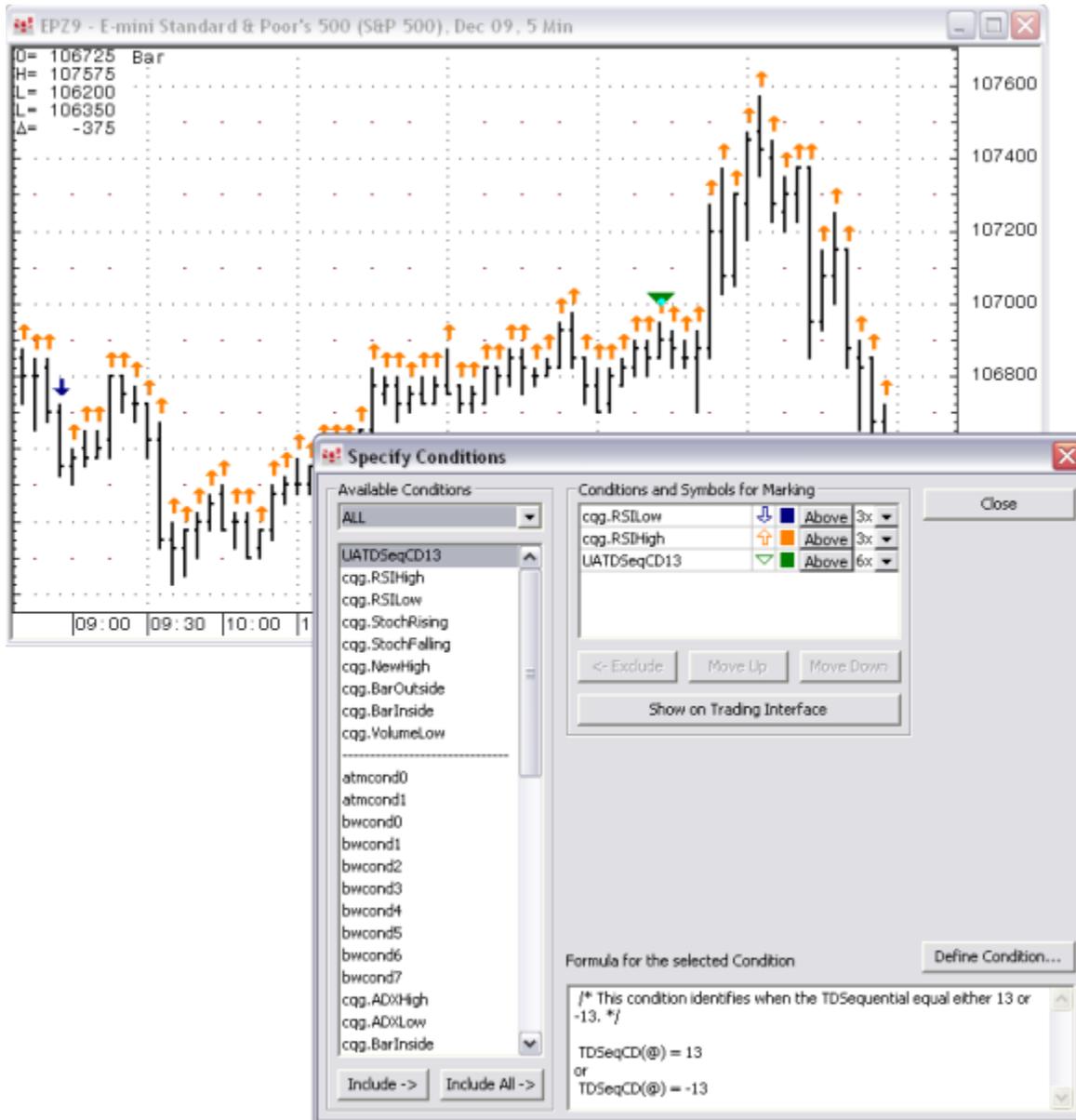
- Remove the study from this individual trading interface.
- Remove the study from all trading interfaces.
- Remove all studies from all interfaces for a particular symbol.

Working with Conditions on Charts

You can set up charts to indicate when certain specified conditions have been met and set alerts based on those conditions.

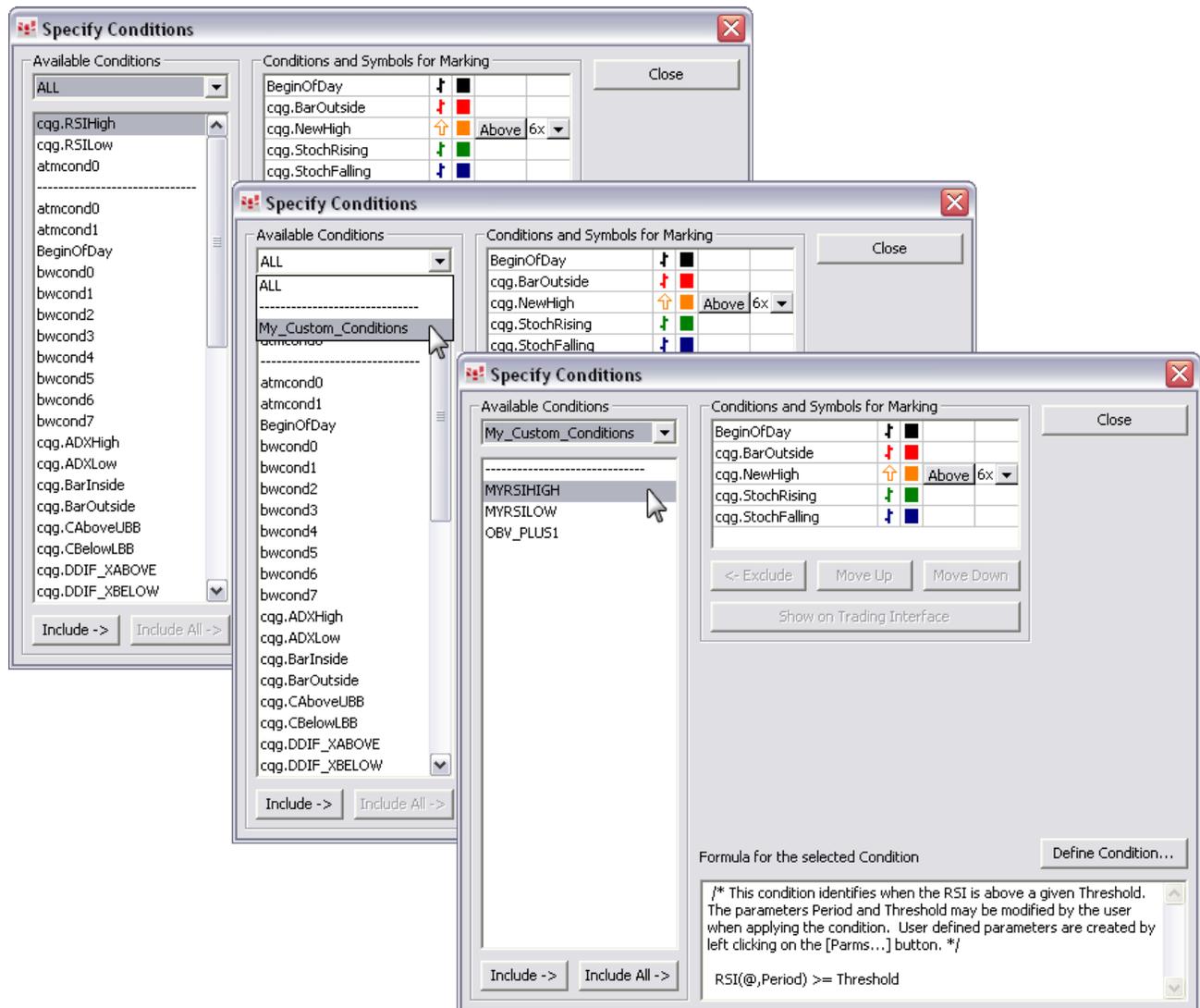
Adding Conditions to a Chart

Conditions can be applied to a chart, so that if the condition is true for a particular bar, the condition symbol is displayed at that bar.



To add conditions

1. Right-click the **Chart**.
2. Click **Modify All Study Parameters**.
3. Click the **MarkIt** field to open the **Specify Conditions** window.
4. Select the folder that contains the condition you want to apply.
5. Click that condition in the list.
6. Click the **Include** button. The condition will be listed in the list on the top center of the window. It's color and symbol will also be displayed. If you have selected a custom folder, the **Include All** button is active.
7. You can change the color of any condition. Some conditions have additional settings. See **cqg.NewHigh** in the image. Make any changes you want to these settings.
8. Click **Close**.



To create a custom condition to apply to the chart

1. Click the **Formula** button.
2. Go to the **Conditions** tab.
3. Click the **New** button.
4. Type a name for the condition.
5. Click the **OK** button.
6. Create the condition. The toolbox can help you.
7. Click the **Close**.

To remove a condition from a chart

1. Right-click the condition symbol.

2. Click **Remove <condition>**.

To modify a condition on a chart

1. Right-click the condition symbol.
2. Click **Modify <condition> Formula** to open the **Define User Formulas** window.
3. Make the necessary changes
4. Click **Close**.

To change the display of a condition on a chart

You can change the color and symbol of a condition.

To change the color:

1. Right-click the condition symbol.
2. Click **Set <condition> Color**.
3. Click the color.

To change the symbol:

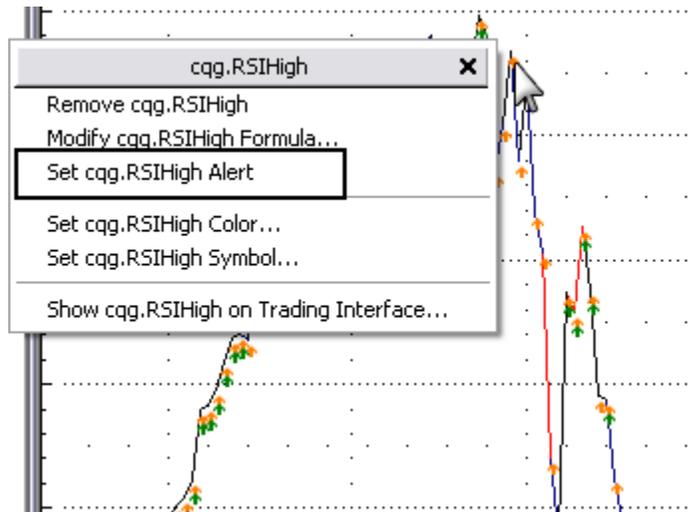
1. Right-click the condition symbol.
2. Click **Set <condition> Symbol**.
3. Click the symbol.

To add a condition to a trading application

1. Right-click the condition symbol.
2. Click **Show <condition> on Trading Interface**.

To set an alert from a condition

1. Once the condition results are indicated on the chart, right-click the condition symbol.
2. Click **Set <condition> Alert**.



The **Condition Alerts** window opens automatically populated with the information from the chart. If you do not wish to make changes or monitor the window, you can close it.

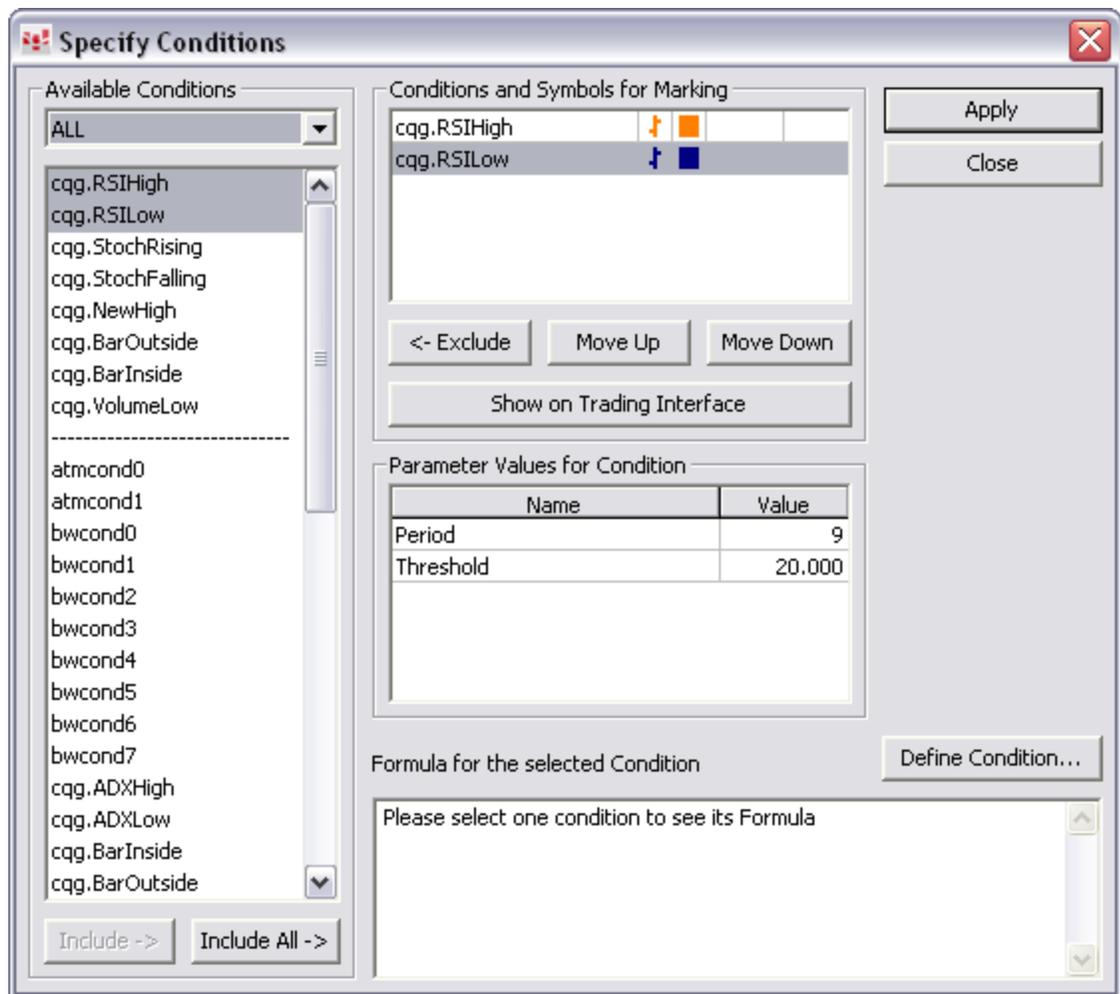
Adding Conditions to a Study

1. Open a chart and add a study.
2. Right-click a study bar and click **Select Conditions for Marking [Study]**.



Note that this option is only active on primary curves (on BMA, but not BHI or BLO).

3. On the Specify Conditions window, click the condition you want to apply to the study in the **Available Conditions** list. You can select multiple conditions. You can also select a folder of conditions using the **Available Conditions** menu.



4. Click **Include**. To add every condition to the chart (usually used with specific folders), click **Include All**.
5. In the **Conditions and Symbols for Marking** area, make changes to the marking parameters, such as color.
6. In the **Parameter Values for Condition** area, make changes to the condition parameters.
7. To display the condition on the DOMTrader, click the **Show on Trading Interface** button.
8. Click the **Define Condition** button to open the **Define User Formulas** window.
9. When you are finished, click **Close**.

Instrument and Portfolio Monitors



BETA

The Instrument Monitor tracks a single instrument across multiple timeframes and chart types with multiple studies and indicators in a spreadsheet view.

The Portfolio Monitor tracks multiple instruments across markets in one window. Monitor up to two hundred instruments across five time frames with twenty indicators. You can also trade on the Portfolio Monitor.

The monitors can be used to emphasize the values of indicators used to make trading decisions.

They are especially helpful with asset classes, such as equities, that require you to look at a wide range of instruments to expose opportunities.

The monitors require an enablement.

Opening the Instrument Monitor

Using the Monitor button

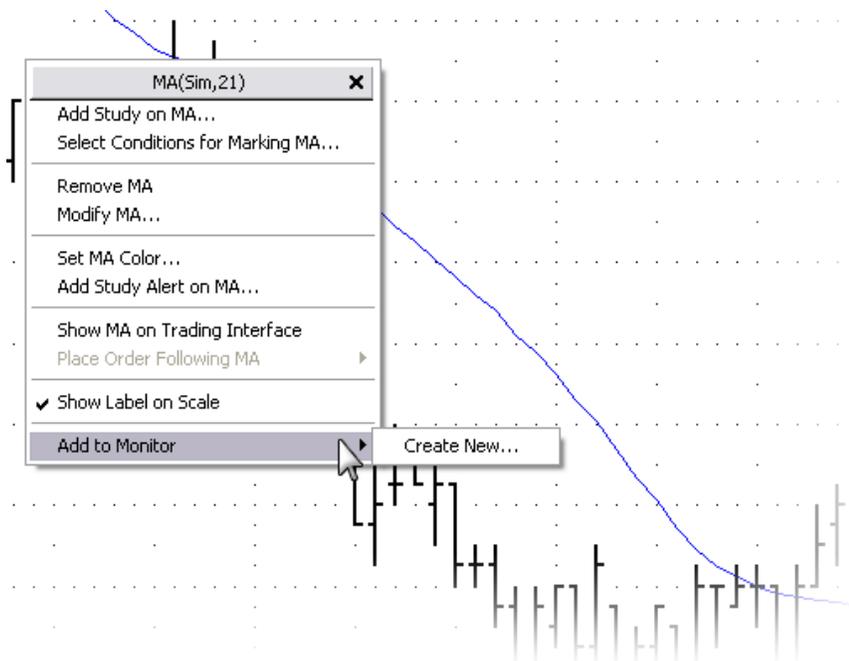
Click the **Monitor** button, and then click **Instrument Monitor**.

You can also right-click the **Monitor** button, point to **Add Monitor**, and then click **Instrument Monitor**.

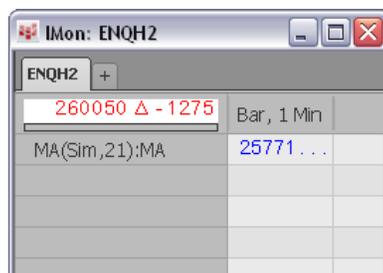
If the **Monitor** button is not displayed, then click the **More** button, and then click **Monitor**.

From a chart

1. Right-click the chart.
2. Point to **Convert to Monitor**. There must be a study applied to the chart for this option to be active.
3. Click **Create New**. If you already have a monitor open, then you have option to add a new one or add a contract to the existing monitor.



The 1-minute bar chart in the image includes the moving average study. The monitor reflects this chart type and interval as well as this active study.



Opening the Portfolio Monitor

Using the Monitor button

Click the **Monitor** button, and then click **Portfolio Monitor**.

You can also right-click the **Monitor** button, point to **Add Monitor**, and then click **Portfolio Monitor**.

If the **Monitor** button is not displayed, then click the **More** button, and then click **Monitor**.

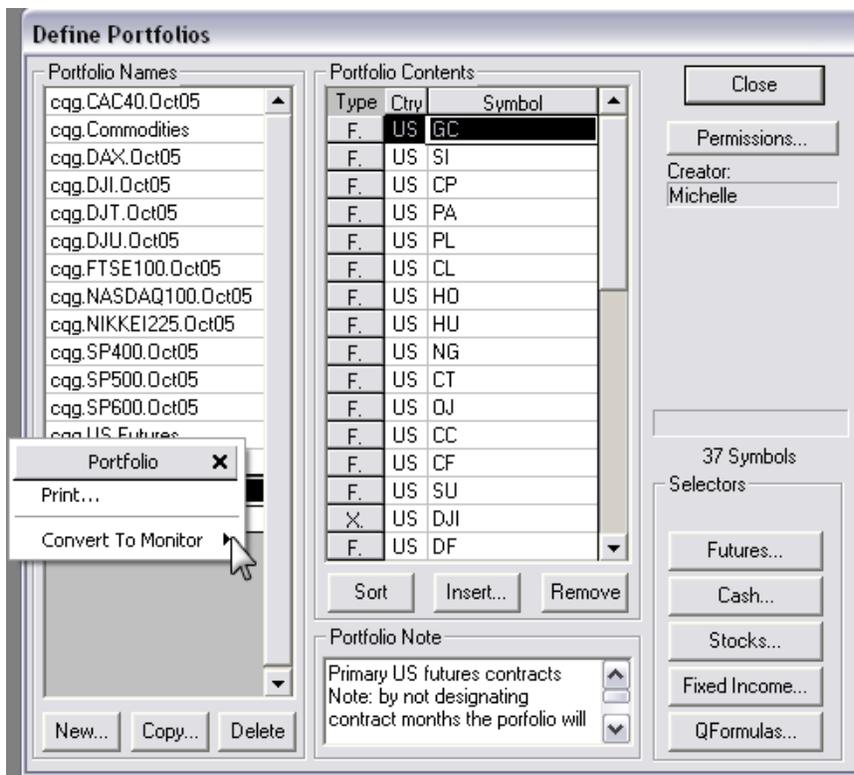
Using the Trade button

Click the **Trade** button, and then click **Spreadsheet Trader**.

The Portfolio Monitor opens and is prepopulated with trading columns.

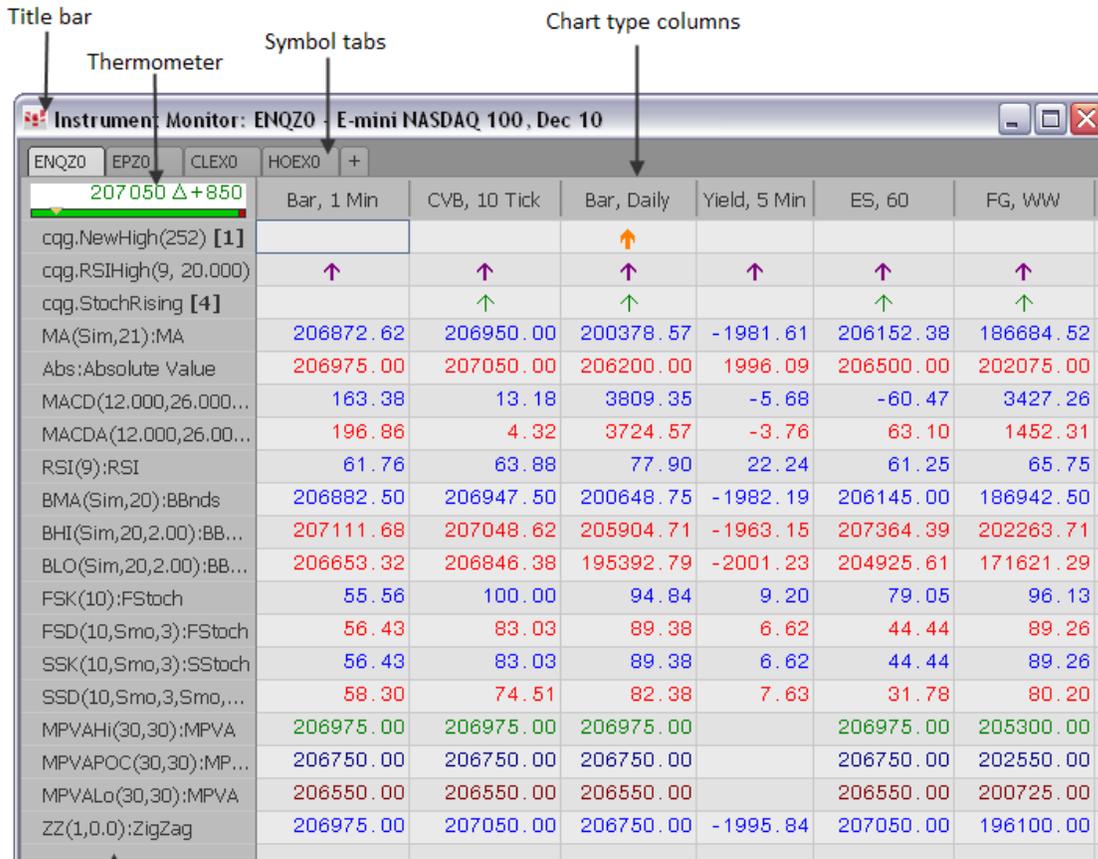
From Define Portfolios window

Right-click either a portfolio or a symbol on the Define Portfolios window.



Instrument Monitor Components

The Instrument Monitor list conditions and studies in the left panel and plots chart values in columns.



Lists of studies and conditions

Title bar



The Instrument Monitor title bar includes contract information. Instrument Monitor is abbreviated as IMon when the window is narrow.

Right-click the title bar to:

- Rename the window.
- Show or hide tabs.
- Size the window to fit the columns and rows.

Thermometer



The thermometer, similar to the thermometer on the DOMTrader tabs, indicates the current market standing of the symbol relative to its opening, high, and low prices. It shows the High to Last (Red), Low to Last (green), and Open (yellow triangle) for the current day. The close or last price is indicated by the change of color from red to green. If the thermometer displays all yellow, then data is not available. The last price and net change are displayed above the thermometer.

Study and condition list

The left panel of the monitor lists the studies and conditions that are being calculated for the different chart types. It includes the current parameter settings for each study. The numbers in brackets indicate how many of the chart types meet this condition. The tooltip lists the types.

cqg.NewHigh(252) [1]	cqg.StochRising [4]
cqg.RSIHigh(9, 20.000) [6]	MA(Sim,21):Moving Average
cqg.StochRising [3]	Abs:Absolute Value
MA(Sim,21):Moving Average	MACD(12.000,26.000):MACD
Abs:Absolute Value	MACDA(12.000,26.000,9.000):MACD
MACD(12.000,26.000):MACD	RSI(9):Relative Strength Index
MACDA(12.000,26.000,9.000):MACD	BMA(Sim,20):Bollinger Bands
RSI(9):Relative Strength Index	BHI(Sim,20,2.00):Bollinger Bands
BMA(Sim,20):Bollinger Bands	BLO(Sim,20,2.00):Bollinger Bands
BHI(Sim,20,2.00):Bollinger Bands	FSK(10):Stochastics, Fast
BLO(Sim,20,2.00):Bollinger Bands	FSD(10,Smo,3):Stochastics, Fast
FSK(10):Stochastics, Fast	SSK(10,Smo,3):Stochastics, Slow
FSD(10,Smo,3):Stochastics, Fast	SSD(10,Smo,3,Smo,3):Stochastics, Slow
SSK(10,Smo,3):Stochastics, Slow	MPVAHI(30,30):Market Profile Value Area
SSD(10,Smo,3,Smo,3):Stochastics, Slow	MPVAPOC(30,30):Market Profile Value Area
MPVAHI(30,30):Market Profile Value Area	MPVALo(30,30):Market Profile Value Area
MPVAPOC(30,30):Market Profile Value Area	ZZ(1,0.0):ZigZag
MPVALo(30,30):Market Profile Value Area	
ZZ(1,0.0):ZigZag	

Chart types

The right panel of the monitor displays a column for each chart type. The chart interval is included in the column heading.

The colors are determined by study and condition parameters. In this image, orange arrows, yellow circles, and green arrows indicate that particular conditions have been met.

The red triangle in the corner of some cells indicates that the parameters of this cell differ from the parameters of the study on the chart, i.e. they have been changed on the monitor. Empty study cells indicate that data is being updated.

Bar, 1 Min	CVB, 10 Tick	ES, 60	Bar, Daily	Yield, 5 Min	FG, WW
			▲		
●	●	●	●	●	●
		↑	↑	↑	↑
207046.43	207082.14	206152.38	200378.57	-1986.79	186684.52
207050.00	207050.00	206500.00	206200.00	1997.87	202075.00
63.70	8.52	-60.47	3809.35	-6.08	3427.26
85.72	14.83	63.10	3724.57	-5.13	1452.31
52.94	41.73	61.25	77.90	23.64	65.75
207048.75	207082.50	206145.00	200648.75	-1987.48	186942.50
207137.46	207151.60	207364.39	205904.71	-1968.53	202263.71
206960.04	207013.40	204925.61	195392.79	-2006.42	171621.29
20.00	0.00	79.05	94.84	10.53	96.13
31.32	40.69	44.44	89.38	6.22	89.26
31.32	27.62	44.44	89.38	6.22	89.26
42.15	46.22	31.78	82.38	5.86	80.20
207150.00	207150.00	207150.00	207150.00		205300.00
206925.00	206925.00	206925.00	206925.00		202550.00
206725.00	206725.00	206725.00	206725.00		200725.00
207025.00	207050.00	207050.00	206750.00	-1997.87	196100.00

Portfolio Monitor Components

The Portfolio Monitor lists instruments in the left panel and plots chart values with studies and conditions applied in columns. An optional watch list is also displayed.

The screenshot shows the Portfolio Monitor window with the following components labeled:

- Title bar:** Portfolio Monitor: ENQZO, EPZO, EDAZ1...
- Price and net change:** Price and PriceNC columns.
- Watch list:** Watch List Selection panel on the right.
- List of symbols:** The first column of the data table.
- Chart columns grouped by study/condition:** The columns for MA, cqq.RSIHigh, RSI(9):RSI, and Mom(10):Momentum.

Symbol	Price	PriceNC	MA(Sim,21):MA		cqq.RSIHigh(252, 20.000)		RSI(9):RSI		Mom(10):Momentum	
			Bar, 5 Min	CVB, 10 Tick	Bar, 5 [13]	CVB, 10 Tick [12]	Bar, 5	CVB, 10 Tick	Bar, 5	CVB, 10 Tick
ENQZO	208350	+2150	208182.14	208289.29			64.16	76.08	425.00	50.00
EPZO	116950	-400	117016.67	116951.19			52.72	93.21	175.00	25.00
EDAZ1	99405	+10	99403.10	99400.00			44.64	54.24	0.00	0.00
LCZO	10012	+185	10000.71	9954.40			55.02	60.62	2.50	15.00
CLEX0	8131	-138	8124.71	8127.71			48.10	70.71	9.00	4.00
HOEX0	22322	-517	22315.81	22317.14			46.37	43.24	44.00	4.00
NGEX0	3530	-127	3543.43	3532.00			38.16	41.33	-25.00	-2.00
RBEX0	21035	-330	21046.52	21046.95			43.93	38.71	3.00	-12.00
CZO	5630	-42	5663.71	5656.95			24.55	30.70	-40.00	-70.00
GCZO	13720	-56	13715.29	13714.76			53.85	43.39	5.00	-2.00
BOZO	4777	-25	4785.24	4744.14			34.90	55.32	-13.00	12.00
WZO	7044	+36	7026.86	6962.67			53.65	59.87	26.00	-44.00
LCZO	10012	+185	10000.71	9954.40			55.02	60.62	2.50	15.00

The Watch List Selection panel shows: RSI(9):RSI - Bar, 5 [1.00 - 50.00] [7]

Look for tooltips to identify the contents of each cell.

43.46	29.52	-75.00	-25.00
57.23	97.92	0.00	5.00
55.02	60.62	2.50	15.00
53.78	45.6	11.00	0.00
51.24	43.2		
39.35	54.2		

Tooltip for LCZO CVB, 10 Tick RSI(9):RSI 60.62

The Portfolio Monitor also has a set of trading columns that can be added to the display. See [Trading on a Portfolio Monitor](#).

Title bar



The monitor title bar lists the trading account (if monitor used for trading) and the first few symbols in the portfolio.

Right-click the title bar to:

- Rename the window.
- Select an account.
- Open a new tab.
- Show or hide tabs.
- Size the window to fit the columns and rows.

Price and net change columns

The first two columns of the Portfolio Monitor show last price and net change for the symbol.

Price	PriceNC
208075	+1875
116850	-500
99405	+10
10012	+185
8129	-140
22318	-521
3530	-127
21042	-323
5630	-42
13720	-56
4777	-25
7044	+36
10012	+185

Symbols list

The left panel of the monitor lists the symbols in the portfolio.

Symbol
ENQZ0
EPZ0
EDAZ1
LCZ0
CLEX0
HOEX0
NGEX0
RBEX0
CZ0
GCZ0

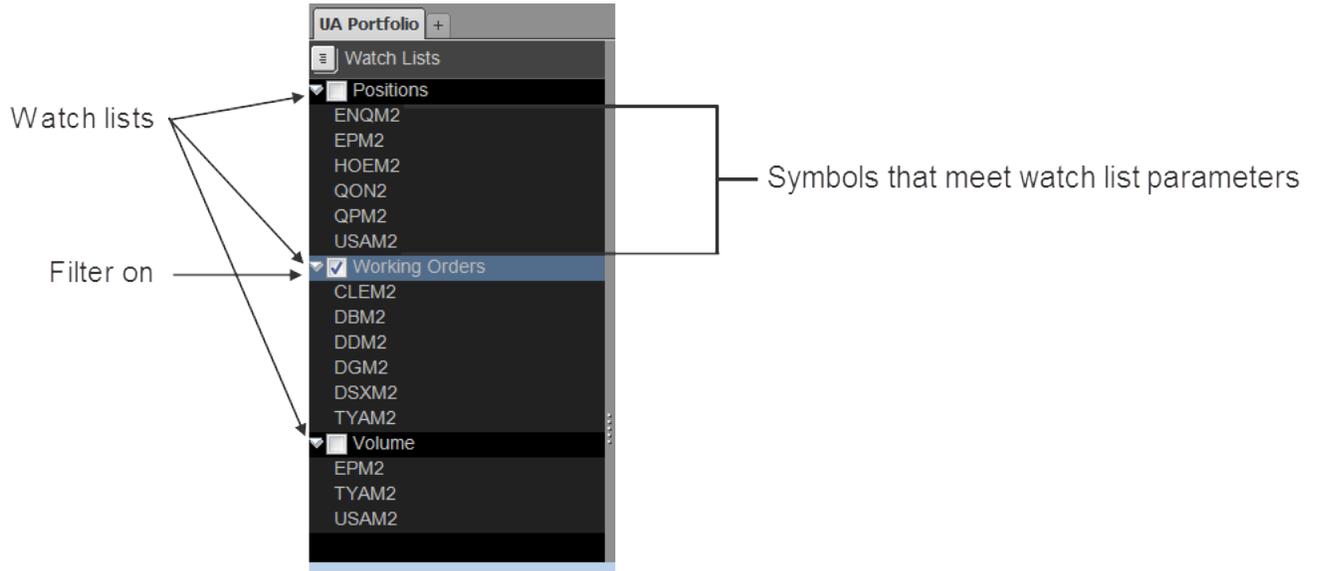
Chart type and study columns

The right panel of the monitor displays chart types with associated studies and conditions in columns. You can group these columns either by chart or by study.

cqq.RSIHigh(252, 20.000)		RSI(9):RSI		MA(Sim,21):MA		Mom(10):Momentum	
Bar, 5 [13]	CVB, 10 Tick [12]	Bar, 5	CVB, 10 Tick	Bar, 5 Min	CVB, 10 Tick	Bar, 5	CVB, 10 Tick
▲	▲	46.56	77.96	208211.90	208285.71	50.00	75.00
▲	▲	42.46	20.37	117004.76	116970.24	-50.00	-25.00
▲	▲	45.57	47.22	99401.90	99400.24	-5.00	0.00
▲	▲	55.02	60.62	10000.71	9954.40	2.50	15.00
▲	▲	52.70	42.33	8122.90	8129.10	18.00	-1.00
▲	▲	47.83	48.71	22307.38	22315.95	32.00	9.00
▲	▲	38.52	61.22	3539.33	3529.43	-7.00	5.00
▲	▲	44.38	39.81	21033.67	21022.86	23.00	-17.00
▲	▲	24.55	30.70	5663.71	5656.95	-40.00	-70.00
▲	▲	53.85	43.39	13715.29	13714.76	5.00	-2.00
▲	▲	34.90	55.32	4785.24	4744.14	-13.00	12.00
▲	▲	53.65	59.87	7026.86	6962.67	26.00	-44.00
▲	▲	55.02	60.62	10000.71	9954.40	2.50	15.00

Watch List

The watch list provides a way to filter column values based on study and condition values. Additionally, on Spreadsheet Trader, you can create watch lists to filter symbols, so that only symbols with working orders or open positions are displayed; you can display only those symbols that have volumes that fall within a particular range.



See also: [“Creating a Watch List on Portfolio Monitor and Spreadsheet Trader”](#) on page 429.

Instrument and Portfolio Monitor Toolbars

The Instrument Monitor toolbar includes the **Study** button as well as study and function buttons that you add.

The Portfolio Monitor toolbar includes three additional buttons: **WatchList**, **Params**, and **Portfolio**.

When the Portfolio Monitor is in trading mode (i.e. when there are trading columns on the Portfolio Monitor), the toolbar also includes **Logon**, **Logoff**, **Center**, **Fill Report**, **OrdPos**, and **X Global** buttons.

WatchList button

When selected, the [Watch List](#) is displayed on the right of the Portfolio Monitor.

Params button

Opens the Portfolio Monitor Visual Parameters window.

Portfolio button

Opens the Define Portfolios window.

This button opens the Order Routing Logon window.

Logoff

This button disconnects you from order routing.

Center

This button returns the Portfolio Monitor to the current bid/ask.

Fill Report

This button opens a fill report.

OrdPos

This button opens the Orders and Positions window.

X Global

Click this button to cancel all working orders.

Right-click this button to open a window that allows you to select the account, side, and symbol to cancel.

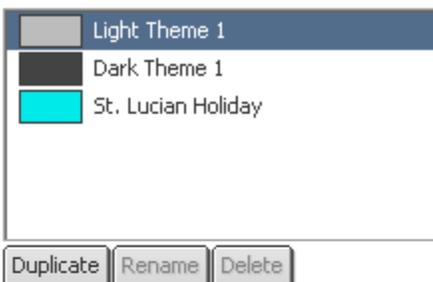
Setting Instrument and Portfolio Monitor Display Preferences

These settings allow you to alter the monitor display, such as by changing colors, adjusting font size, or using trade data. Both monitors have the same preference options.

To open preferences, click the **Setup** button and then **Monitor preferences** or right-click the monitor and click **Preferences**.

Select a color theme

Select a color theme



Select one of the two color schemes, or create your own. You can see what each theme looks like by selecting it and referring to the preview grid.

To create your own:

1. Click **Duplicate**. The new theme starts with the colors from either the light or dark theme.
2. Type a name for the theme.
3. Change the colors for any of the elements listed below the theme by clicking the colored square. Click **More Colors** to select custom colors.

Price values

Price Values

- Quote
 Trade

Choose whether to use quote or trade data in price calculation.

Price coloring

Price coloring

- Use Price Coloring

You can highlight the price or not:



Studies titles

Studies Titles

- Study Parameters

You can list studies either with or without parameters:

MACD(12.000,26.000):MACD	MACD:MACD
MACDA(12.000,26.000,9.000):MACD	MACDA:MACD
RSI(9):Relative Strength Index	RSI:Relative Strength Index
BMA(Sim,20):Bollinger Bands	BMA:Bollinger Bands
BHI(Sim,20,2.00):Bollinger Bands	BHI:Bollinger Bands
BLO(Sim,20,2.00):Bollinger Bands	BLO:Bollinger Bands
FSK(10):Stochastics, Fast	FSK:Stochastics, Fast
FSD(10,Smo,3):Stochastics, Fast	FSD:Stochastics, Fast

Font size

User interface font size

- Extra small
- Small
- Medium
- Large
- Extra large
- Wallboard

Click the button for your preferred font size.

Apply changes

Apply changes in this dialog to:

- This tab only
- All tabs in this monitor window
- All monitor windows on this page
- All monitor windows on all pages
- All new Monitors

The changes you make to preferences can be applied as extensively as possible – to all existing and future windows – or as limitedly as possible – to a single tabbed window.

Select button style

Select preferences for ALL monitor windows

Button Style

- Button Style 1
- Button Style 2
- Button Style 3

Click the button for your preferred button style. This setting is applied to all trading interfaces, including DOMTrader, Order Ticket, and Orders and Positions.

Setting Trading Display Preferences

These preferences allow you to change the display of Portfolio Monitor trading features.

Notifications, Risk, Limits and Stops, and Smart Order Preferences are the same for all trading applications, as are the trading display preferences that apply to trading entry displays. This includes the **Group strategy positions by filled spread orders** setting (Strategy Order preferences).

Allow different trading accounts for each tab

Allow different trading accounts for each tab

Select this button to be able to select a different account on each tab. This preference is on by default.

Available columns and data

Available columns and data

Show high and low for

Day

Current Session

Highlight average fill price

Choose whether to display the high and low prices on the bid and ask columns and, if so, whether they should be based on the day or current session. This preference is on and set to **Day** by default.

Also choose whether to highlight the average fill price. This preference is on by default.

Order placement methods (Portfolio Monitor)

Order placement methods

Certain methods may be disabled by your FCM

- Enable fast-click mode
 - Enable middle click to place order using second default order size
- Enable sweep mode

Select the special order placement methods you would like to use.

Enable fast-click mode allows you to place orders by clicking the buttons in the Buy and Sell columns. Those buttons are visible only if this preference is selected. This enablement is determined by your FCM. Please contact your FCM for more information.

Enable middle-click allows you to place an order at the second default size by clicking your middle mouse button.

Enable sweep mode allows you to enter sweep orders.

Setting Portfolio Monitor Visual Parameters

These parameters enhance the data displayed in columns and rows on the Portfolio Monitor. You can change basic formatting, such as colors, font, and alignment; create conditions for marking cells; add a histogram to cells; and compare cells using a heatmap.

Parameters can be applied to:

- symbol rows;
- study and condition columns when columns are grouped by chart type (when chart type is the master heading and studies and conditions are subheadings);
- chart columns when the column are grouped by studies and conditions (when studies and conditions are the master heading and chart types are subheadings);
- Price and Price NC columns.

When a cell meets several parameters:

- Conditional Coloring has the highest priority, followed by Heatmap, Histogram, Basic Formatting, and preferences, which have the least priority.
- Column formatting has priority over row formatting.

When you copy the monitor to Excel, the cells retain their formatting, with the exception of the histogram.

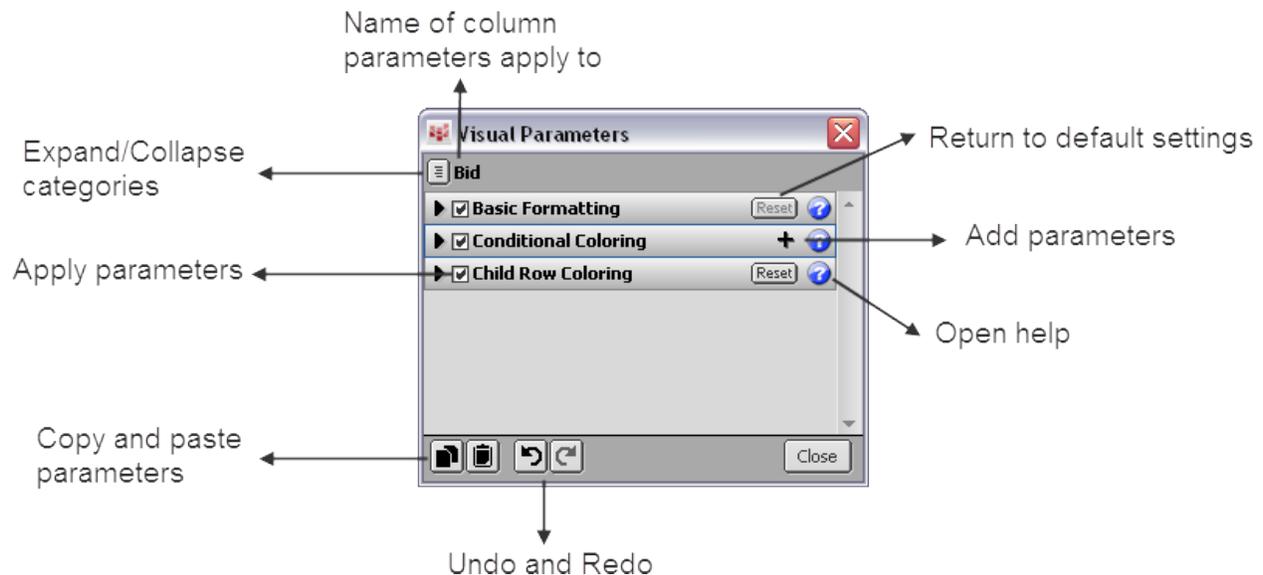
Parameters are reset when you close the Portfolio Monitor window. Parameters are saved when you close CQG IC, when you import and export pages, and when you replicate the monitor.

Open the Visual Parameters window in one of three ways:

- Click a column or row heading, and then click the **Params** button. Please note that this button is active only when a row or column is selected.
- Press **CTRL+SHIFT+V**.
- Right-click a column or row heading, and then click **Modify Visual Parameters**.

Working with the Visual Parameters window

Several actions you can take on this window are common to more than one category. This image is taken from a Bid column example. Other data columns also have Histogram and Heatmap parameters.



- To expand and collapse categories, click the button to the left of the column heading. (In the image above, all categories are collapsed.)
- To apply the parameters to the monitor, click the checkbox to the left of the category heading.
- To copy parameters, click the copy button . To paste those parameters, click another column or row on the monitor, and then click the paste button .
- To preview the changes as you make them, click the **Preview** check box.
- To change the parameter window's font size, right-click anywhere on the window, and then click a font size: **Extra small**, **Small**, **Medium**, or **Large**.
- To open online help, click the ? button.
- To add additional parameter rows to the category, click the + button.
- To restore default values, click the **Reset** button.
- In order to save changes, click **Apply**.

Setting Basic Formatting Parameters

Basic Formatting parameters control text and cell coloring, font, and alignment. This category is the only category applicable to rows.

▼ <input checked="" type="checkbox"/> Basic Formatting		Reset	?
Basic Coloring			
Font			
Family	Arial Narrow ▼		
Style	Bold ▼		
Size	Medium ▼		
Content Alignment	  		

MA(Sim,...	
	1.00
	133507.14
	242380.95
	9914.38
	31131.24
	124037

Parameter	Description
Basic Coloring	Select text and background colors by clicking the T and color icons. Default = no color, as indicated by an X on both icons.
Font	Choose font family, style, and size from the menus. Family values include the complete set of system fonts. Style values: Regular , Bold , Italic , Bold Italic . Size values: Extra Large , Large , Medium , Small , Extra Small . Row height accommodates the largest font size. Default = none.
Content Alignment	Click an icon to choose the alignment of the cell contents. Values: Left, Center, Right. Default = none.

Setting Conditional Coloring Parameters

Conditional Coloring parameters help draw attention to a cell's current value.

When you first open the Visual Parameters window, one condition is visible. You can add others.

If you choose the same color for more than one condition, the color cell is highlighted.

▼ <input checked="" type="checkbox"/> Conditional Coloring		
▼ <input checked="" type="checkbox"/> Value is equal to 30995.1		
If cell value is equal to	▼	30995.1
Format Cells	<input checked="" type="checkbox"/> T	<input type="checkbox"/> ■
▼ <input checked="" type="checkbox"/> Value is between 100000 and 150000		
If cell value is between	▼	100000 150000
Format Cells	<input checked="" type="checkbox"/> T	<input type="checkbox"/> ■
▼ <input checked="" type="checkbox"/> Value is greater than 100000		
If cell value is greater than	▼	100000
Format Cells	<input checked="" type="checkbox"/> T	<input type="checkbox"/> ■
▼ <input checked="" type="checkbox"/> Value is less than 10000		
If cell value is less than	▼	10000
Format Cells	<input checked="" type="checkbox"/> T	<input type="checkbox"/> ■

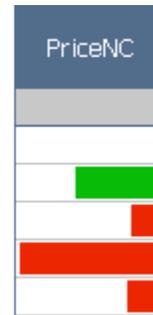
MA(Sim,21...	
30995.10	<input checked="" type="checkbox"/>
9727.86	<input type="checkbox"/>
124079	<input type="checkbox"/>
236086.90	<input type="checkbox"/>

Parameter	Description
Value is...	Each condition begins with a definition of the condition and a check box for turning the condition off. Click the X to remove the condition.
If cell value is...	Select a condition, then type a cell value or values. Condition values: equal to, not equal to, between, not between, greater than, less than, and not empty. Default = greater than.
Format Cells	Select text and background colors by clicking the T and color icons. You can also choose no color. Default: Text = black. Background = yellow.

Setting Histogram Parameters

Histogram parameters allow you to add horizontal bars, representing normalized values, to a column. A histogram provides a graphical representation of data that is more readily accessible than numerical values.

In the **Price** column, a new high and new low are indicated by a second bar, outlined in black.

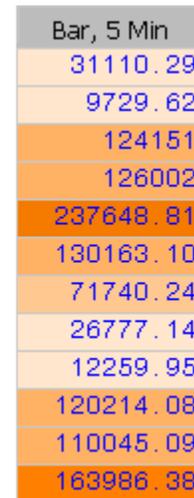
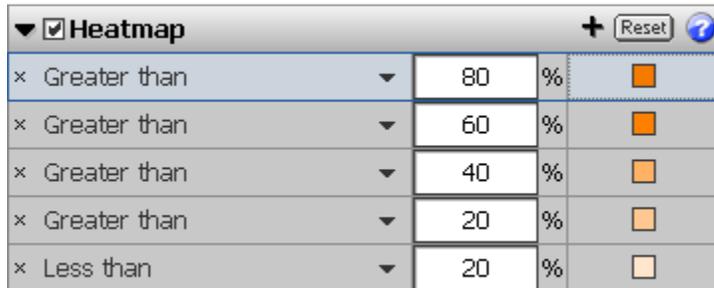


Parameter	Description
Color of Bars	Select colors for both positive and negative values. Default: Positive = green. Negative = red.
Thickness of Bars	Select the width of the bars. Values: Thin, Medium, Thick . Default = Medium.
Location of Axis	Choose the alignment of positive and negative values in the cell. Values: Positive Left/Negative Right, Left, Center, and Right. Default = Positive Left/Negative Right.
Show Bar Only	Select this check box to hide the cell value and display only the histogram bars. Default = off.

Setting Heatmap Parameters

While Conditional Coloring parameters focus on an individual cell value, Heatmap parameters expand the focus to the relationship between cells in a column.

When you first open the Visual Parameters window, three conditions are visible. You can add others.



Parameter

Greater than, Equal to, Less than

Description

From the menu, choose an operator. Then, type a percentage, and select a color.

Values = 0 to 100

Click the X to remove the operator.

Depending on your conditions, it is likely that cells will meet more than one condition.

If a cell meets both...	and...	then the system uses...
greater than	greater than	greatest
less than	less than	least
greater than	less than	first condition in the list
equal to	greater than, less than	equal to
equal to	equal to	first in the list

Setting Child Row Coloring Parameters

This option is available for Bid, Ask, Bid Volume, Ask Volume, Bid Cumulative Volume, and Ask Cumulative Volume columns.

		Bid	Ask
		135175	135200
		135150	135225
		135125	135250
		135100	135275
		135075	135300
		257850	257900
		257825	257925
		257800	257950
		257775	257975
		257750	258000

▼ <input checked="" type="checkbox"/> Child Row Coloring		Reset	?
Color	<input type="checkbox"/>		
Gradient	Descending		

Parameter

Color

Description

Select the color for the current price in the trade data column. Other prices are shades of the same color.

Descending = darker as prices are further away from market.

Ascending = darker as prices are closer to the market.

Default = gray

Gradient

Choose whether the colors are in ascending or descending order.

Working with the Monitors

The Instrument Monitor and the Portfolio Monitor share some basic functionality, including copying data from the monitor, working with tabs, working with columns, and opening a chart.

You can also copy cells from the Portfolio Monitor into Excel using appropriately formatted RTD/DDE links.

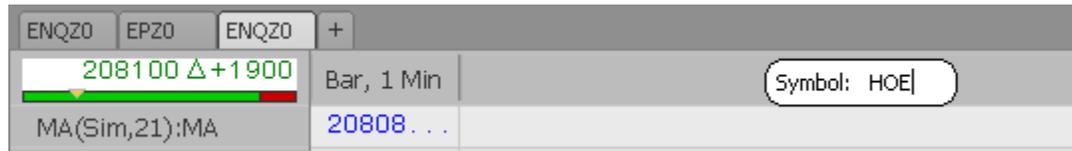
To copy instrument monitor data to the clipboard

1. Right-click on any empty monitor cell.
2. Click **Copy All**.
3. Paste the data in an application, such as Microsoft Excel. The Instrument Monitor data looks something like this:

	A	B	C	D	E	F	G
1	F.US.ENQZ10, Price 208250, PriceNC 2050	Bar, 1	CVB, 10 Tick	ES, 60	Bar, D	Yield, 5	FG, WW
2	cqg.NewHigh(252)	FALSE	FALSE	FALSE	TRUE	FALSE	N/A
3	cqg.RSIHigh(9, 20.000)	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4	cqg.StochRising	TRUE	FALSE	TRUE	TRUE	FALSE	TRUE
5	MA(Sim,21):MA	207985.7	208232.14	206986.9	200378.6	-2007.8	186684.5
6	Abs:Abs	208250	208225	208200	206200	2009.27	202075
7	MACD(12.000,26.000):MACD	43.98	5.2	372.55	3809.35	-0.98	3427.26
8	MACDA(12.000,26.000,9.000):MACD	8.69	8.25	252.16	3724.57	-1.23	1452.31
9	RSI(9):RSI	71.05	48.19	64.64	77.9	40.38	65.75
10	BMA(Sim,20):BBnds	207987.5	208231.25	206982.5	200648.8	-2007.8	186942.5
11	BHI(Sim,20,2.00):BBnds	208237.8	208275.62	208007.6	205904.7	-2005.6	202263.7
12	BLO(Sim,20,2.00):BBnds	207737.3	208186.88	205957.4	195392.8	-2010	171621.3
13	FSK(10):FStoch	94.12	33.33	90.62	94.84	26.92	96.13
14	FSD(10,Smo,3):FStoch	88.12	40.98	75.38	89.38	47.45	89.26
15	SSK(10,Smo,3):SStoch	88.12	40.98	75.38	89.38	47.45	89.26
16	SSD(10,Smo,3,Smo,3):SStoch	81.81	48.02	62.49	82.38	53.82	80.2
17	MPVAHi(30,30):MPVA	207425	207425	207475	207425	N/A	206100
18	MPVAPOC(30,30):MPVA	206975	206975	207000	206975	N/A	202550
19	MPVALo(30,30):MPVA	206275	206275	206325	206275	N/A	200725
20	ZZ(1,0.0):ZZ	208275	208250	207800	206750	-2009.8	196100
21	Mom(10):Mom	425	-25	1625	6650	-1.77	16075

To add a tab to the monitor

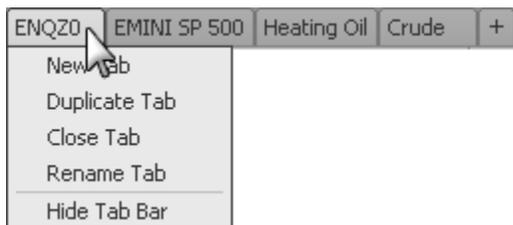
1. Click the + tab. The system replicates the symbol and chart type selected in the current tab.
2. Type the symbol.



3. ENTER.

To work with tabs

Right-click the tab to duplicate, rename, or close the it.



If you hide the tab bar and want to display it again, right-click the title bar and click **Show Tab Bar**.

To resize columns

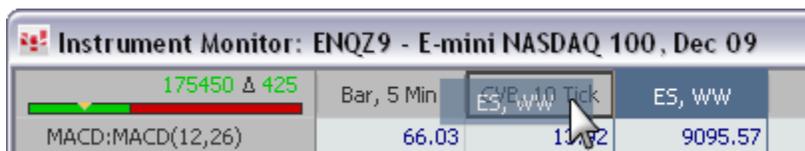
Click and drag the column border to resize the column.

To size columns to fit:

1. Right-click the chart name.
2. Select either **Size Column to Fit** or **Size All Columns to Fit**.

To move a column

Click and drag the column to the new location. In this image, ES, WW is being moved between Bar, 5 Min and CVB, 10 Tick.



To open a chart

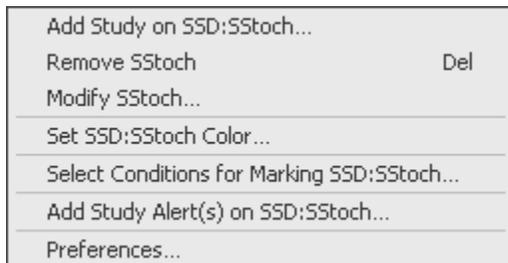
1. Right-click the chart name.
2. Click **Convert to Chart**.

The chart reflects the chart type, interval, and studies in the monitor column.

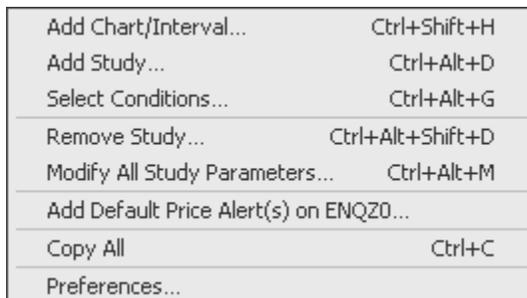
Working with Studies and Conditions on the Instrument Monitor

You can add to the list of studies and conditions located on the left of Instrument Monitor.

To make changes to individual studies and conditions, right-click the study or condition to open a study- or condition-specific menu:



Right-click a blank cell to open menus that allow you to make changes to more than one study and condition at a time:



To add studies

1. Right-click any blank cell on the monitor or the chart heading.
2. Click **Add Study**.
3. Select the study you want to add to the list.
4. Click **Add**.

You can also use CTRL+ALT+D to add a study.

To remove studies

To remove a single study:

1. Right-click the study you want to remove.
2. Click **Remove <study>**.

You can also use the **Delete** key.

To remove more than one study:

1. Right-click a blank cell in the study list.
2. Click **Remove Study**.
3. Select the studies to remove.
4. Click **Remove Selected**.

You can also CTRL+ALT+SHIFT+D to open the **Remove Study** window.

To modify study parameters**To change parameters for one study:**

1. Right-click the study.
2. Click **Modify <study>**.
3. Update the parameters.
4. Click **OK**.

To change parameters for more than one study:

1. Right-click a blank cell in the study list.
2. Click **Modify All Study Parameters**.
3. Change the parameters.
4. Close the **Setup Study Parameters** window.

To change only the color:

1. Right-click the study.
2. Click **Set <study> color**.
3. Click a color or click More Colors to set your own.

A red triangle in the corner of a cell indicates that the parameters of this cell differ from the parameters of the study on the chart, i.e. they have been changed on the monitor.

To add conditions

You can add a condition to the study list or directly to a study.

1. Right-click any blank cell on the monitor or the chart name.
2. Click **Select Conditions**.
3. Select the conditions you want to add.
4. Close the **Specify Conditions** window.

You can also use CTRL+ALT+G to add a condition.

To add a condition to a study, right-click the study.

To add a study alert

1. Right-click the study.
2. Click **Set Add Study Alert(s) for <study>**. The Study Alerts window opens and shows all of the studies on that tab of the monitor.
3. Set parameters and actions, and turn off any alerts for studies you don't want to use.
4. You can then close or minimize the window.

To move studies and conditions

Drag and drop studies and conditions to reorder the list. To move more than one row at a time, click SHIFT (for consecutive rows) or CTRL while you select them. This image is an example of the display as you drag the rows.

cqg.StochRising [4]	↑	↑			↑	↑	
cqg.RSIHigh(9, 20.000) [6]	●	●	●	●	●	●	
cqg.NewHigh(252) [0]							
Abs:Absolute Value	208025.00	208025.00	208050.00	208000.00	2007.50	209500.00	
MACD(12,000,26,000):MACD	-128.88	-6.21	0.07	4084.14	-0.65	4552.97	
MACDA(12,000,26,000,9,000):MACD	-102.25	-4.44	201.16	4016.71	-0.65	2072.44	
BMA(Sim,20):Bollinger Bands	208280.00	208023.75	209002.50	203347.50	-2009.88	188178.75	
BHI(Sim,20,2,00):Bollinger Bands	208733.76	208083.91	210328.67	210366.05	-2001.91	206329.64	
BLO(Sim,20,2,00):Bollinger Bands	207826.24	207963.59	207676.33	196328.95	-2017.85	170027.86	
RSI(9):Relative Strength Index	34.54	50.66	40.26	67.97	61.16	71.53	
FSK(10):Stochastics, Fast	26.67	75.00	35.10	79.84	92.11	99.23	
FSD(10,Smo,3):Stochastics, Fast	18.50	47.19	39.66	82.62	58.54	93.21	
SSK(10,Smo,3):Stochastics, Slow	18.50	47.19	39.66	82.62	58.54	93.21	
SSD(10,Smo,Smo,3):Stochastics, Slow	16.16	38.59	47.05	84.88	80.09	84.54	4552.97
MPVAHi(30,30):MPVA	208075.00	208075.00	208075.00	208075.00		209925.00	
MPVAPOC(30,30):MPVA	208025.00	208025.00	208025.00	208025.00		209200.00	
MPVALo(30,30):MPVA	208000.00	208000.00	208000.00	208000.00		207150.00	
ZZ(1,0,0):ZigZag	207950.00	207950.00	208925.00	210450.00	-2006.74	209775.00	
Mom(10):Momentum	-250.00	50.00	-1400.00	6600.00	7.86	19475.00	
MA(Sim,21):Moving Average	208296.43	208023.81	208984.52	208100.00	-2009.48	188016.67	
FSK(10):Stochastics, Fast	26.67	75.00	35.10	79.84	92.11	99.23	
FSD(10,Smo,3):Stochastics, Fast	18.50	47.19	39.66	82.62	58.54	93.21	
SSK(10,Smo,3):Stochastics, Slow	18.50	47.19	39.66	82.62	58.54	93.21	

You can also create a hierarchy or group, which lets you hide rows easily. In this image, StochRising and RSIHigh were moved under RSI. Click the arrow to hide the sub-studies and sub-conditions.

RSI(9):Relative Strength Index	37.56	68.18	40.26	67.97	61.16	71.53	
cqg.StochRising [4]	↑	↑			↑	↑	
cqg.RSIHigh(9, 20.000) [6]	●	●	●	●	●	●	

Working with Chart Columns on the Instrument Monitor

If you open the Instrument Monitor from a chart, that chart type is reflected in the first column on the monitor. You can add other chart type columns.

To add a chart type column

1. Right-click the chart name or a blank cell anywhere on the monitor.
2. Click **Add Chart/Interval**.
3. Select the chart type and interval.
4. Close the **Main Preferences** window.

You can also use CTRL+SHIFT+H to add a chart.

To remove a column

1. Right-click the chart name.
2. Click **Remove <chart>**.

You can also use the **Delete** key.

To modify chart parameters

1. Right-click the chart name.
2. Click **Modify <chart>**.
3. Change the type, interval, or display.
4. Close the **Main Preferences** window.

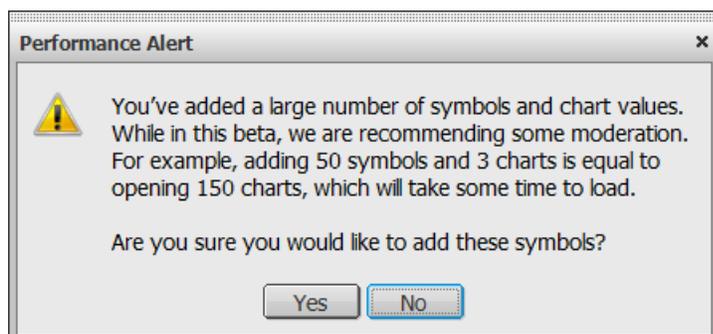
To add alerts

1. Right-click the chart name.
2. Point to **Add Alerts**.
3. Click either **Add Price Alert(s)**, **Add Study Alert(s)**, or **Add Condition Alert(s)**. The alerts window opens and shows the symbol, studies, or conditions, respectively, that are included on that tab of the monitor.
4. Set parameters and actions, and turn off any alerts for studies you don't want to use.
5. You can then close or minimize the window.

Working with Instruments on the Portfolio Monitor

You can add instruments to the monitor either individually or as part of a portfolio. Instruments are listed on the left panel of the monitor.

Please note that adding a large portfolio to the Portfolio Monitor may result in this message:



To add instruments

Click a blank cell, and type the instrument. You can also right-click and select **Add Instrument**.

If you have entered a multi-symbol formula, press CTRL+ALT+SHIFT+ENTER to list the outright of that formula also. For example, typing EP-ENQ and pressing CTRL+ALT+SHIFT+ENTER results in:

Symbol 🖱	Price	PriceNC
EPM1-E...	-98725	+100
EPM1	131275	-75
ENQM1	230000	-175

To remove instruments

Click the cell and press **DELETE**. You can also right-click and select **Edit**.

To change instruments

1. Right-click the instrument.
2. Point to **Edit**.
3. Click **Modify**.
4. Type the new instrument.
5. **ENTER**.

To cut, copy, and paste

1. Right-click the instrument to move or copy.
2. Point to **Edit**.
3. Click **Cut** or **Copy**.
4. Right-click in the location to move to.
5. Point to **Edit**.
6. Click **Paste**.

You can also cut, copy, and paste into other applications, such as Microsoft Excel.

To move a row

1. Click the row to highlight it.
2. Click and drag the row to its new location.
3. Release the mouse button.

To modify charts for an instrument

1. Right-click the instrument.
2. Click **Modify Charts for <instrument>**. The **Sessions** preferences window opens.
3. Make the desired changes.
4. Click **OK**.

To add a portfolio

1. Right-click the upper-left corner of the monitor.
2. Click **Add Portfolio**.
3. Click one of the portfolios, or click **Portfolio** to open the **Select/Define Portfolio** window.

To create and add a new portfolio

1. Right-click the upper-left corner of the monitor.
2. Click **Create New Portfolio**.
3. Enter the name, and click **OK**. To start, the contents include the symbols already on the Portfolio Monitor.
4. Remove and add symbols to the portfolio.
5. Close the **Select/Define Portfolio** window.
6. Right-click the upper-left corner of the monitor.
7. Click **Add Portfolio**.
8. Click the newly created portfolio.

To add alerts

1. Right-click the instrument.
2. Point to **Add Alerts**.
3. Click either **Add Price Alert(s)**, **Add Study Alert(s)**, or **Add Condition Alert(s)**. The alerts window opens and shows the symbol, studies, or conditions, respectively, that are included on that tab of the monitor.
4. Set parameters and actions, and turn off any alerts for studies you don't want to use.
5. You can then close or minimize the window.

Working with Chart and Study Columns on the Portfolio Monitor

You can add charts, studies, and conditions to the monitor. Charts and studies are [grouped together](#) in columns. You can decide if they are sorted by study or by chart. Conditions are displayed in single columns.

To add a chart type

1. Right-click in a blank header cell.
2. Click **Add Chart/Interval**.
3. Select chart type and interval.
4. Close the **Main Preferences** window.

To add a study

1. Right-click anywhere on the monitor.
2. Click **Add Study**.
3. Select the study you want to add to the list.
4. Click **Add**.
5. When you are finished adding studies, click **Close**.

To add a condition

1. Right-click the chart or the instrument.
2. Click **Select Conditions**.
3. Select the conditions you want to add.
4. Close the **Specify Conditions** window.

This image shows examples of conditions on the monitor. You can set the system, so that the positive condition is indicated by a symbol (like the diamond and arrow) or by a change in color (like the yellow and darker blue cells).

cqg.NewHigh	cqg.VolumeLow	cqg.StochRising	cqg.StochFalling
Bar, 5 | CVB,...	Bar, 5 | CVB, ...	Bar, 5 | CVB, ...	Bar, 5 | CVB,...
◆			
◆			
	↓		
	↓		
	↓	↓	
	↓	↓	
	↓	↓	
	↓	↓	
◆			
◆			

To remove a study

1. Right-click a column heading.
2. Click **Remove <condition, study, or bar>**.

You can also press **DELETE**.

To modify a study

1. Right-click the study heading.
2. Click **Modify <study>**.
3. Make the desired changes.
4. Close the **Setup Study Parameters** window.

A red triangle in the corner of a cell indicates that the parameters of this cell differ from the parameters of the study on the chart, i.e. they have been changed on the monitor.

Bar, 5 Min				
MA:MA(...)	RSI:...	BBnds:...	BBnds:B...	BBnds:B...
10566.62	65.93	10567.75	10593.16	10542.34
29256.43	60.48	29246.75	29408.87	29084.63

To modify a chart

1. Right-click the chart heading.
2. Click **Modify <chart>**.
3. Make the desired changes.
4. Close the **Main Preferences** window.

To group columns

1. Right-click the chart heading.
2. Click **Column Pivot**.

This image shows the columns grouped by output name (studies and conditions). Notice the main column heading is for the study or condition with chart type sub-columns.

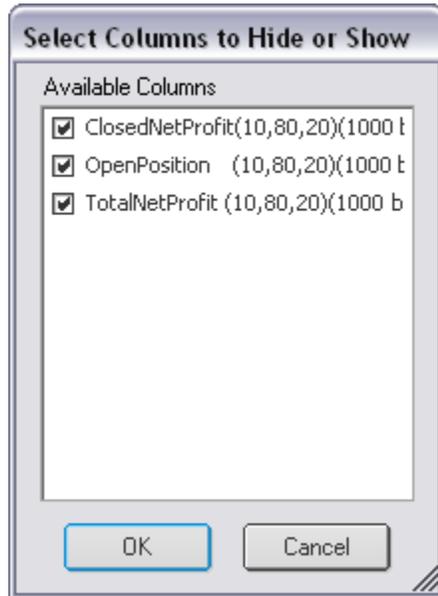
cqq.NewHigh			cqq.VolumeLow			Moving Average:MA(Sim,21)			Relative Strength Index...			Bollinger Bands:BMA(Sim,20)			Bollinger Bands:BHI(Sim,20,2.00)		
Bar, 5	CV...	Tic...	Bar, 5	CVB, ...	Tick,...	Bar, 5	CVB, 10...	Tick, FT	Bar, 5	CVB...	Tick, FT	Bar, 5	CVB, 10 ...	Tick, FT	Bar, 5	CVB, 10 ...	Tick, FT
◆						8716.67	8706.31	8716.67	73.35	72.17	73.35	8717.25	8707.00	8730.00	8733.83	8738.13	8741.62
			↓	↓	↓	96380.95	96378.10	96380.95	40.15	48.54	40.15	96381.75	96377.75	96384.50	96395.63	96393.71	96395.86
			↓	↓	↓	8118.67	8119.71	8118.67	60.37	64.35	60.37	8118.75	8120.35	8129.25	8129.29	8133.77	8134.06
			↓	↓	↓	21216.90	21214.95	21209.05	53.99	39.50	79.48	21216.05	21214.75	21209.40	21262.23	21248.42	21244.15
			↓	↓	↓	4967.14	4969.05	4974.24	54.91	48.11	52.03	4968.45	4968.50	4973.90	4991.80	4979.21	4983.45
			↓	↓	↓	20579.52	20589.90	20586.81	72.25	62.63	49.24	20581.15	20590.15	20587.45	20619.75	20621.80	20622.50
			↓	↓	↓	176166.67	176247.62	176275.00	56.27	47.66	34.48	176177.50	176251.25	176272.50	176525.67	176319.21	17632...
			↓	↓	↓	20579.52	20589.90	20586.81	72.25	62.63	49.24	20581.15	20590.15	20587.45	20619.75	20621.80	20622.50
◆						4001.90	3996.95	4033.24	65.04	66.25	65.47	4003.10	3997.60	4034.00	4037.08	4051.43	4050.52
			↓		↓	10576.10	10566.10	10574.76	56.17	50.34	51.36	10574.60	10570.55	10575.90	10598.79	10653.55	10607.96
◆						8716.67	8706.31	8729.52	73.35	72.17	56.14	8717.25	8707.00	8730.00	8733.83	8738.13	8741.62
			↓		↓	10576.10	10566.10	10574.76	56.17	50.34	51.36	10574.60	10570.55	10575.90	10598.79	10653.55	10607.96
						3809.81	3806.24	3810.00	72.35	55.46	67.57	3810.65	3809.40	3810.85	3828.97	3902.04	3830.58
						5500.10	5217.81	5510.57	52.41	86.49	55.62	5501.90	5231.80	5512.10	5566.64	5585.40	5565.65
◆						4001.90	3996.95	4033.24	65.04	66.25	65.47	4003.10	3997.60	4034.00	4037.08	4051.43	4050.52
◆						8716.67	8706.31	8729.52	73.35	72.17	56.14	8717.25	8707.00	8730.00	8733.83	8738.13	8741.62

This image shows the columns grouped by chart type. Notice the main column heading is the chart type with study and condition sub-columns.

Bar, 5 Min						Constant Volume Bar, 10 Tick						Tick Chart, Flat Ticks							
cqq...	cqq...	MA:MA(...)	RSI...	BBnds:...	BBnds:B...	cq...	cqq...	MA:MA(...)	RSI...	BBnds:...	BBnds:B...	BBnds:B...	cq...	cqq...	MA:MA(...)	RSI...	BBnds:...	BBnds:B...	BBnds:BLO...
◆		8716.67	73.35	8717.25	8733.83	8700.67		8706.31	72.17	8707.00	8738.13	8675.87			8716.67	73.35	8730.00	8741.62	8718.38
	↓	96380.95	40.15	96381.75	96395.63	96367.87		96378.10	48.54	96377.75	96393.71	96361.79		↓	96380.95	40.15	96386.50	96394.93	96378.07
	↓	8118.67	60.37	8118.75	8129.29	8108.21		8119.71	64.35	8120.35	8133.77	8106.93		↓	8118.67	60.37	8131.00	8135.82	8126.18
	↓	21216.90	53.99	21216.05	21262.23	21169.87		21214.95	39.50	21214.75	21248.42	21181.08		↓	21204.10	82.22	21203.25	21228.89	21177.61
	↓	4967.14	54.91	4968.45	4991.80	4945.10		4969.05	48.11	4968.50	4979.21	4957.79		↓	4975.19	31.50	4974.90	4985.25	4964.55
	↓	20579.52	72.25	20581.15	20619.75	20542.55		20589.90	62.63	20590.15	20621.80	20558.50		↓	20586.81	49.24	20587.45	20622.50	20552.40
	↓	176166.67	56.27	176177.50	176525.67	175829.33		176247.62	47.66	176251.25	176319.21	176183.29		↓	176275.00	34.48	176272.50	17632...	176215.71
	↓	20579.52	72.25	20581.15	20619.75	20542.55		20589.90	62.63	20590.15	20621.80	20558.50		↓	20586.81	49.24	20587.45	20622.50	20552.40
◆		4001.90	65.04	4003.10	4037.08	3967.12		3996.95	66.25	3997.60	4051.43	3945.77		↓	4033.24	65.47	4034.00	4050.52	4017.48
	↓	10576.10	56.17	10574.60	10598.79	10550.41		10566.10	50.34	10570.55	10653.55	10487.55		↓	10574.76	51.36	10575.90	10607.96	10543.84
◆		8716.67	73.35	8717.25	8733.83	8700.67		8706.31	72.17	8707.00	8738.13	8675.87		↓	8729.52	56.14	8730.00	8741.62	8718.38
	↓	10576.10	56.17	10574.60	10598.79	10550.41		10566.10	50.34	10570.55	10653.55	10487.55		↓	10574.76	51.36	10575.90	10607.96	10543.84
		3809.81	72.35	3810.65	3828.97	3792.33		3806.24	55.46	3809.40	3902.04	3716.76			3810.00	67.57	3810.85	3830.58	3791.12
		5500.10	52.41	5501.90	5566.64	5435.16		5217.81	86.49	5231.80	5585.40	4876.20			5510.57	55.62	5512.10	5565.65	5456.55
◆		4001.90	65.04	4003.10	4037.08	3967.12		3996.95	66.25	3997.60	4051.43	3945.77		↓	4033.24	65.47	4034.00	4050.52	4017.48
◆		8716.67	73.35	8717.25	8733.83	8700.67		8706.31	72.17	8707.00	8738.13	8675.87			8729.52	56.14	8730.00	8741.62	8718.38

To hide or show columns

1. Right-click the column heading.
2. Click **Column Hide/Show**.
3. Unselect the column or columns you want to hide.



4. Click OK.

Creating a Watch List on Portfolio Monitor and Spreadsheet Trader

The watch list provides a way to filter column values based on study and condition values. Additionally, on Spreadsheet Trader, you can create watch lists to filter symbols, so that only symbols with working orders or open positions are displayed. You can display only those symbols that have volumes that fall within a particular range.

In this image:

- Watch lists include: Positions, Working Orders, Volume, and Moving Average.
- None of the symbols on the monitor have working orders.
- ENQM2, EPM2, TYAM2, and USAM2 meet the conditions defined on the Volume watch list.
- The Positions watch list is on, so only symbols that meet position conditions are displayed.

Symbol	Price	PriceNC	B Vol	A Vol	Buy Size	Buy
▶ HOEM2	28848 A	-128	1	1	5	Sell ST
▶ EPM2	132150 A	-100	415	596	25	Sell ST
▶ ENQM2	255850 B	+100	41	38	25	Sell ST
▶ TYAM2	133140 B	+5	215	495	15	Sell ST
▶ USAM2	146300 A	+40	114	122	15	Sell ST
▶ QON2	10928 B	-217	4	1	5	Sell ST
▶ QPM2	92200 B	-1025	13	1	5	Sell ST

The watch list applies to a particular tab of the monitor. If you duplicate the tab, then the list is duplicated also.

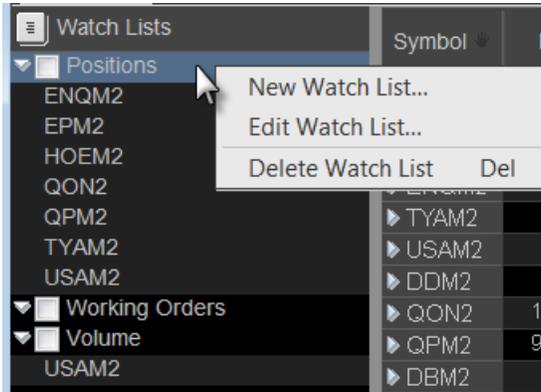
If a watch list is active for a particular tab, the title bar indicates so with “[Watch List Active].”

To create, edit, and delete watch lists

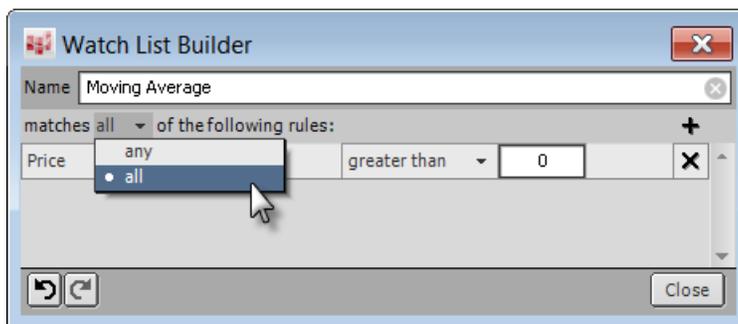
All of these procedures assume that the **Watch Lists** pane is open. If it is not, then click the **Watch List** button on the toolbar.

To create a watch list

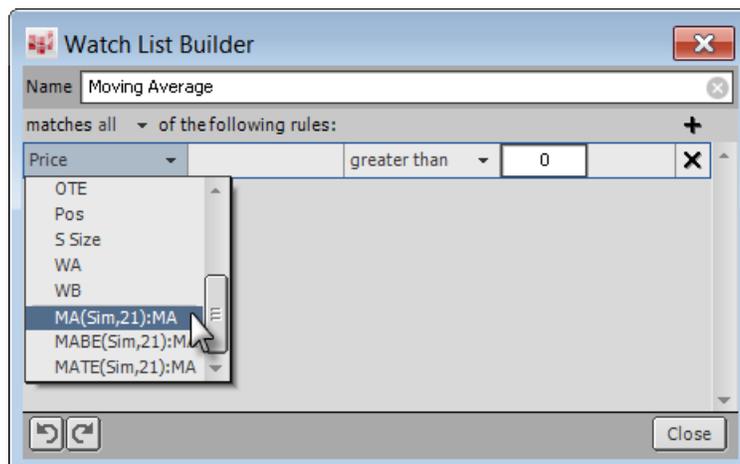
1. Right-click the empty area on the **Watch List** pane.
2. Click **New Watch List**.



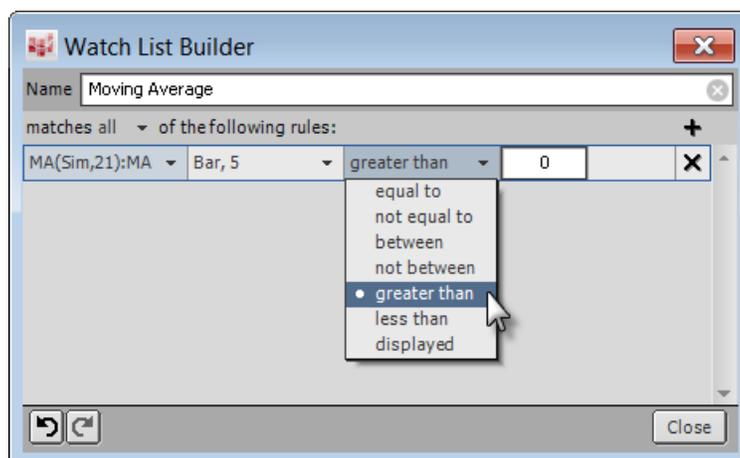
3. Type a name for the watch list. For example, **Volume** or **Moving Average**.
4. Using the drop down menu, choose whether **all** or **any** conditions must be met for the filter.



- The builder opens with one condition row displayed, **Price**. The options for each row correspond to the market data, trading, chart, study, and condition columns displayed on the monitor. To change the column, use the drop down menu.

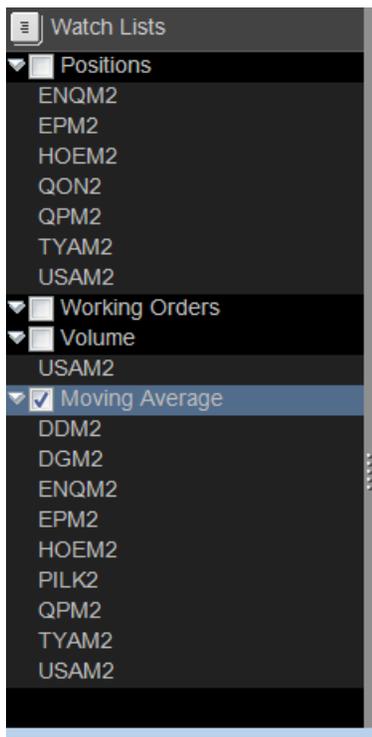


- Select a condition from the drop down menu: **equal to, not equal to, between, not between, greater than, less than, and displayed** (whether the value is present or not).



- Type a value for the condition.
- To add other columns or additional conditions for the same column, click the + button.
- When you are finished, click **Close**.

The watch list is displayed in the list. Symbols that meet the conditions are listed under it. To filter symbols using that watch list, select the check box.



To edit a watch list

Right-click the watch list you wish to edit and click **Edit Watch List**.

To delete a watch list

Right-click the watch list you wish to delete and click **Delete Watch List**.

Trading on a Portfolio Monitor (Spreadsheet Trader)

You can add trading columns to the Portfolio Monitor to consolidate chart, study, condition, and trade data in one window. You can also trade directly from the monitor. Trading requires an enablement.

This image shows trading columns available on the Spreadsheet Trader. These columns can also be combined with chart interval and study columns.

The screenshot shows a window titled "Portfolio Monitor: PS070410 (SIMUA Trading: All PLs Simulator) - EPH2, ENQH2, HOEJ2...". The window displays a table with the following columns: Sym..., Price, PriceNC, A Vol, A Cu Vol, Ask, B Size, Buy, WB(F), B Vol, B Cu Vol, Bid, WA(F), S Size, Sell, Trading Position, and OTE+P/L. The data is as follows:

Sym...	Price	PriceNC	A Vol	A Cu Vol	Ask	B Size	Buy	WB(F)	B Vol	B Cu Vol	Bid	WA(F)	S Size	Sell	Trading Position	OTE+P/L
EPH2	136850 A	-600	524	524	136850	50	Sell STP	100	449	449	136825		10	Buy STP	L 125 @ 1368	2,562.50
ENQH2	263975 A	-350	39	39	263975	50	Sell STP	50	20	20	263950		10	Buy STP	L 290 @ 2638	7,090.00
HOEJ2	32035 B	-718	1	1	32042	10	Sell STP		1	1	32035	16[4]	5	Buy STP	S 15 @ 32041	(1,394.40)
CLEJ2	10648 B	-236	3	3	10649	50	Sell STP		3	3	10648	38[12]	5	Buy STP	L 75 @ 10684	537,150.00
TYAM2	131040 A	+190	876	876	131040	50	Sell STP	100	17	1742	131035		20	Buy STP	S 40 @ 131040	0.00
USAM2	141140 A	+310	208	208	141140	20	Sell STP	40	382	382	141130	20	20	Buy STP	S 40 @ 141140	1,250.00

Trading columns cannot be a child of another column.

As with other Portfolio Monitor columns, you can sort and hide columns.

To log on to trade, click the **Logon** button on the Portfolio Monitor toolbar.

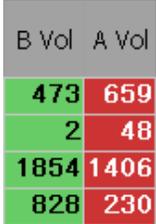
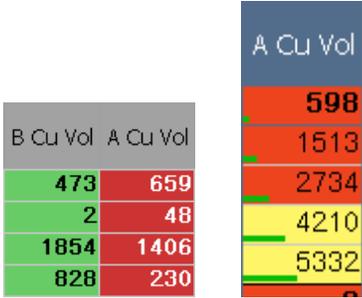
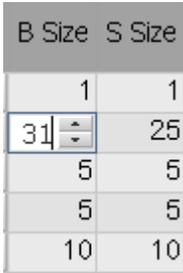
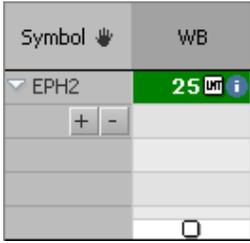
Trading Column Descriptions

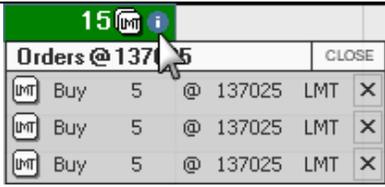
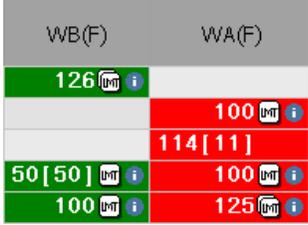
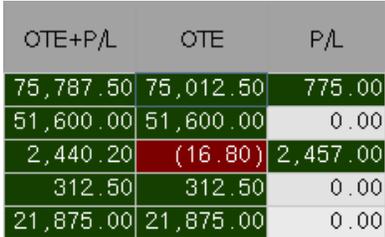
Hover the mouse over the header to see the full name of the column.

Double-click any price or volume cell to open the default trading application.

Control the color of the Bid, Ask, B Vol, A Vol, B Cu Vol, and A Cu Vol columns using the Child Row coloring visual parameter.

Column	Image	Description
Bid Ask		<p>Current best bid. Current best ask.</p> <p>The parent row shows the best bid and best ask. Child rows, not seen in this image, show depth-of-market prices. Child rows are also referred to as DOM rows.</p> <p>Click this cell and type a new value to change the price for an order. You can also use the up and down arrows.</p> <p>Light green = best bid and below (buy side) Light yellow = best bid and below (sell side); best ask and above (buy side) Light red = best ask and above (sell side)</p> <p>Right-click the cell to return to best bid or best ask.</p> <p>Hovering the cursor over these cells displays a message with the symbol, best bid, best ask, last trade, and volume. When there is no last trade, settlement data is used instead.</p> <p>High (green) and low (red) indicators are represented as lines at the top of the price cell.</p> <p>If a price is equal to the average fill price, the cell is colored according to buy/sell colors set in preferences.</p> <p>Conditional Coloring visual parameters apply.</p>

Column	Image	Description
B Vol A Vol		Current bid volume. Current ask volume. Conditional Coloring visual parameters apply.
B Cu Vol A Cu Vol		Bid cumulative volume. Ask cumulative volume. Shows the cumulative volume from current price level to the best. Total volume calculations are stopped after the last available volume. Conditional Coloring, Histogram, and Heatmap visual parameters apply. The image on the right includes a histogram and heatmap coloring.
Buy Sell		If fast-click is enabled, then these cells contain Buy LMT and Sell LMT buttons. Click a cell to place an order at the limit price displayed in the corresponding bid or ask cell. Press the Ctrl button as you click the button to change limit to stop.
B Size S Size		Buy size. Sell size. Click the cell to cycle through default sizes. To type a new value, click the cell and start typing. You can also use the up and down arrows. Right-click the size columns to reset the value to the default.
WB WA		Working orders below market. Working orders above market.. The first image shows the parent row with the working order and child rows (DOM rows). The square indicates an order that is out of view. The second image shows stacked orders. Double-click the information icon to see order details. When DOM rows are visible, working orders

Column	Image	Description
		<p>move from row to row as prices change.</p> <p>When DOM rows are hidden, the parent row reflects the sum of all working orders.</p>
WB(F) WA(F)		<p>Working orders below market (filled quantity). Working orders above market (filled quantity).</p> <p>Similar to WB and WA, these cells show working order information. Additionally, the filled portion of the order is displayed in parentheses.</p>
OTE P/L OTE & P/L		<p>Double-click any of these cells to open the Orders and Positions window.</p> <p>Positive value cells are green; negative value cells are red.</p> <p>Conditional Coloring and Histogram parameters apply.</p>
Position		<p>If there is no position, this cell is empty.</p> <p>Right-click this cell to liquidate or reverse the position or to open Notifications preferences.</p> <p>Double-click this cell to open the Orders and Positions window.</p> <p>Long position cells use the buy color setting; short position cells use the sell color setting.</p> <p>Conditional Coloring parameters apply.</p>

If you are not enabled for trading on Spreadsheet Trader, hovering the cursor over a cell displays the note "Information is not available (not permitted)."

DOM Data Rows

Each row on Spreadsheet Trader can be expanded to show depth-of-market (DOM) data. Click the arrow to the left of the symbol to expand the row. You can also use these keyboard shortcuts:

expand = Ctrl + >

collapse = Shift + Ctrl + <

Sym...	Price	PriceNC	Bid	B Vol	B Cu Vol	Ask	A Vol	A Cu Vol	Buy	B Size	WB(F)
▼ EPH2	135725 B	-275	135325	12774	135775	639	639	Buy LMT	25	25	WB(F)
+	-		135725	859	944	135800	1111	1750	Buy LMT		
			135700	1193	2137	135825	1031	2781	Buy LMT		
			135675	1328	3465	135850	1451	4232	Buy LMT		
			135650	1996	5461	135875	1565	5797	Buy LMT		

→ DOM Data

↓
Indicates working order further down DOM ladder

When you expand the row, four rows are exposed. To expose additional rows, click the plus button. Click the minus button to hide rows. You can also use keyboard shortcuts:

plus = Ctrl + >

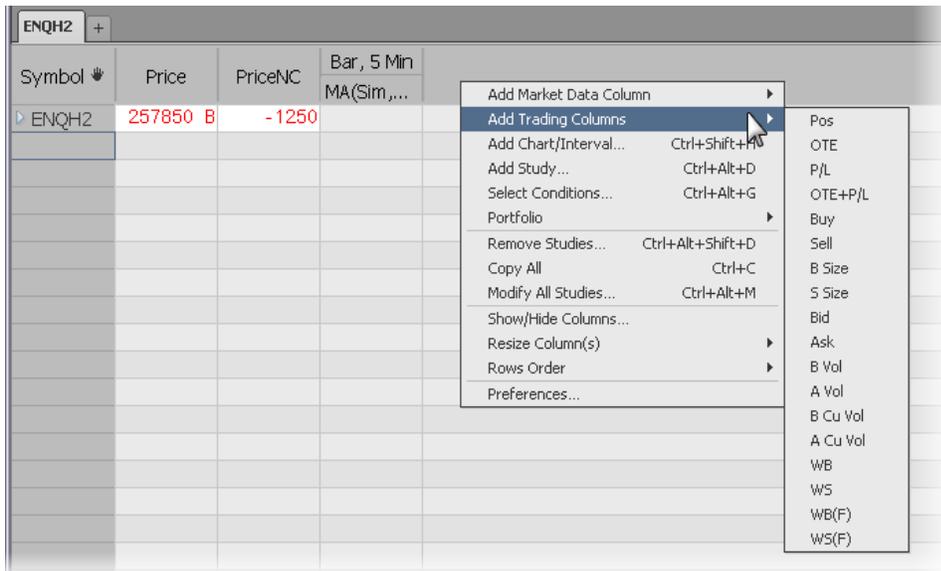
minus = Ctrl + <

Separate visual parameters are available for DOM rows. Note that visual parameters applied to a child row have higher priority than parameters applied to a parent row.

To add, remove, and move trading columns on Spreadsheet Trader

To add a column

Right-click, point to **Add Trading Columns**, then click the column you want to add.



To remove a column

Select the column and press the **Delete** key. You can also right-click and then click **Remove**.

To move a column

Click and drag the column. When a rectangle appears in the upper-left of the destination column(see image), release the mouse button to drop the column in the new location.

A Vol	A Cu Vol
449	449
30	30
13	13
2	2
2096	2096

Trading columns can be placed between chart, study, and condition columns. If the view is pivoted, then trading columns that are between chart columns are moved to the left. For illustration purposes, this image shows Bid, Ask, Ask Volume, and Bid Volume columns between chart columns.

Symbol	Price	PriceNC	Bar, 5 Min MA(Sim,21)...	Bid	Bar, 5 Min MA(Sim,21)...	Ask	CndI, 60 MA(Sim,21)...	Ask Volume	CndI, WW MA(Sim,21)...	Bid Volume	Line, Daily MA(Sim,21)...
EPH2	136775 B	-675	136860.71	136775	136860.71	136800	137271.43	747	127352.38	135	135553.57
ENQH2	263850 A	-475	264091.67	263825	264091.67	263850	264321.43	25	238472.62	19	258180.95

When the view is pivoted, so that columns are organized by study, those columns are moved to the left:

EPH2, ENQH2, HOEJ2...		MA(Sim,21):Moving Average									
Symbol	Price	PriceNC	Bid	Ask	Ask Volume	Bid Volume	Bar, 5 Min	Bar, 5 Min	CndI, 60	CndI, WW	Line, Daily
EPH2	136775 B	-675	136775	136800	762	122	136860.71	136860.71	137271.43	127352.38	135553.57
ENQH2	263825 B	-500	263825	263850	22	22	264091.67	264091.67	264321.43	238472.62	258180.95

To select an account on Spreadsheet Trader

To change accounts, press F11 or right-click the title bar and then click **Select Account**.

You can have a different account on each tab. Note that if Spreadsheet Trader is linked as a child to a master window, changing the account in the master window changes it in Spreadsheet Trader.

To place an order on Spreadsheet Trader

To place a limit order

- Click the [Buy LMT](#) or [Sell LMT](#) button.
- Drag a price to the buy or sell column or one of the working orders columns. [Note that order type is impacted by distance from market and limits and stops preferences.]
- Right-click one of the bid volume columns to place a sell order. Right-click one of the ask volume columns to place a buy order.

To place a stop order

- Right-click the **Buy LMT** or **Sell LMT** button.
- Press **Ctrl** on your keyboard as you click the **Buy STP** or **Sell STP** button.
- Press **Ctrl** on your keyboard as you drag a price to the buy or sell column or one of the working orders columns. [Note that order type is impacted by distance from market and limits and stops preferences.]

To place a sweep order

A sweep order has a quantity totaling the aggregated depth quantity. Sweep orders are placed by clicking a dragging a volume column cell to either the buy or sell column or a working orders column.



Sweep orders must be enabled in preferences.

To modify and cancel orders on Spreadsheet Trader

To modify size

1. Click the order.
2. Type a new size. The new size is shown in the order list:



3. Enter to apply the new size.
4. Click the x button to close the order list.

To change the size of an order in a stack, double-click the information icon to open the stacked order list. Then, click the existing size and type a new one.

To modify price

1. Expand the row, so that DOM rows are displayed.
2. Click and drag the order to the desired price.



3. Release the mouse.

To change the price of an order in a stack, double-click the information icon to open the stacked order list. Then, drag the order to a new price. If the price is hidden by the stacked order list, drag and drop the window in a new location.

To cancel an order

Right-click an order to cancel it. You can also click and drag the order off of the grid.

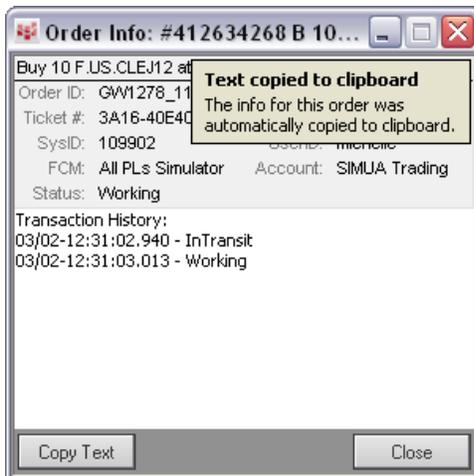
If you right-click a stacked order, all orders are cancelled. To cancel a single order in a stack, double-click the information icon to open an order details window, then click the x button to delete the order.



Quantity	Price	Order Type	Cancel
100	790	993	136600
Orders @ 136600			
LMT Buy 20	@ 136600	LMT	X
LMT Buy 20	@ 136600	LMT	X
LMT Buy 20	@ 136600	LMT	X
LMT Buy 20	@ 136600	LMT	X
LMT Buy 20	@ 136600	LMT	X

To copy order details to the clipboard

Double-click the order. The Order Info window opens and confirms that the text has been copied.



For stacked orders, double click the information icon to open the list of orders, then double-click the order you want to copy.

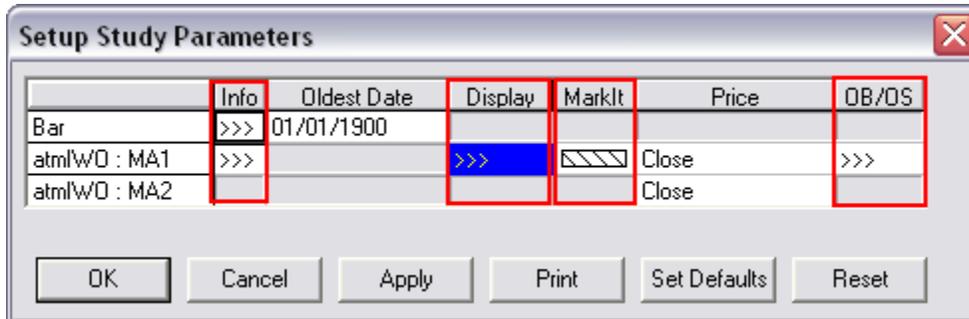
Third-Party Studies

CQG offers many third-party studies to help you enhance your analysis:

- [Advanced Trading Methods](#)
- [First Step Next Step](#)
- [DiNapoli](#)
- [Profitunity](#)
- [Shaun Downey](#)
- [SMR](#)
- [Statware](#)
- [Supplemental](#)
- [Tom Joseph](#)

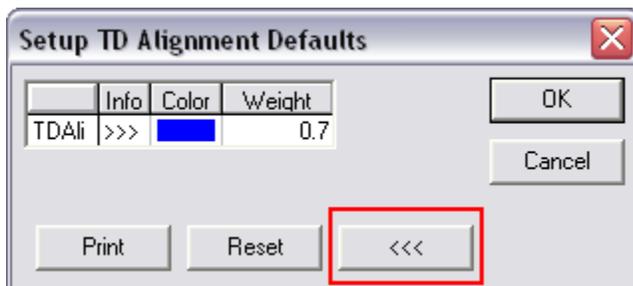
Common Third-Party Study Parameters

Many studies include these common parameters: **Info**, **Display**, **MarkIt**, and **OB/OS**.



The **Info** button is not an actual parameter. Clicking this button opens the online help for the study.

Parameters that contain arrows (>>>) indicate that a secondary parameter window will open when that parameter is selected. To return to the primary window, use the back button on the secondary window:



Display Parameter

Display parameters typically control how the study looks on the chart. They include:

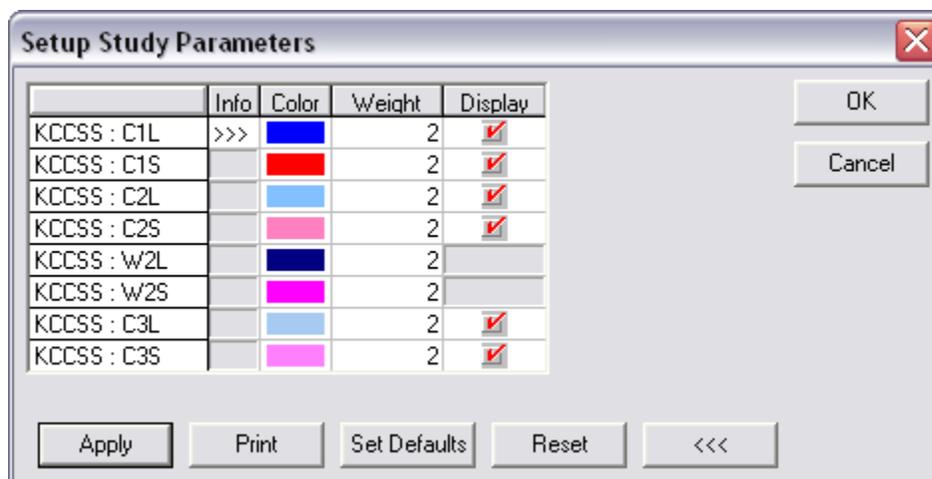
- **Color:** Select a color for the line.
- **Weight:** Choose how thick you want the study line.
- **Line Style/Display:** Choose a line style, such as line or histogram.
- **Display/Enable:** Click this check box to display the line.
- **Share Scale:** Determines whether sharing of the vertical scales between studies is accepted.

Auto = CQG decides if sharing the vertical scale is feasible;

On = The vertical scales will be shared, regardless of which studies are displayed;

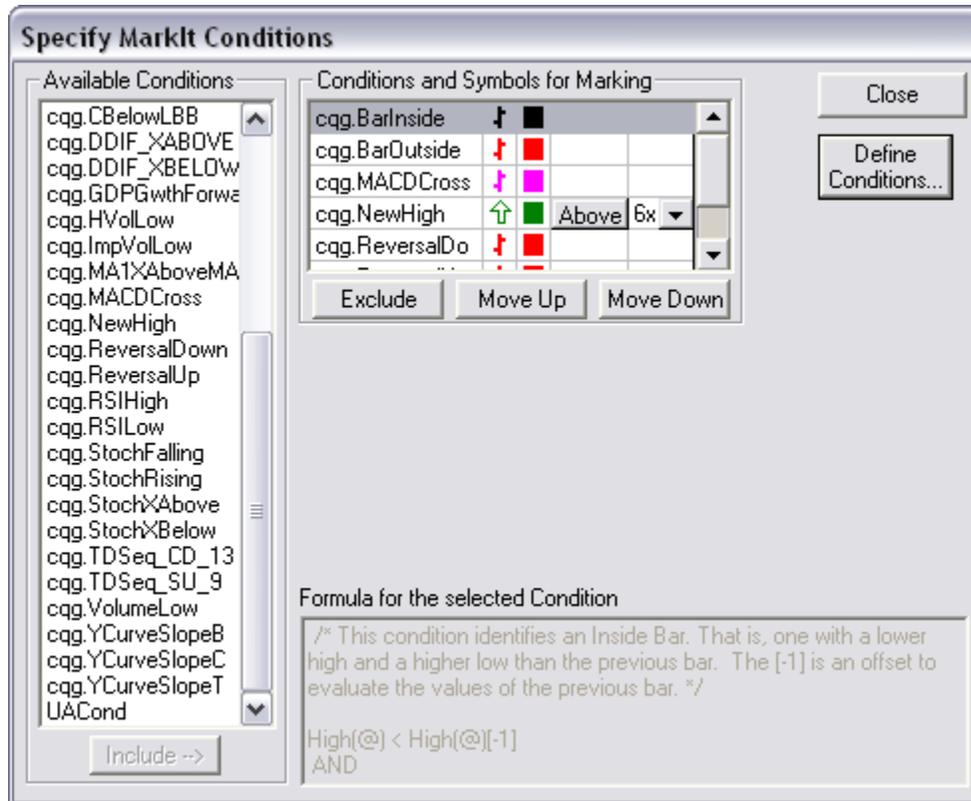
Off = The vertical scale will not be shared between studies.

Here are two examples of display parameters from ATM Major Wave Oscillator and Kase CCSS. Notice that display parameters can vary between studies.



MarkIt Parameter

The MarkIt parameter allows you to add conditions to studies. Clicking the **MarkIt** cell opens this window:



To add conditions:

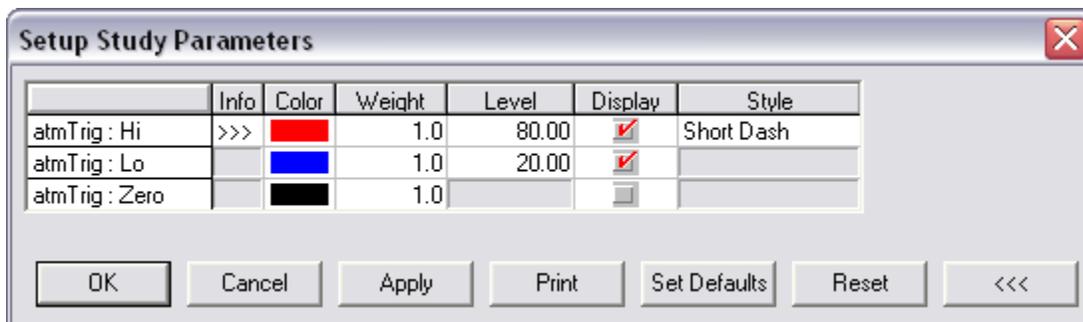
1. Click a condition in the list on the left.
2. Click the **Include** button. The condition will be listed in the list on the top center of the window. Its color and symbol will also be displayed.
3. Some conditions have settings you can select. See **cqq.NewHigh** in the example above. Make any changes you want to these settings.
4. Click **Close**.

OB/OS Parameter

These parameters apply to overbought/oversold indicators:

- **Color:** Select a color for the line.
- **Weight:** Choose how thick you want the study line.
- **Level:** Selects the percentage value of average OB/OS used to calculate the predictor OB/OS levels.
- **Display:** Click this check box to display the line.
- **Style:** Choose a line style.

Here's an example of OB/OS parameters for the ATM Trigger study:



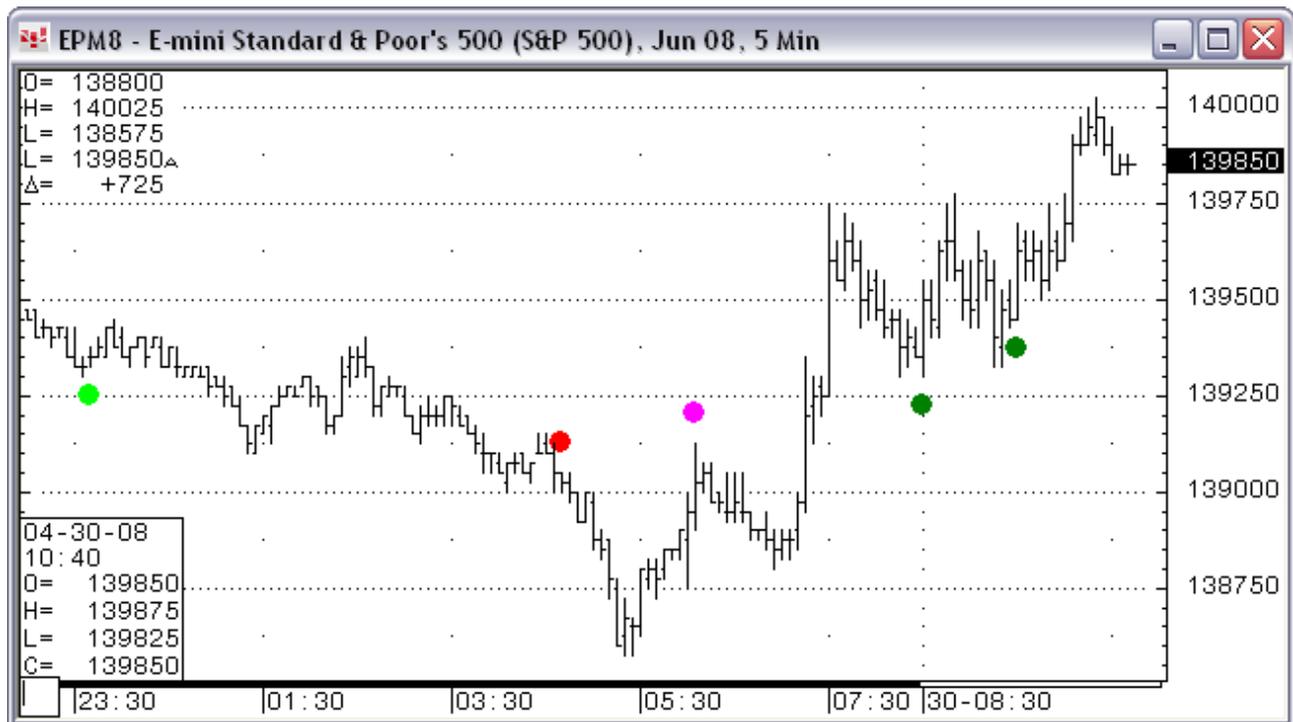
ATM

[Advanced Trading Methods](#) (ATM) L.L.C. provides proprietary studies for the trading process exclusively through COG:

- [Add on Alert \(atmAoA\)](#): attempts to show opportunity to add to existing positions.
- [Entry Zone Indicator \(atmEZI\)](#): used for entry and timing.
- [First Alert \(atmFA\)](#): attempts to identify the start of a major new trend.
- [Minor Wave Oscillator \(atmIWO\)](#): used to identify the internal Elliot Waves inside a Major Elliot Wave.
- [Major Wave Oscillator \(atmMWO\)](#): used to identify the Major Elliot Waves.
- [Possible Turning Points \(atmPTP\)](#): identifies possible minor or major turning points in the market.
- [Stop Lines \(atmSL\)](#): automatically displays areas that you would consider exiting your positions.
- [Support and Resistance Bands \(atmSRB\)](#): identifies an area where the market will frequently turn.
- [Targets \(atmTarg\)](#): automatically projects two potential price targets in the direction of a newly established trend.
- [Trader Alert \(atmTA\)](#): identifies points in market action where there is a high probability of the market changing direction.
- [Trend Change Indicator \(atmTCI\)](#): appears at possible price points where the trend may end.
- [Trend Direction Indicator \(atmTDI\)](#): used to identify trend direction with green representing up and red representing down.
- [Trend Identification Line \(atmTIL\)](#): identifies the Wave Three, Four, and Five by color.
- [Trend Strength Indicator \(atmTSI\)](#): identifies certain relevant conditions that will alert the user when the trend will either continue in its current direction, or is near its end.
- [Trigger \(atmTrig\)](#): used for entry and timing.
- [Umbrella \(atmUmb\)](#): identifies a period of time when new reversing signals may be considered.

For additional information, visit the ATM Studies Web site at www.atmstudies.com.

Add on Alert (atmAoA)



AoA Up1, Dn1, Up2, and Dn2 circles identify areas where additional positions may be considered. They are trend-following, and they systematically signal opportunities to buy breaks and sell rallies within certain market conditions.

You are able to customize the size and color of the circles and control which set of up and down indicators are displayed.

You should protect AoA opportunities with a stop close only order placed on the low of the selected or cross-referenced stop line for a buy, or the high of the selected or cross-reference stop line for a sell.

AoAs usually follow FA opportunities, but may occur separately. AoAs do not represent absolute opportunities to buy or sell. Each signal must be considered in conjunction with other indicators and time frames. This study is best used when cross-referenced to Impulse or Corrective waves of longer time frames.

Add on Alerts Parameters

Parameters are:

- [MarkIt](#)
- **Max\$Risk:** Allows you to set risk level (in dollars/contract). The AoA will appear on the chart if the alert is within the dollar limit set by the user. For a buy, the study calculates this risk level from the close of the bar that generated the AoA signal to the lower selected or cross-referenced stop line. For a sell, the study calculates this risk level from the upper selected or cross-referenced stop line. The Max\$ Risk represents only the pre-determined amount between the AoA closing bar and the chosen stop line and makes no claim that your exit will be executed within the specified dollar amount.
- **Qualified**
- **Enable1:** Turns the Up1 and Down1 indicator on and off.
- **Enable2:** Turns the Up2 and Down2 indicator on and off.

Background (atmBG)

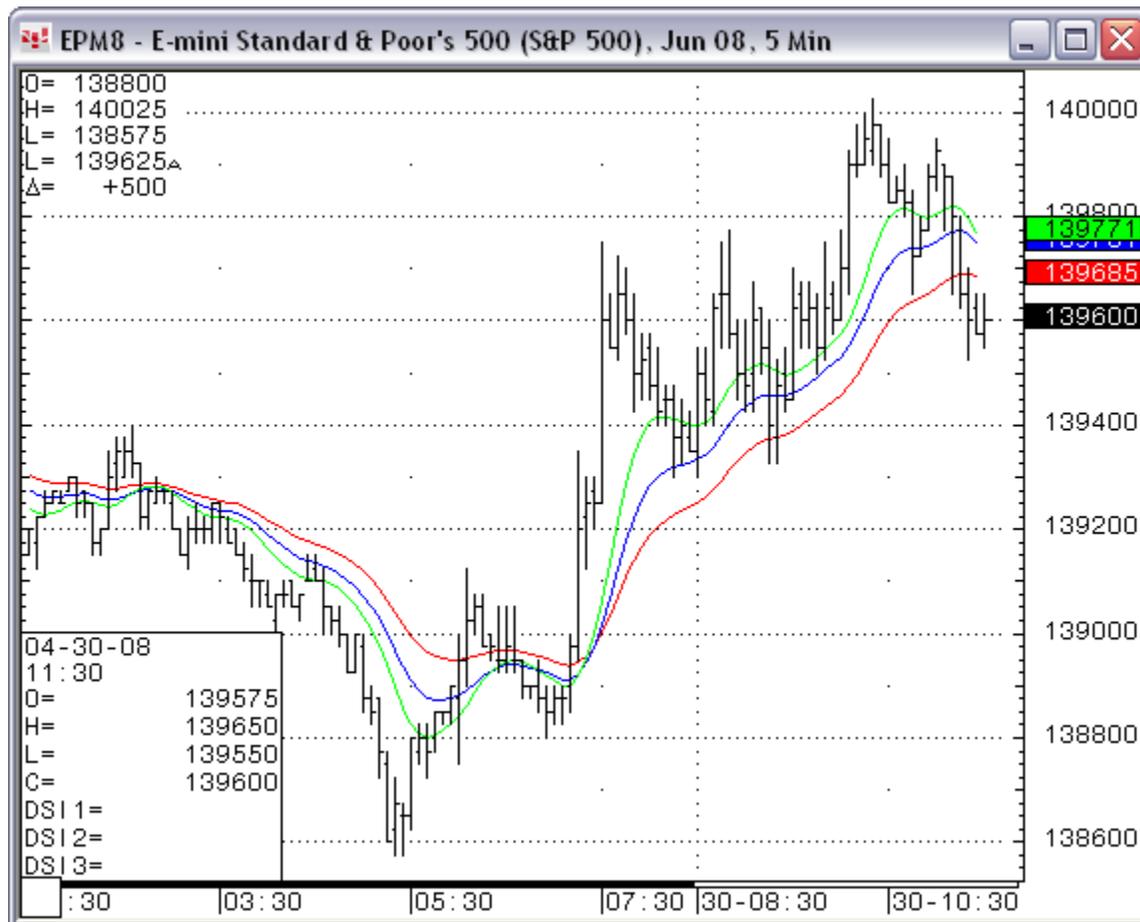
Information forthcoming

Background Parameters

Parameters are:

- Enable
- Interval
- Start Condition
- End Condition
- [Color and Weight](#)

Direction Speed Indicator (atmDSI)



The atmDSI study consists of three lines of different speeds: fast, medium, and slow.

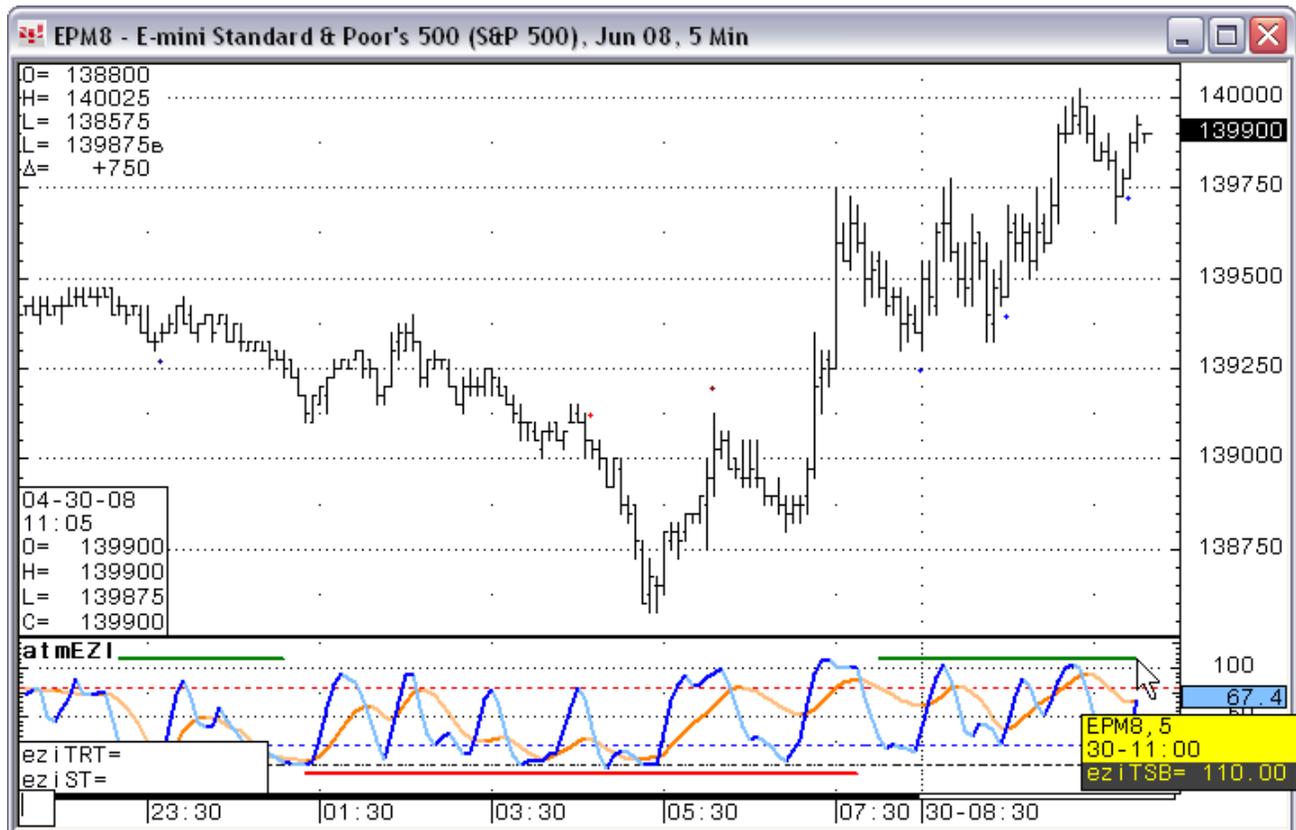
Its primary function is to identify situations where the market is expected to continue trading in its present direction.

When the fastest line crosses, the medium line looks for an entry point. As long as the lines are running parallel, the market is expected to continue trading in its present direction. When they are getting further, apart the market will be moving faster in its present direction.

Direction Speed Indicator Parameters

Parameters are selected on the [Display](#) window.

Entry Zone Indicator (atmEZI)



ATM EZ Indicator is similar to the [Trigger Study](#). Both have two oscillating lines and a horizontal strength line.

The slower oscillating line is the eziST. In this picture, it's orange. This line often identifies the area where an Elliott Wave Two or Wave Four Ends. The atmFA will signal this event if you have it set for ST in the type column.

The faster oscillating line is the eziTRT. In this picture, it's blue. The ATM EZ: TRT is used to verify the validity of the ST on a smaller time frame chart. The shorter time frame event can be identified by the atmFA if the type is set to TRT.

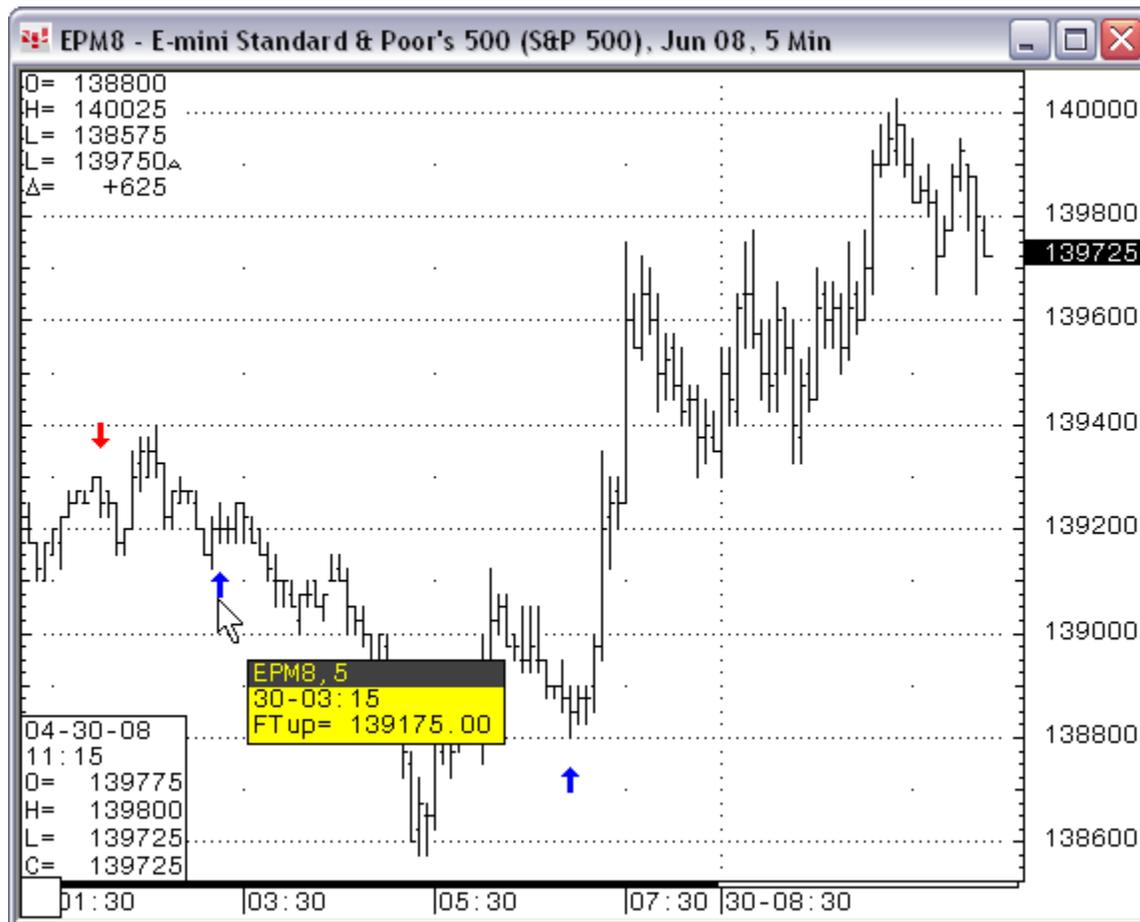
The TSB in this picture is green at the top of the graph and red at the bottom of the graph.

Entry Zone Indicators Parameters

Parameters are:

- [Display](#)
- [OB/OS](#)

First Alert (atmFA)



The First Alert study points out the first entry opportunity in a possible new trend. This indicator is contra-trend, since it anticipates the failure of an Impulse or Corrective Wave to continue.

The Down Arrow represents a sell opportunity. The Up Arrow represents a buy opportunity.

The First Alert indicator is not an absolute opportunity to buy or sell. Each signal must be considered in conjunction with other indicators and time frames. This study is best used when cross-referenced to Impulse and Corrective waves of longer time frames.

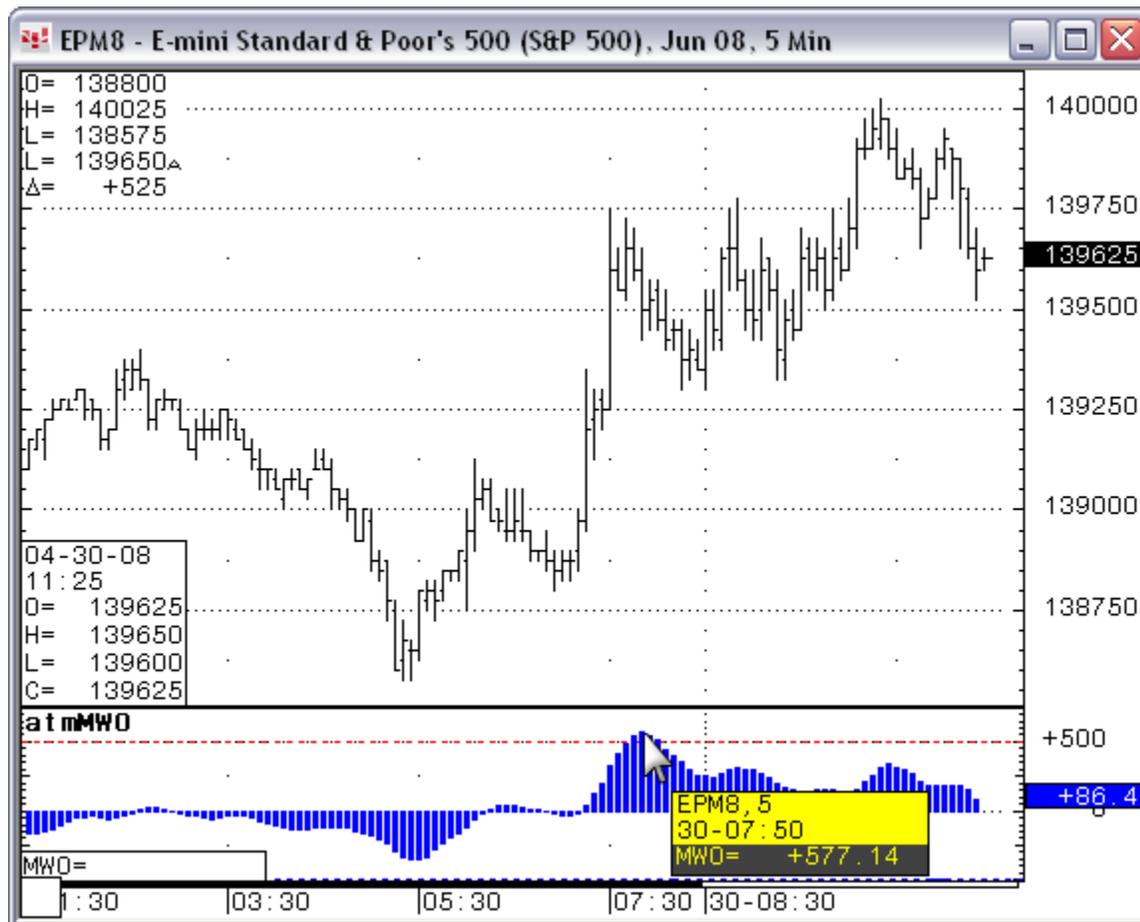
You can choose from three types of first alert signals: Fast Trigger (FT), Slow Trigger (ST), and Trend Reversal Trigger (TRT).

First Alert Parameters

Parameters are:

- [Display](#)
- [MarkIt](#)
- **Type:** Determines which Trigger Line you would like to use for the First Alert.
 - FT** = Fast Trend is the Fast Trigger located in the ATM Trigger study.
 - ST** = Slow Trigger located in the ATM Trigger and ATM EZ Indicator studies.
 - TRT** = Trend Reversal Trigger located in the ATM EZ Indicator.
- **Anchor Period:** The highest/lowest point in the last "x" bars. Once the market establishes a new anchor point the study begins looking for the FA opportunity.
- **Lower Threshold:** Establishes the level by which the atmTrigger (FT, ST or TRT) needs to reach before turning up for the ATM First Alert buy opportunity.
- **Higher Threshold:** Establishes the level by which the atmTrigger (FT, ST or TRT) needs to reach before turning down for the ATM First Alert sell opportunity.
- **Recycle:** When turned on, the study will stop looking for the old FA opportunity and begin looking for the new FA opportunity when the market establishes a new Anchor Point prior to an FA opportunity.
- **Stops:** The last exit opportunity for the FA study. This point is represented by a horizontal bar above/below the FA. This horizontal bar will appear if the FA begins above/below the selected chart or cross-referenced stop line. It stops advancing horizontally when the price closes below/above the lower/upper selected chart or cross-referenced stop lines. If the FA study begins below/above the selected chart or cross-referenced stop line, it will not have a horizontal stop bar. FA then uses the chart or cross-referenced stop line.
- **Max\$Risk:** Represents the amount (in dollars) you are willing to risk per contract. The FA will appear on the chart, provided the alert occurs within the dollar limits set by the user. The risk is calculated from the close on the bar that generated the FA signal to the selected chart or cross-referenced stop line. The Max \$ Risk represents only the pre-determined amount between the FA closing bar and the chosen stop line and makes no claim that the exit will be executed within the specified dollar amount.
- **Qualified:** When turned on, this feature eliminates ATM First Alert opportunities that appear when an opposing ATM Stop Line is being displayed. If no ATM Stop Line is displayed, then the ATM First Alert will appear. If the ATM Stop Line is a Sell Stop Line, then the ATM First Alert buy will display. If the ATM Stop Line is a Buy Stop Line, then the ATM First Alert sell will display.

Major Wave Oscillator (atmMWO)



The ATM Wave Oscillator is used to identify Major Elliott waves. In the example above, the histogram format is displayed.

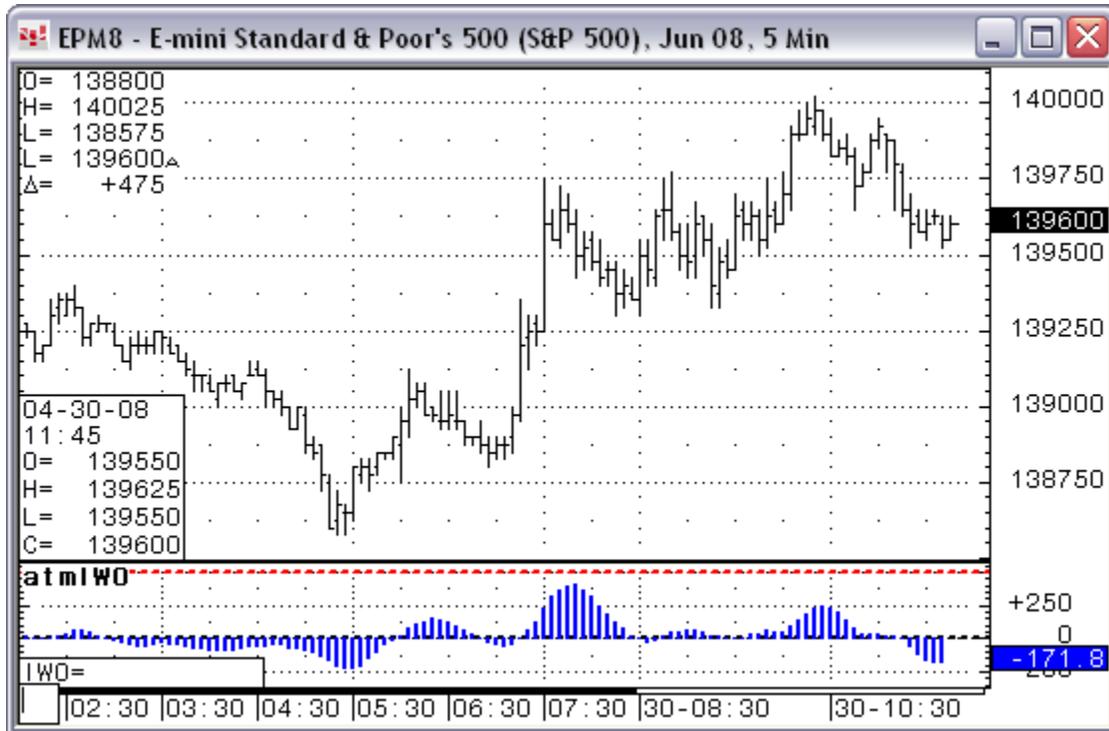
The highest/lowest point reached by the ATM Major Wave Oscillator will occur inside the Wave Three. The ATM Major Wave Oscillator will then retrace at least 90% of the Wave Three portion of the oscillator. Then the market will trade to a point higher/lower respectively than it did in Wave Three, but the ATM Major Wave Oscillator will fail to make a new high in the trend, indicating that Wave Five is nearing completion.

Major Wave Oscillator Parameters

Parameters are:

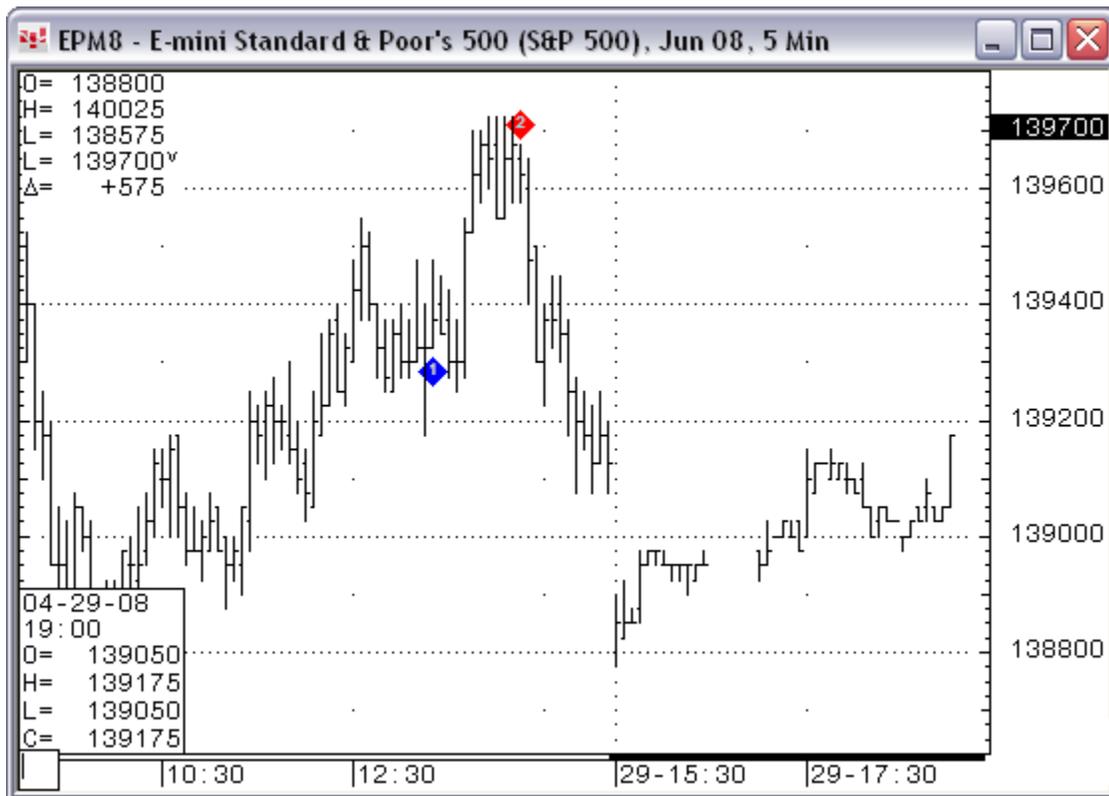
- [Display](#)
- [MarkIt](#)
- **Price:** Adjusts the calculation of the study.
- [OB/OS](#)

Minor Wave Oscillator (atmIWO)



This study is used to identify the internal Elliot Waves inside a Major Elliot Wave. It has the same parameters as "[Major Wave Oscillator \(atmMWO\)](#)" on page 456.

Possible Turning Point (atmPTP)



The Possible Turning Point study displays likely turning points based on Elliott Wave analysis.

When the PTP alert initially appears, tighten your stops and begin looking for a trade in the opposite direction.

This study has no parameters.

Stop Lines (atmSL)



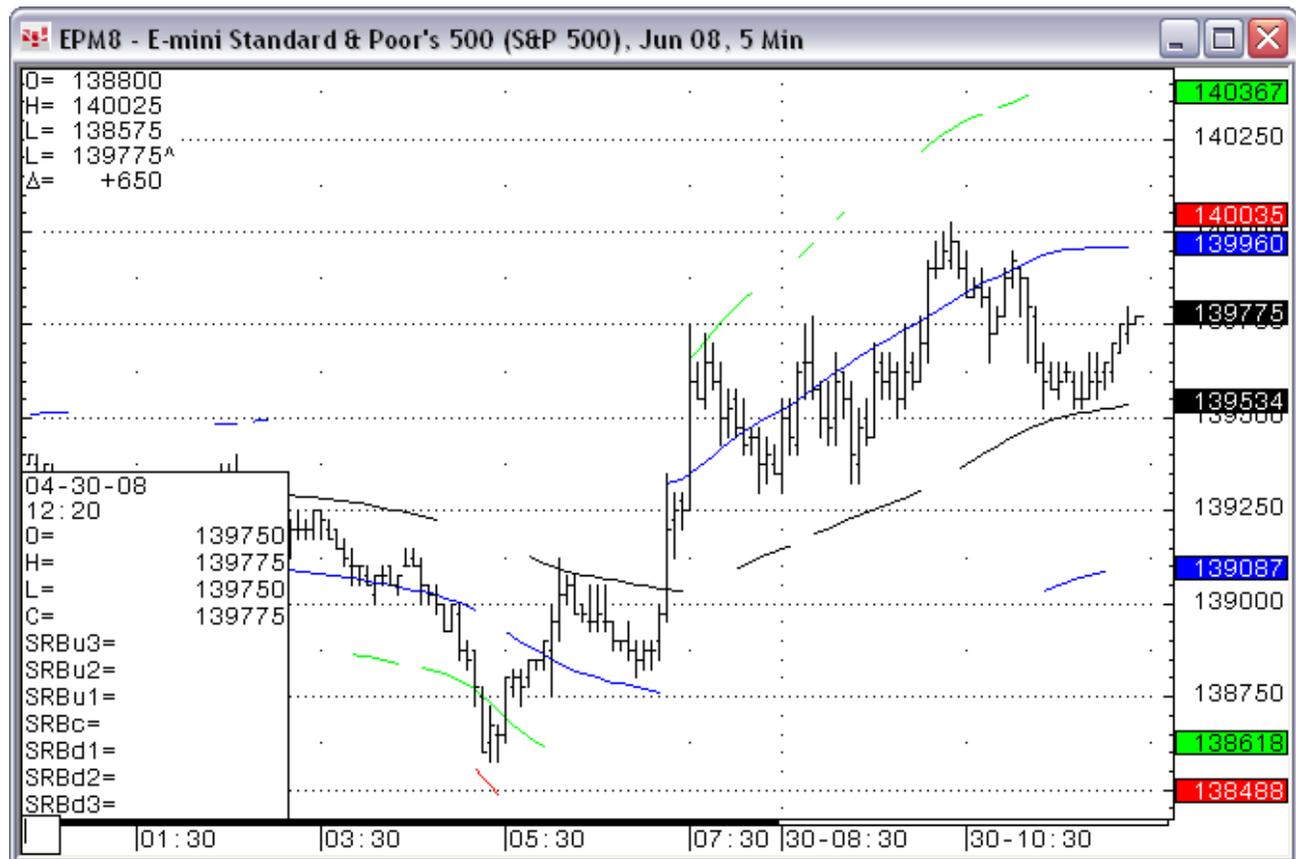
Stop Lines represent last exit opportunities for an overall position. Stop Lines work in conjunction with the FA and AoA studies, all of which are displayed in the example above.

In the FA study, once the instrument closes above the upper Stop Line for a buy, or below the lower Stop Line for a sell, the SL study assumes risk control. AoA opportunities use lower SL lines for buys and upper SI lines for sells. All stops should be placed as stop close only orders.

Stop Lines Parameters

Parameters are selected on the [Display](#) window.

Support and Resistance Bands (atmSRB)



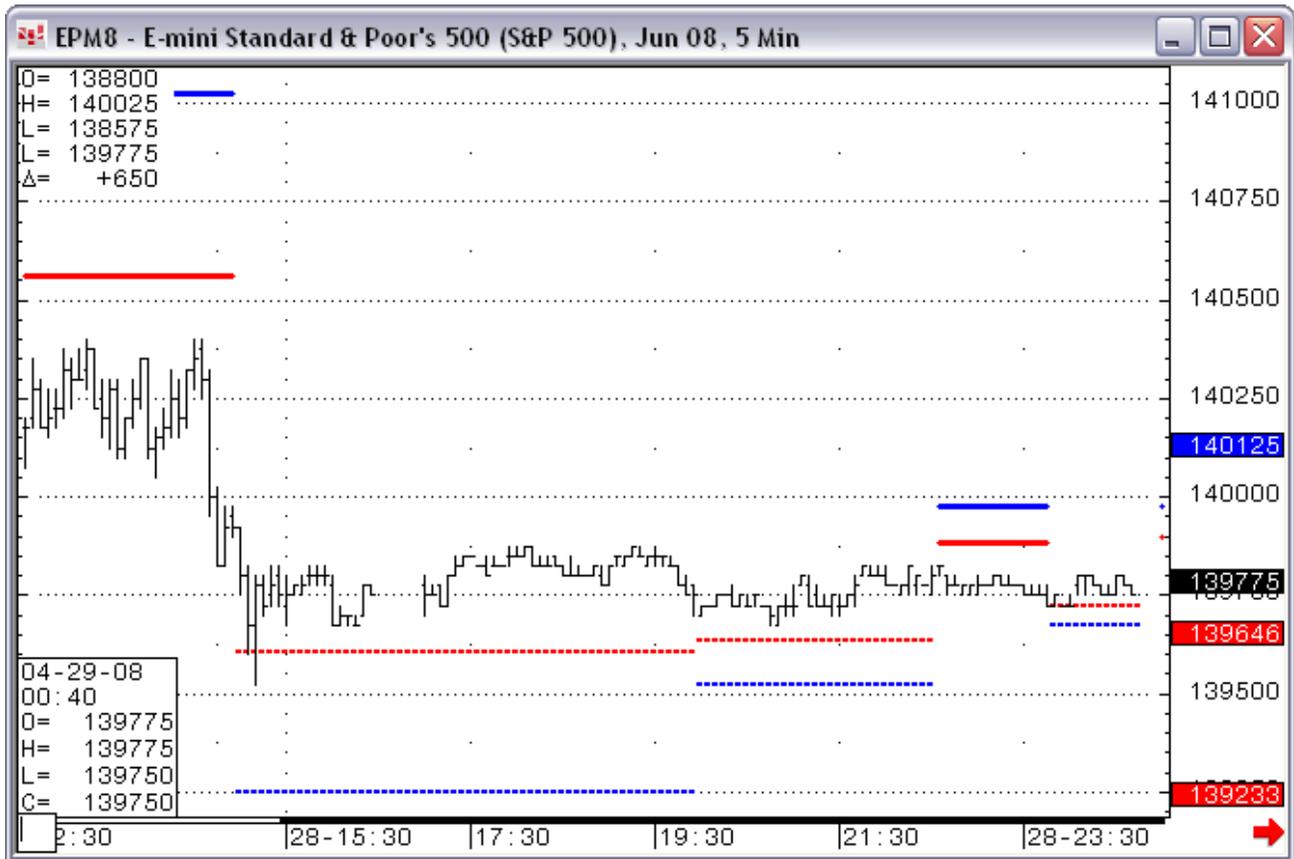
Support and Resistance lines dynamically adjust to current market conditions, appearing and disappearing as the market approaches.

Support and Resistance Bands Parameters

Parameters are selected on the [Display](#) window.

- SRB: U3** Sets the color and thickness of the highest SRB line.
- SRB: U2** Sets the color and thickness of the second highest SRB line.
- SRB: U1** Sets the color and thickness of the third highest SRB line.
- SRB: C** Sets the color and thickness of the SRB center.
- SRB: D1** Sets the color and thickness of the third lowest SRB line.
- SRB: D2** Sets the color and thickness of the second lowest SRB line.
- SRB: D3** Sets the color and thickness of the lowest SRB line.

Target (atmTarg)

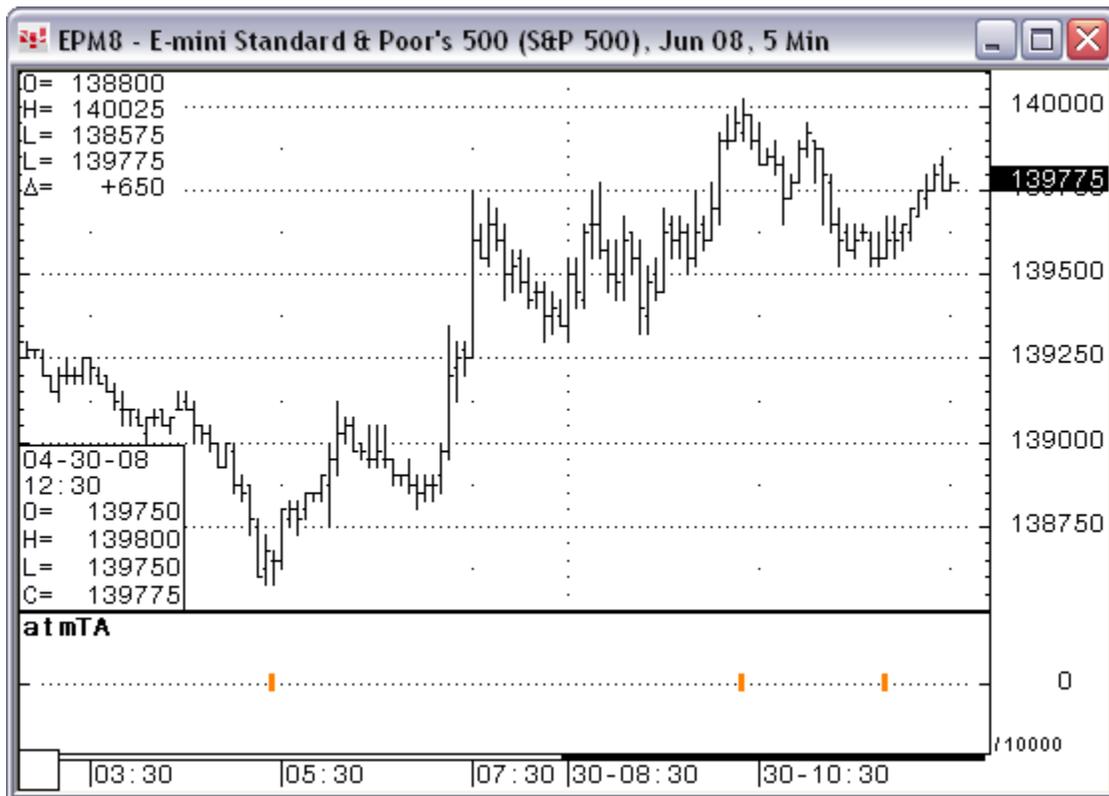


The ATM Target study identifies potential areas where the market will find support or resistance. These targets are similar to Fibonacci Lines but are drawn automatically on your chart.

Target Parameters

Parameters are selected on the [Display](#) window.

Trader Alert (atmTA)



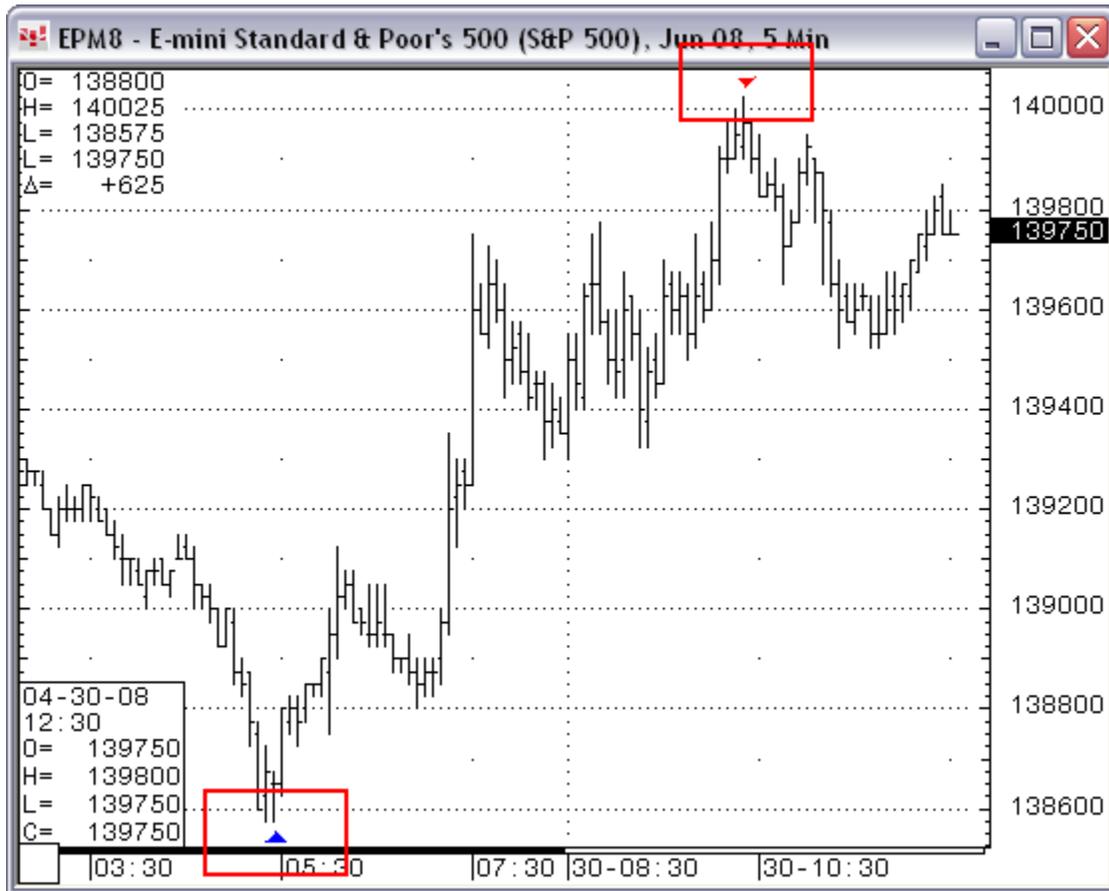
The ATM TA study helps identify possible highs and lows of the chart being viewed.

Once the ATM TA indicator appears, look for the corresponding high or low area. The ATM TA indicator will "float." This means that if the market continues higher or lower, the indicator will move to the new high/low. The "floating" does not create a problem because the ATM TA study is not used as an entry. It is used as a heads-up that the market may change.

Trader Alert Parameters

Parameters are selected on the [Display](#) window.

Trend Change Indicator (atmTCI)

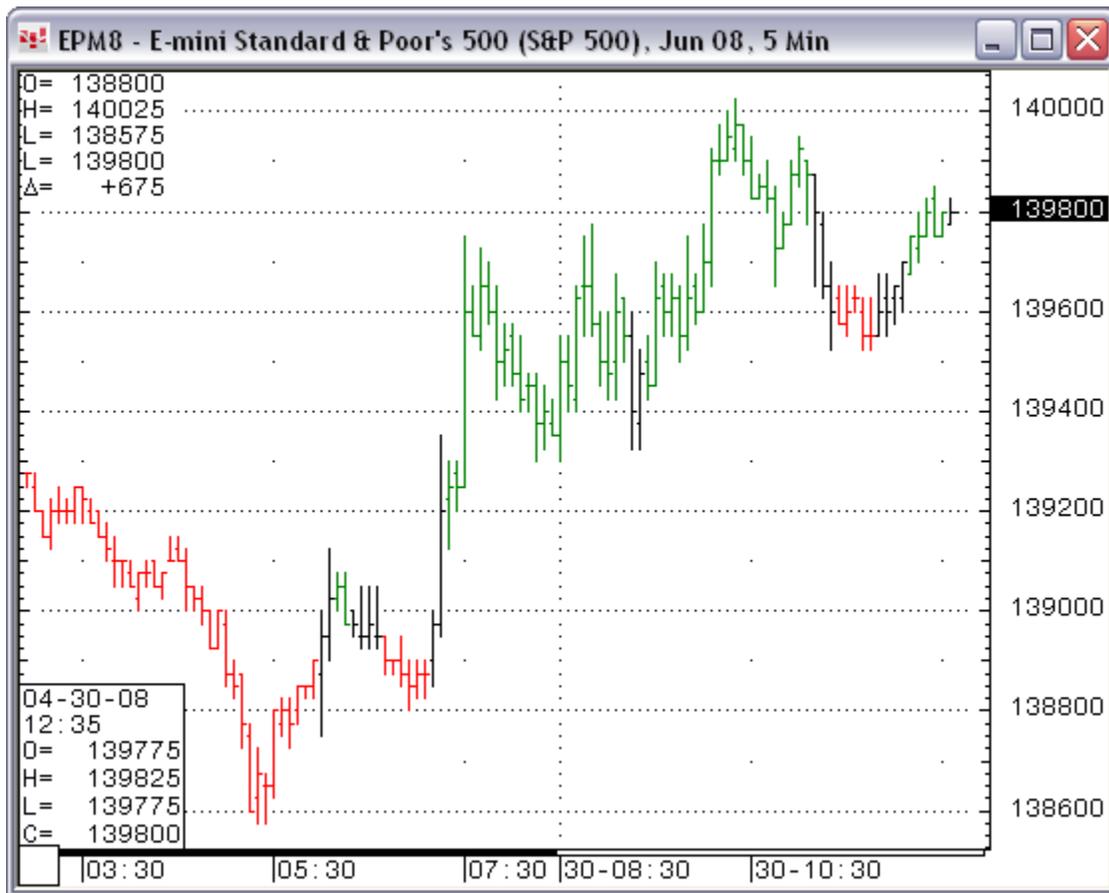


The ATM Trend Change Indicator attempts to identify a point where the market may be close to changing direction.

Trend Change Indicator Parameters

Parameters are selected on the [Display](#) window.

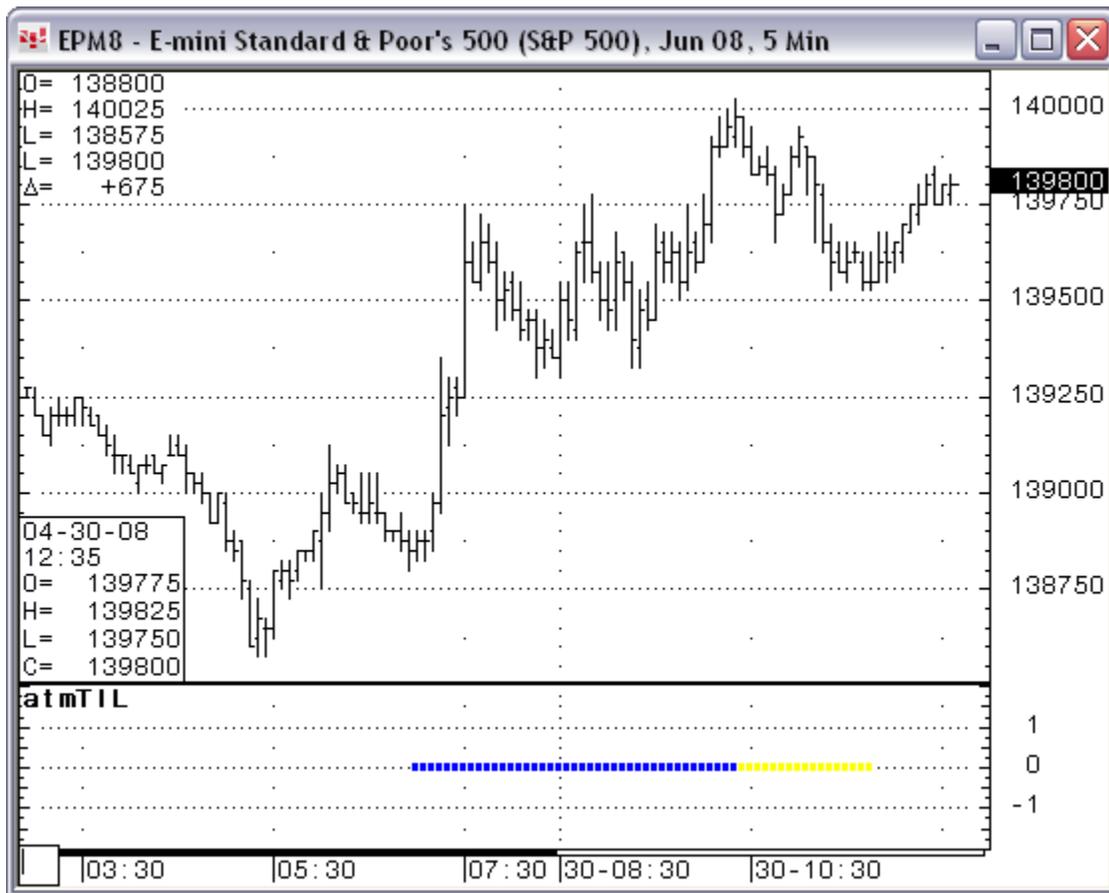
Trend Direction Indicator (atmTDI)



The TDI study indicates the direction of a trend. The study colors the chart bars green if the market is in an uptrend, black if the trend is neutral, and red if the market is in a downtrend.

This study has no parameters.

Trend Identification Line (atmTIL)

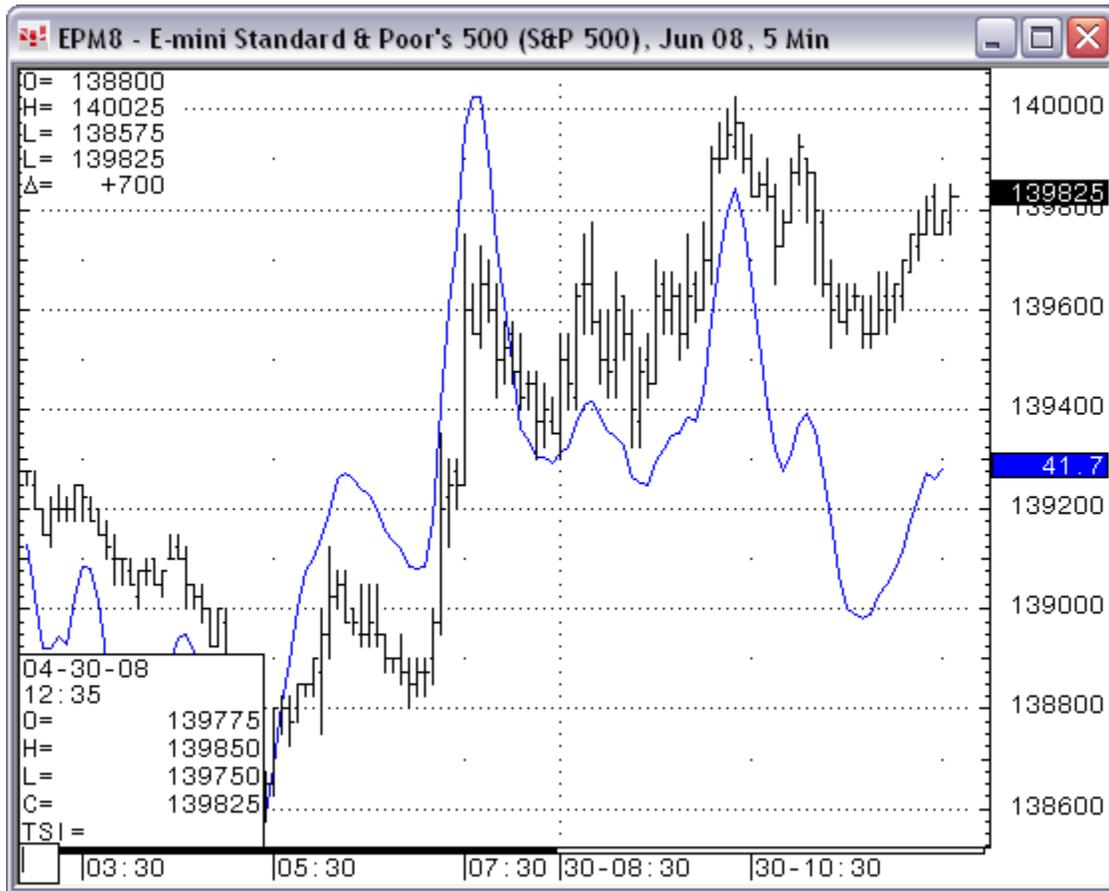


The ATM Trend Identification Line identifies which Elliott Wave the market is trading in. The study has the ability to represent the Elliott Wave of a longer time frame on a shorter time frame chart. Because Elliott Wave counts on a shorter time frame, there are Intermediate Waves of a Major Wave on a larger time frame chart. It is often helpful to know what wave count is on the longer time frame chart.

Trend Identification Line Parameters

Parameters are selected on the [Display](#) window.

Trend Strength Indicator (atmTSI)

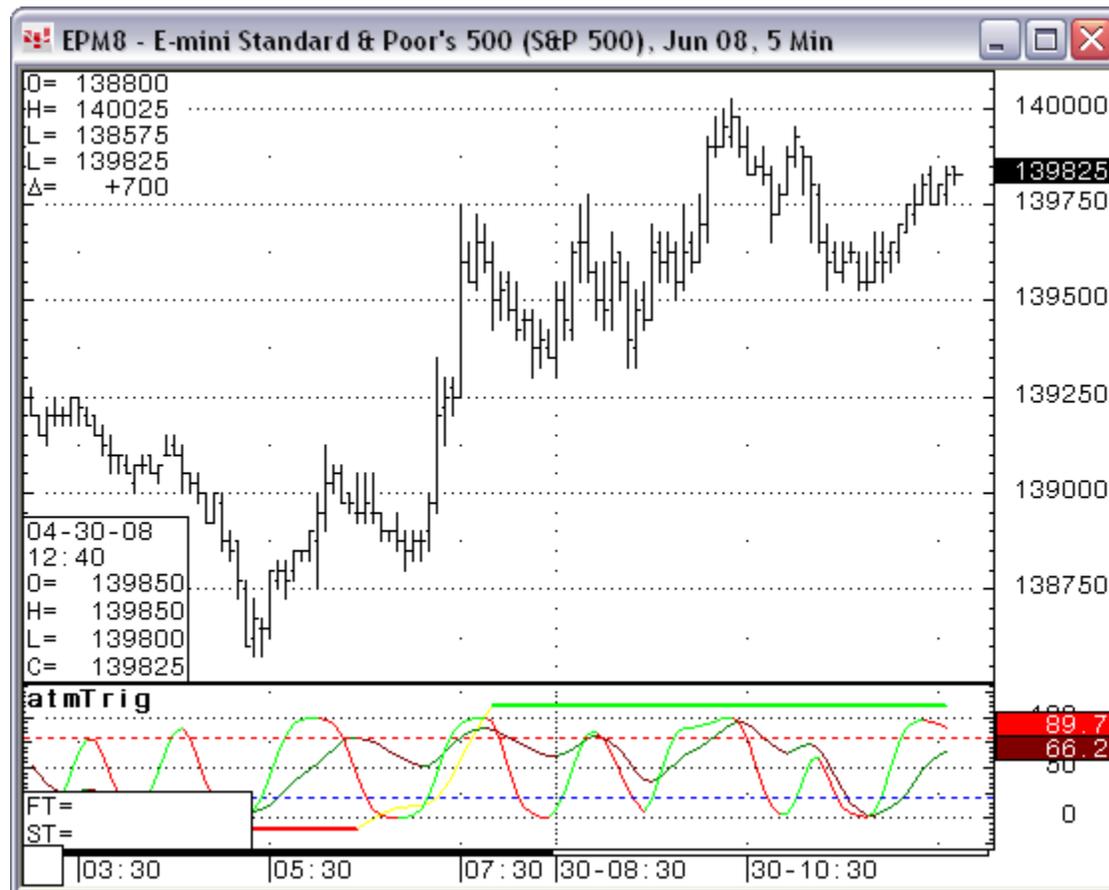


The TSI study indicates the current strength of the market. It is best used when the market is making a new high or new low. Look for divergence between price and the TSI. If price is making a new high and the TSI is not, then the market is weak and may sell off. If price is making a new low and TSI is not, then the market is strong and may rally.

Trend Strength Indicator Parameters

Parameters are selected on the [Display](#) window.

Trigger (atmTrig)



The Trigger study consists of two oscillating lines, the fast trigger and the slow trigger, and two horizontal bars. The lines oscillate at different speeds and help identify change in market direction. The system colors the fast trigger lines red when the market is going down and green when it is going up.

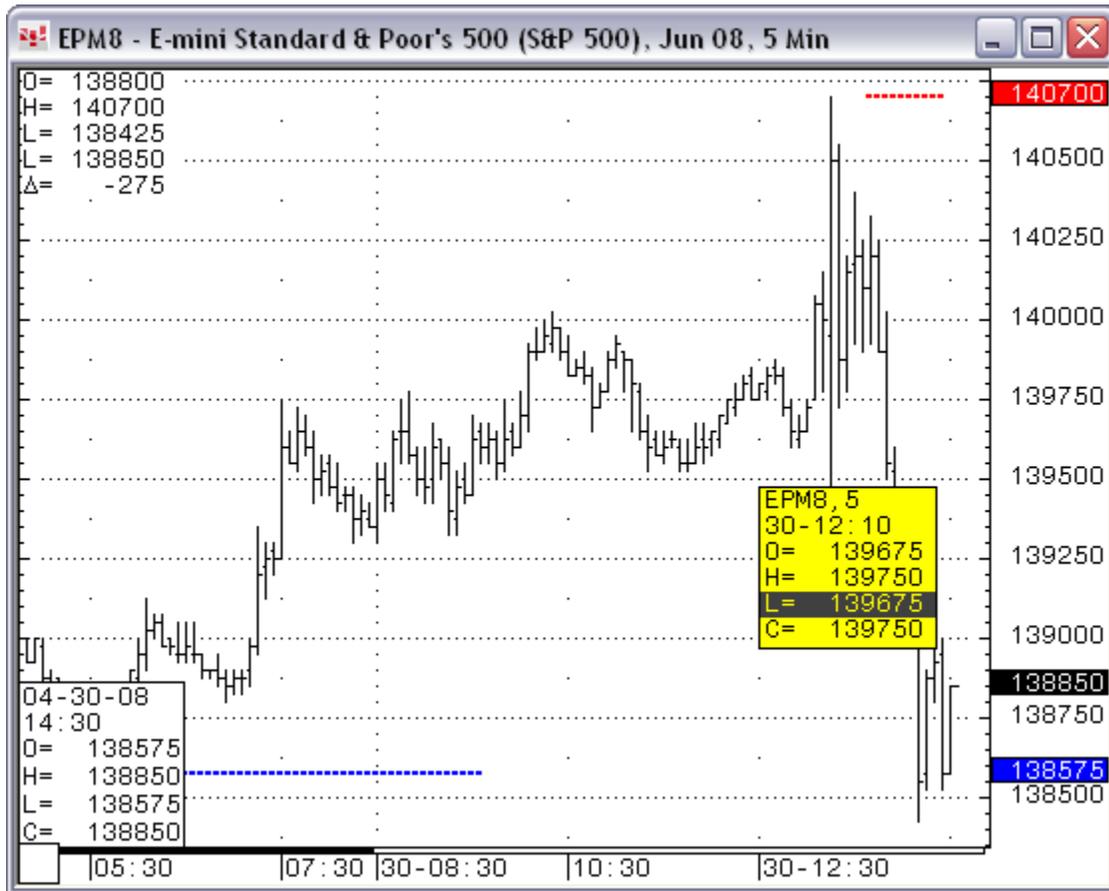
The horizontal bars, called trigger strength bars, indicate strong buy or sell trends. If the trigger strength bar appears on top, the signal indicates the market is trending up strongly, and you should consider buy opportunities. Likewise, if the trigger strength indicator is on the bottom, the signal indicates the market is trending down strongly, and you should consider sell opportunities.

Trigger Parameters

Parameters are:

- [Display](#)
- [OB/OS](#)

Umbrella (atmUmb)



The ATM Umbrella study attempts to identify where the market has changed direction and the point where the market cannot trade past if your entry is valid.

Umbrella Parameters

Parameters are selected on the [Display](#) window.

First Step/Next Step

To find out more about these Bill Champions studies, please call CQG Customer Support at 1-800-525-1085.

- FS Price Shock
- FS Reversal Price
- FS Time Shock
- NS BB Composite
- NS Bull-Bear
- NS CDI Composite
- NS Channel Direction Indicator
- NS Head Action Line
- NS Keltner
- NS MA Composite
- NS PTL Composite
- NS Price Trend Line
- NS RD Composite
- NS RD2 Composite
- NS Rally/Decline
- NS Rally/Decline 2
- NS Tail Action Line
- NS Track

DiNapoli Studies

The DiNapoli studies are leading indicators designed to produce high accuracy entry, exit, and stop placement price points.

Due to the derivation of these points, many are not commonly known or used by traders. CQG has provided a platform that allows for a fully automated presentation of these studies in a particularly user-friendly interface.

CQG provides all the necessary studies in its non-proprietary technical arsenal to employ properly the recommended context without the necessity of creating additional complicated formulas. The experienced trader who is comfortable with his own directional techniques can use the DiNapoli group of studies to sharpen entry and exit points.

Leading indicators show a trader where support and resistance is likely to manifest before the market gets there. The trader, using these studies, typically will buy dips in an advancing market or sell rallies in a declining market. He also will employ pre-calculated Profit Objectives and stop placement points.

While these levels are all generated from the studies, the developer recommends that they be used in an appropriate manner and in an appropriate context.

The complete use and implementation of these studies is shown in [Trading with DiNapoli Levels: The Practical Application of Fibonacci Ratios to Investment Markets](#) available through Coast Investment Software on their Web site www.fibtrader.com or by calling (941) 346-3801.

DiNapoli Retracement, DiNapoli Expansion, DiNapoli Oscillator Predictor, and D-Level are trademarks of Coast Investment Software, Inc.

Studies include:

[Expansion](#)

[Oscillator Predictor](#)

[Retracement](#)

Considerations Using D-Level Retracement and Expansion Studies

The biggest technical challenges in applying D-level analysis to market trading situations has been twofold:

- Staying organized and keeping up with current market action.
- A clear and useful presentation of the pertinent data as market action unfolds.

On time frame charts above 30 minutes these issues are not as challenging as they are on charts below 30 minutes. CQG programming efforts have gone a long way towards solving both issues. At this writing, CQG offers the best solutions available, including our own software package FibNodes™.

In an effort to help you to achieve the maximum benefit from these studies, hints are suggested below. These hints are in no way designed to teach you how to apply these studies to market action, rather to help you make the most of the CQG software as it is designed at this writing, pertaining to D-level studies.

Hints from Joe DiNapoli:

- For clarity, I suggest as a minimum a 17-inch monitor, flat screen with a dot pitch of .26 or less.
- The bars need to be dimmed so that you can see the FibNodes, which due to programming issues, are sometimes written over the chart itself. I have chosen a dark gray color for the bar chart.
- Strong, clear, colors should be chosen as defaults for the FibNodes, again for clarity. I use red for the .382 Node and purple for the .618 Node.
- Another benefit follows, namely: different colored Nodes in close proximity easily identify Confluence.
- I suggest a bold font, 10 points or larger. If you are using the studies on stocks, you will need to choose CQG Small or CQG Swiss, because those fonts are the only fonts supporting fractional conversions (1/8, etc.). You also have the option of thickening the line, representing the FibNode location. I suggest .025.
- Use different pages for different time frames so that you can keep organized. At any given time I am likely to have several pages of D-Level studies for each instrument I follow.
- I might use daily and weekly files for items I am trading long-term. But for intra-day trading the S&P, the power and utility of the software allow you to have 60-minute Nodes (FibNodes), 30-minute Nodes, as well as 5-minute Nodes. It all depends on the time frame you chose to trade.
- If Nodes become cluttered, use the horizontal stretch button to open things up, so that you can keep the picture clear. The software is written so it does not overwrite the value of one Node on top of another. Therefore, if Nodes are close and the chart is not stretched horizontally, you may lose pertinent information.
- Be sure real time is checked so that your Nodes will automatically update and reflect current market action.
- Although program defaults have been set by CQG to reflect the above suggestions, it may be best to check them

Retracement (DNRetr)

DiNapoli Retracement and Expansion studies are derived from an advanced and independently developed form of Fibonacci analysis. To create a DiNapoli retracement series, select a Focus Number and a group of Reaction Numbers from a bar chart. Retracement levels (FibNodes™), along with Lineage (semicircular) markings are shown and automatically updated as the market moves forward in real time. Lineage Markings are particularly important to the trader as they aid in identifying areas of support and resistance that are particularly strong. They also can be used to identify areas of potential support and resistance of which most speculators are unaware, using standard Fibonacci techniques.

Properly assessing combinations of both the Expansion and the Retracement levels further enhances the accuracy of this approach.

To place DiNapoli Retracement on a chart

1. Click an initial point on a chart, the **Focus Number**.
2. Drag the mouse to an appropriate earlier point on the chart, reaction 1.
3. Select that point.
4. Click on earlier **Reaction Points** on the chart.
5. Double click on the same **Reaction** to place the last reaction in the **Retracement Series**.

You can indicate Lineage designation characters (*, T, M etc.) to accompany retracement values by:

Clicking on a specific Lineage designation character that appears in a pop-up window next to the mouse pointer, once a Reaction is selected.

If a Lineage designation character is selected for the last Reaction in a series, it must be selected prior to the final (second) click.

A standard set of Lineage designation characters has been provided in the pop-up window. These characters may not be changed, but the user may replace any specific lineage designation on a bar chart, with a character or word of his choice.

To change a Lineage designation to a nonstandard character or word

1. Right-click any portion of the study (**Lineage markings** or **FibNodes**).
2. Select modify study parameters.
3. Click a label box, and type a character or word in the box.
4. Click **OK**.

Retracement Parameters

Parameters are:

- [Display](#)
- **Font:** Select a font for the study.
- **Date:** Indicates the date where the points are placed.
- **Time:** Indicates the time (for intra-day bars) where the points are placed.
- **Label:** Select Lineage characters for a given FibNode.
- **RealTime:** Select real time updating of FibNodes.
- **LineageRight:** Select position of Lineage markings.
- **MarkCenter:** Select the placement of the FibNodes study.
- **Alignment:** Select Current, Focus, or Reaction.

Expansion (DNExp)

COG calculates and displays on the chart three Expansions or Profit Objectives. The three Expansion levels are referred to by the following abbreviations:

- OP Objective Point
- COP Contacted Objective Point
- XOP Extended Objective Point

To place a DiNapoli Expansion Study on a chart

1. Select **DiNapoli Expansion** tool.
2. Select an appropriate A-B-C price swing by clicking at three price levels on a chart.

Properly assessing combinations of both the Expansion and Retracement levels further enhances the accuracy of this approach.

Expansion Parameters

Parameters are:

- [Display](#)
- **Font:** Select a font for the study.
- **Value:** Displays user-selected open, high, low or close. The study is designed to snap to this value.
- **Date:** Indicates the dates where the points are placed.
- **Time:** Indicates the time (for intra-day bars) where the points are placed.

Oscillator Predictor (DNOscP)

The Oscillator Predictor is a derivative of a Detrended Oscillator. Through a set of parametric equations, a predicting oscillator is created that forecasts, one period ahead of time, overbought and oversold conditions.

The resulting predictor values are expressed as bands on the bar chart, both above and below the market.

If desired, you can show the detrended oscillator from which they are derived below the chart by setting up a standard oscillator study (OSC) using the same *Period* parameters as used in the Oscillator Predictor. The Predictor bands may be used in a variety of ways to aid in entering and exiting the market.

Although Joe DiNapoli recommends that the study be created from daily data, the resulting levels can be particularly useful for intra-day trading. The flexibility afforded by CQG programming of this study opens many interesting avenues of research.

Oscillator Predictor Parameters

Parameters are:

- [Display](#)
- **Period:** Selects the value of the Moving Averages from which the Detrended Oscillator is created.
- **PeakStrength:** The number of values on either side of a high (low) that must be lower (higher) in order for the high (low) to qualify as a peak (trough).
- **Price:** Selects the value of the bar from which the oscillator is created.
- **Lookback:** Selects the total number of bars the study evaluates for peak selection.
- **Samples:** Selects the number of peaks the study evaluates for overbought-oversold analysis.
- **OB/OS Level:** Selects the percentage value of average OB/OS used to calculate the predictor OB/OS levels.
- **Custom Levels:** When this box is checked the predictor is calculated based on the values specified in Custom OB and Custom OS fields, instead of based on a percentage of average OB/OS.
- **Custom OB:** Selects a user-preferred value for overbought.
- **Custom OS:** Selects a user-preferred value for oversold.

Profitunity Studies

Since trending markets represent the greatest potential for profitable trading, being invested during those times is crucial. The 5-dimensional approach of Bill Williams' Profitunity System tries to accomplish this goal:

- Fractal Trade
- Balance Line
- Awesome Oscillator
- Accelerator/Decelerator Oscillator
- Zone Trade

Additionally, Williams uses a unique Alligator formation to indicate when markets are trending.

CQG offers two packages of Profitunity studies:

- [BW AC](#)
- [BW AO](#)
- [BW All Studies](#)
- [BW Alligator](#)
- [BW Balance Line](#)
- [BW Fractal](#)
- [BW Zone Trade](#)
- [Alligator](#)
- [Awesome Oscillator](#)
- [Blue Light](#)
- [Fractal](#)
- [Super Awesome Oscillator](#)
- [Wise Man](#)

This document does not provide instructions for how to use the studies. It describes how to set up the mechanics of the studies and the parameters.

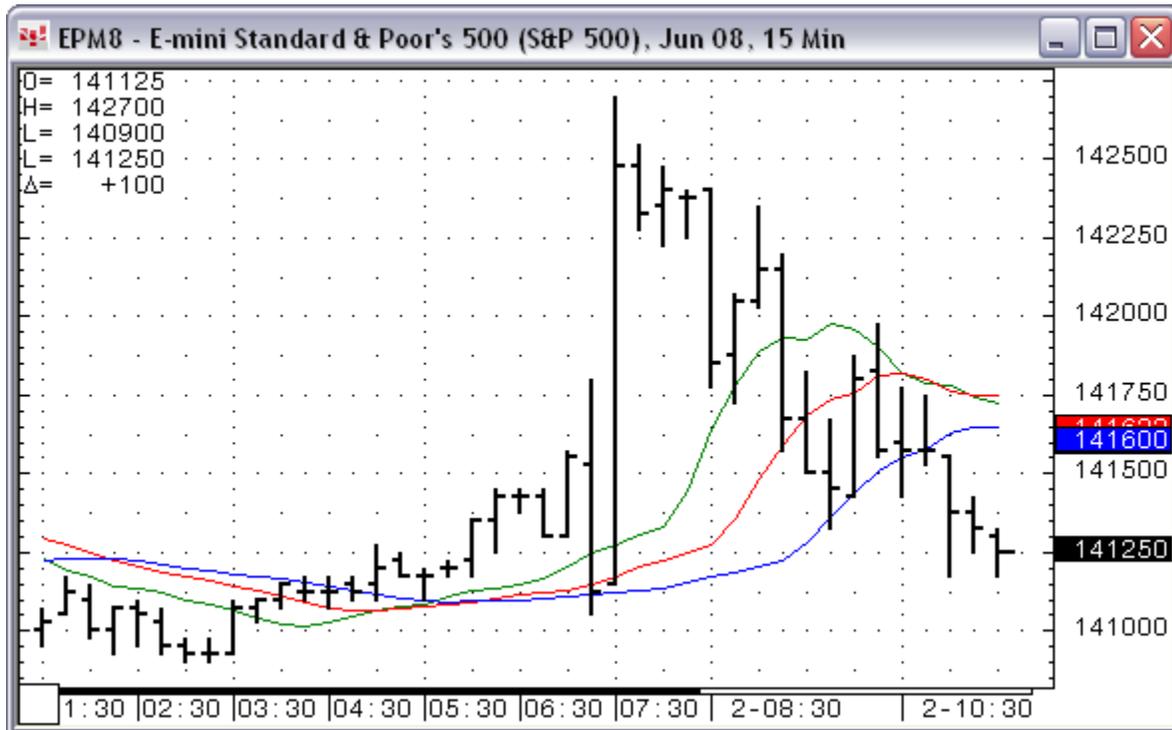
The Profitunity Trading Group says, "The Profitunity trading methodology is not meant to be a 'black box' system." Therefore, it is highly recommended that you refer to:

Williams, Bill. New Trading Dimensions: How to Profit from Chaos. John Wiley & Sons, 1998.

Williams, Bill and Justine-Gregory Williams. Trading Chaos. John Wiley & Sons, 2004.

You can also go to www.profitunity.com to learn more about these studies and how to use them.

Alligator (Gator)



The alligator is:

- An integrated approach to monitoring the market's momentum
- A simple indicator to trade only with the current trend
- A protection device to not lose money during a nontrending market
- An advanced indicator to signal the end of a current trend.

The Alligator helps traders get into the market on a real trend and stay out during the range-bound trading which eats away at profits.

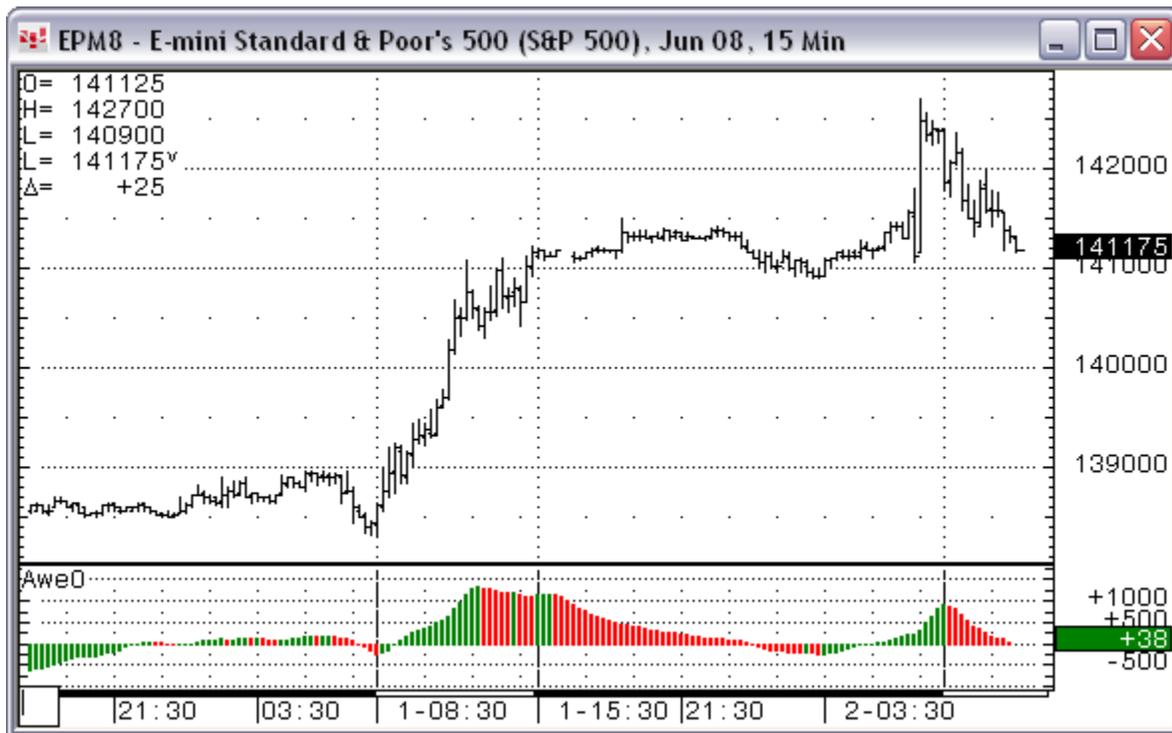
The Alligator is a combination of Balance Lines, using fractal geometry and non-linear dynamics. The blue line (Alligator's jaw) on the chart is the Balance Line for the time frame displayed. The red line (Alligator's teeth) is the Balance Line for one significant time frame later than what is shown on the chart. The green line (Alligator's lips) is the Balance Line for the second significant time frame later.

The Alligator's lips, teeth and jaw show the interaction of the various time frames. Since markets trend only about 20 % of the time, traders want to go with the trends, staying out of range bound markets, as represented by the intertwining of the three lines.

Alligator Parameters

Parameters are selected on the [Display](#) window.

Awesome Oscillator (AweO)



The Awesome Oscillator measures the immediate momentum of the past 5 price bars compared to the momentum of the last 34 bars.

It is a 34-bar simple moving average of the bar's midpoints $(H/L)/2$ subtracted from a 5-bar simple moving average of the midpoints $(H-L)/2$, plotted in a histogram form.

The OA tells exactly what is happening with the current momentum.

Basically, it is a 34-bar simple moving average that is subtracted from a 5-bar simple moving average.

Awesome Oscillator Parameters

Parameters are selected on the [Display](#) window.

BW Fractal (BWFrc1)

The Fractal Breakout is the least aggressive of the five Bill Williams indicators. It encompasses a series of market moves and is often used to confirm a buy or sell signal. The first move outlined by the system occurs when a market has made a new high or low. Next, the market reverses and retreats to prior levels. Finally, the market trades out of its old range again, this time even farther.

The system suggests that traders put on positions immediately, if the market moves beyond the most recent fractal, with a buy stop entered one tick beyond the fractal. Additionally, if the market forms another fractal in the same direction as their current position, the system recommends that traders aggressively increase their positions.

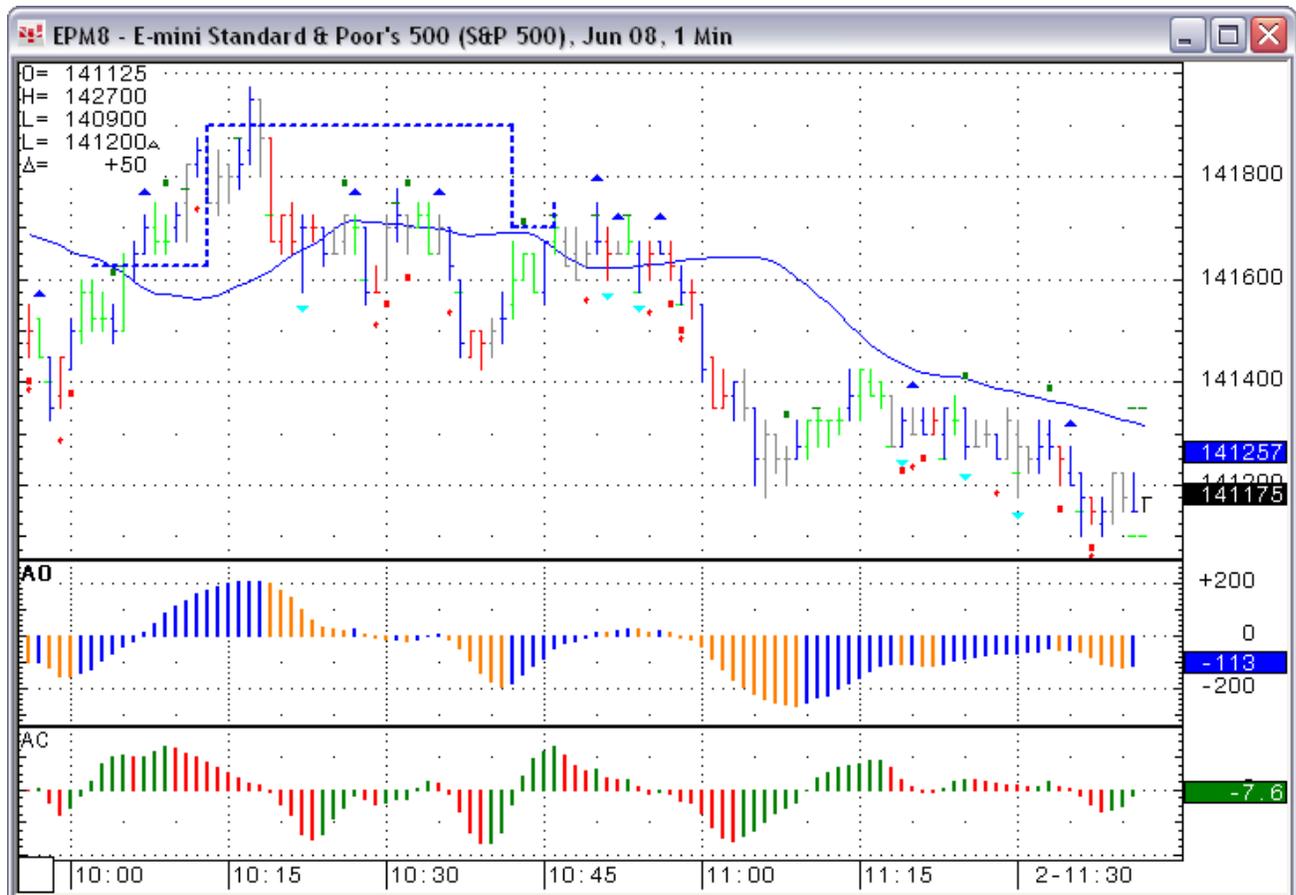
BW Fractal Parameters

Parameters are:

- [Display](#)
- **Leverage:** Indicates 2 fractals in the opposite direction. If checked, signals will appear less often. Specifically, they will not be indicated if the leverage line is broken.
- **LeftLevel:** Used to determine how many consecutive highs lower than the high for the current bar should occur before placing an indicator on the chart. Highs equal to the current high are not included. If Leverage is checked, then the highs should be greater than or equal to the nearest RightLevel low.
- **RightLevel:** Used to determine how many consecutive lows higher than the low for the current bar should occur before placing an indicator on the chart. If Leverage is checked, then the lows should be less than or equal to the nearest LeftLevel high.

BW All Studies (BWAII)

Applies all Profitunity studies to a chart.



BW Balance Line (BWBL)

The Balance Line represents the price that would prevail, if no new information, such as government, weather or press reports, came into the market. Balance Line signals are used along with Fractal signals.

Balance Line signals consist of three parts. The blue line running across the bars represents a smoothed moving average, offset into the future. The red and green lines are constructed similarly, using shorter time frames, so they respond quicker to changing market conditions. Since the market typically moves with less effort going away from the Balance Line, rather than toward it, traders should enter quickly and more aggressively when the market is moving away from the Balance Line.

BW Balance Line Parameters

Parameters are:

- [Display](#)
- [MarkIt](#)
- **Hits Only:** If checked, only the signal hits that fall on a bar will be displayed.
- **Zones:** If checked, buy signals will become more conservative in the red zone, and sell signals will become more conservative in the green zone.
- **Squat:** Represents explosive situations where smaller bar ranges accompany increasing volume. In other words, the Market Facilitations Index (Range/Volume) is increasing. Values are **none**, **tick** (used for charts with bars shorter than daily), and **vol** (used for charts with bars of daily or longer).

BW AO (BWAO)

Investors can use all of the Bill Williams indicators to trade both stocks and futures. Price is the last thing to change in the markets. Momentum changes before price, speed changes before momentum, volume changes before speed, and traders and investors making decisions change first.

Bill Williams' Awesome Oscillator measures the momentum of the immediately preceding bars, compared to the momentum of the last several bars. This paradigm takes a simple moving average of the midpoints of the more recent bars and subtracts a simple moving average of the midpoints of the greater number of bars.

A second element of the Awesome Oscillator is the squat bars indicator which tries to indicate particularly strong market moves. This indicator can be turned on or off.

BW AO Parameters

Parameters are:

- [Display](#)
- **Zones:** If checked, buy signals will become more conservative in the red zone, and sell signals will become more conservative in the green zone.
- **Squat:** Represents explosive situations where smaller bar ranges accompany increasing volume. In other words, the Market Facilitations Index (Range/Volume) is increasing. Values are **none**, **tick** (used for charts with bars shorter than daily), and **vol** (used for charts with bars of daily or longer).

BW AC (BWAC)

The Accelerator Oscillator is the fourth dimension of the Profitunity system.

The AC Oscillator is a simple moving average of the difference between the AO Oscillator and a moving average of the AO. On the price chart, this represents a change in the speed of a trend. From a physics standpoint, the instant momentum starts to slow down, it is actually accelerating in the opposite direction.

The BWAC study postulates that price is the last market element to change. Before the price changes, momentum changes, and before momentum changes direction, there must be a deceleration until momentum comes to zero. Next, momentum must accelerate in the opposite way before price can change direction. Therefore, using the BWAC as an early warning signal may give you an advantage over other traders.

AC+ measures the acceleration in upward momentum and AC- measures the acceleration in downward momentum.

BW AC Parameters

Parameters are:

- [Display](#)
- **Zones:** If checked, buy signals will become more conservative in the red zone, and sell signals will become more conservative in the green zone.
- **Squat:** Represents explosive situations where smaller bar ranges accompany increasing volume. In other words, the Market Facilitations Index (Range/Volume) is increasing. Values are **none**, **tick** (used for charts with bars shorter than daily), and **vol** (used for charts with bars of daily or longer).

BW Zone Trade (BWZT)

The Zone Trade represents the fifth dimension of the Bill Williams indicators. It is designed to signal traders to add aggressively to a position whenever all the indicators (momentum, acceleration, and price) are pointing the same way.

The definition of a Zone is when both the momentum and the acceleration are moving in the same direction. In other words, not only is the momentum moving in a certain direction, but it is also accelerating.

When both the AO and the AC are increasing, **CQG** colors the price bars green. When both of these oscillators are decreasing, the price bars are colored red. Otherwise, the price bars are gray.

When the current bar is green, the system suggests that traders buy aggressively, but only if the close of the next bar is higher than the close of the current bar. This is called a "stop close only" buy order.

Traders should continue to add to their position with each higher close, as long as the bar remains in the green zone. In a trending market, this will increase the value of their investment quite rapidly.

Likewise, traders should place a short entry stop when the current price bar is red, and the next bar's close is lower than the current bar's close.

Using the Zones to Capture Profits

Stock or commodity charts rarely exhibit more than 7 consecutive bars of the same color. This is because the market must breathe in and out. The market is generally bullish during green bars, bearish during red bars and undecided during gray bars.

This characteristic allows traders to use the zone bars as a "profit capturing" technique. For example, once we have 5 consecutive green bars (no grays or reds), traders should move profit protecting stops to one tick below the low of the 5th green bar. If the next bar's low is higher, exit stops should be raised to one tick less than that bar. Traders should continue to raise their stops until the market takes out the position on the highest low.

Do the opposite in a downward market, indicated by 5 consecutive red bars.

Using the Zone indicator takes some of the anxiety out of trading, by telling traders when to be aggressive and when to take profits.

Remember: This is a stop to take profits and get out. It is not a stop and reverse signal.

BW Zone Trade Parameters

Parameters are selected on the [Display](#) window.

BW Alligator (Gator)

Bill Williams believes that the market trends only around 20% of the time, and traders who are not on the floor make nearly all of their profits in a trending move, rather than wasting time and money entering and exiting a market that is going nowhere. The Alligator helps traders get into the market on a real trend and stay out during the range-bound trading which eats away at profits.

Basically, the Alligator is a combination of Balance Lines, using fractal geometry and non-linear dynamics. The blue line (Alligator's jaw) on the chart is the Balance Line for the time frame displayed. The red line (Alligator's teeth) is the Balance Line for one significant time frame later than what is shown on the chart. The green line (Alligator's lips) is the Balance Line for the second significant time frame later.

The Alligator's lips, teeth and jaw show the interaction of the various time frames. Since markets trend only about 20 % of the time, traders want to go with the trends, staying out of range bound markets, as represented by the intertwining of the three lines.

BW Alligator Parameters

Parameters are selected on the [Display](#) window.

Blue Light (BluLite)

The Blue Light study is frequently used in conjunction with the Super Awesome Oscillator (Super AO) study.

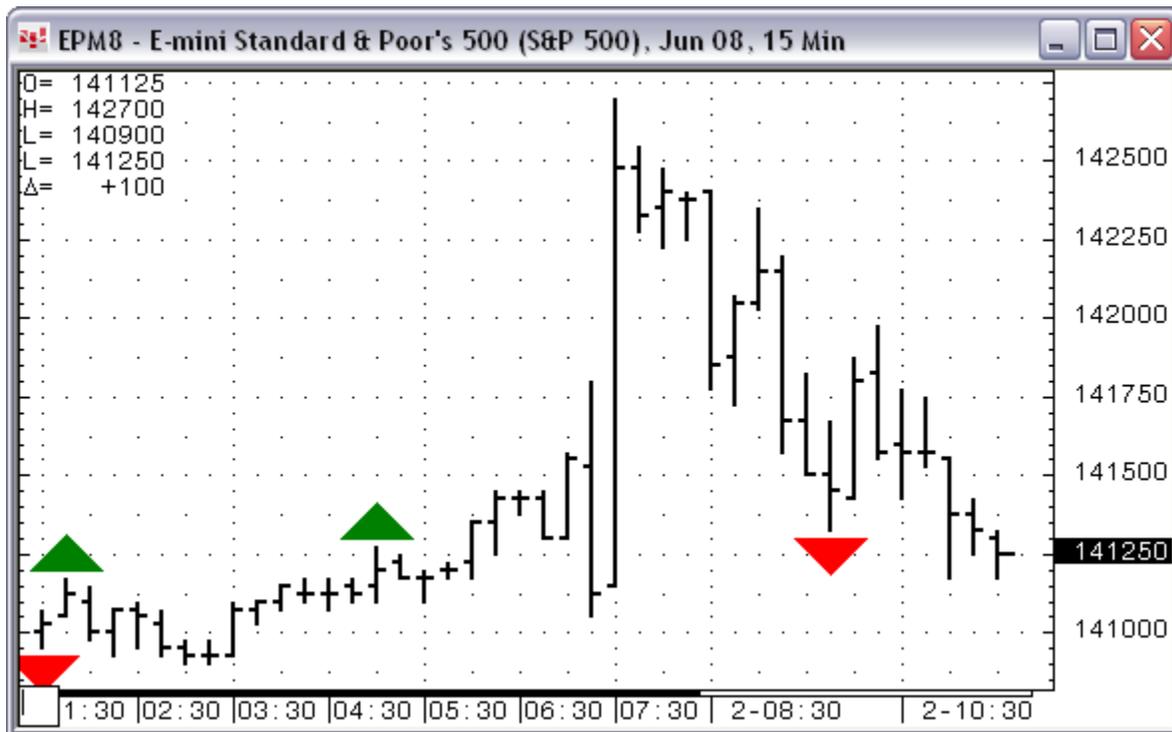
Like the Blue Light sales at the famous discount store, the Blue Light Study represents "bargain" in the market. The term is borrowed from department stores that put on special sales for a short period of time for the people who happen to be in the store at that time.

The market gives those who are watching the market closely a chance to sell at a higher price than the first signal, for example, a signal from the Super AO.

Blue Light Parameters

Parameters are selected on the [Display](#) window.

Fractal (FrctI)



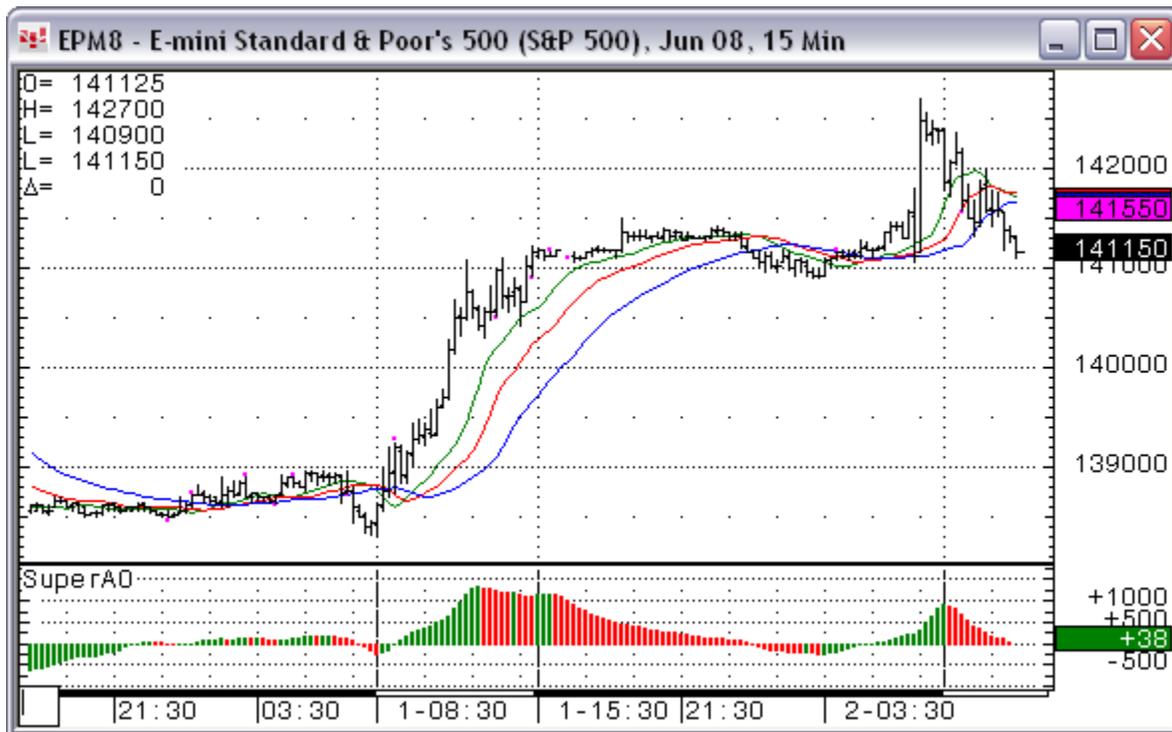
The Fractal Breakout is the least aggressive of the five Bill Williams indicators. It encompasses a series of market moves and is often used to confirm a buy or sell signal. The first move outlined by the system occurs when a market has made a new high or low. Next, the market reverses and retreats to prior levels. Finally, the market trades out of its old range again, this time even farther.

The system suggests that traders put on positions immediately, if the market moves beyond the most recent fractal, with a buy stop entered one tick beyond the fractal. Additionally, if the market forms another fractal in the same direction as their current position, the system recommends that traders aggressively increase their positions.

Fractal Parameters

Please see "[BW Fractal Parameters](#)" on page 480. Fractal parameters are a particular case of BW Fractal parameters where Leverage is automatically and permanently off and the **Level** value applies to both the LeftLevel and RightLevel, so that they are always of equal value.

Super Awesome Oscillator (SuperAO)



The Super Awesome Oscillator is a signal based on the Awesome Oscillator.

Super Awesome Oscillator Parameters

Parameters are:

- [Display](#)
- **Squat**: Represents explosive situations where smaller bar ranges accompany increasing volume. In other words, the Market Facilitations Index (Range/Volume) is increasing. Values are **none**, **tick** (used for charts with bars shorter than daily), and **vol** (used for charts with bars of daily or longer).

Wise Man (Wise)



The Wise Man Study in COG is described in the chapter "The First Wise Man" in Trading Chaos.

Wise Man Parameters

Parameters are:

- [Display](#)
- **Squat**: Represents explosive situations where smaller bar ranges accompany increasing volume. In other words, the Market Facilitations Index (Range/Volume) is increasing. Values are **none**, **tick** (used for charts with bars shorter than daily), and **vol** (used for charts with bars of daily or longer).
- **All Fractals**: Click the check box to display.

Shaun Downey Studies

Benefit from Shaun Downey's three decades of trading experience across all financial markets.

In 2007, Downey published his book, [Trading Time](#), to great praise within the industry. These twenty-nine proprietary studies based on his work analyze time by referencing each part of the day to its previous behavior at similar periods. In this way, Shaun has created a true measure of momentum, allowing for fixed reference points that understand normal and unusual behavior in multiple time frames at the same time. Traders no longer have to wait for the current bar to finish before implementing trades, as many of the studies reference the opening price, and not the close, unlike many established momentum-based concepts.

His studies also help traders identify trends within their infancy, in time frames as low as 5 minutes, and how to ride the trend to its conclusion many months later.

Downey's studies also look at the various methods around Peak steps, which provides new concepts of swing theory, trailing stops, when trend corrections are due, and when the trend is strong and needs to correct but will restart. Traders can quantify swing patterns by connecting them with time, range, and volume.

For a more detailed description of these studies, go to the CQG Web site at http://www.cqg.com/Docs/Trading_Time.pdf.

HiLoCount (HiLoCnt)



Philosophy

Analysis through thousands of instruments across all timeframes over the years via CQG's Entry Signal Evaluator, revealed some very consistent patterns in terms of how long trends can last before they enter their first correction, how long that correction typically lasts, before the most difficult part, which is whether the trend will restart. Part of understanding this process was to assess how long it takes before a swing pattern or Peak forms in that trend. HiLoCount measures the number of bars between changes to Peak points on those typically above the market (HiCount), and those typically below the market (LoCount).

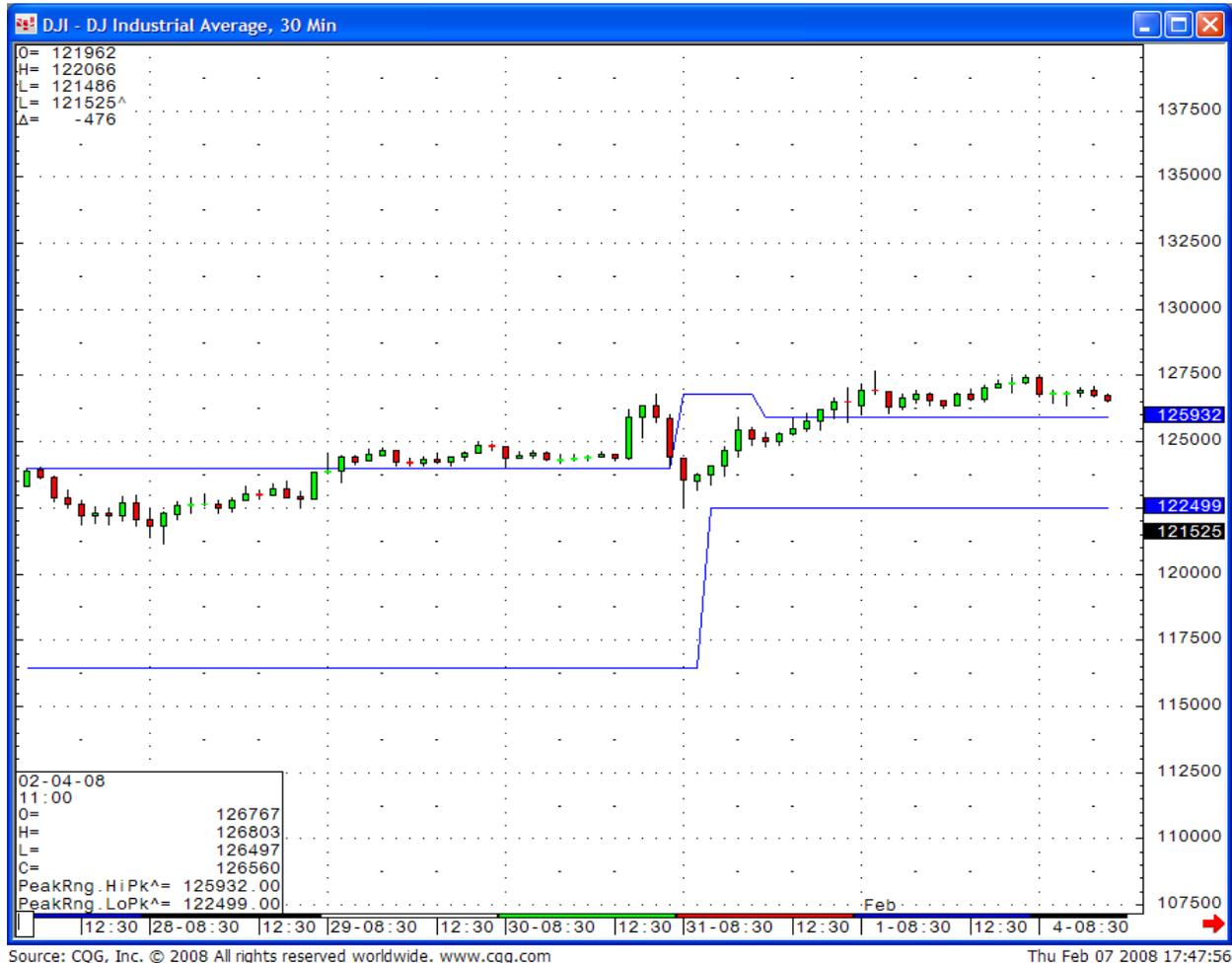
Interpretation

The basic interpretation is in regard to setting thresholds for how long trends can extend without a change in a Peak value (see page 190 and 214 of Trading Time). This threshold is set at 15 bars whatever the market or timeframe. At this point the trend is strong, but a correction is due. The further the Count goes beyond 15, the stronger that initial impulse and the increased likelihood that subsequent to that correction (typically lasting one third of the previous count number), an attack will be made on the previous trend extreme. This is particularly true on short term charts and is useful for day trading purposes. If a trend is already developed when the Count goes beyond 15 this is more likely to signal an exhaustion point in the trend.

HiLoCnt Parameters

Name	Default	Definition
Display	Both	This sets whether both studies or just a user defined study will appear.
LLev	2	Qualifies how many bars are to the left of the mid point.
RLev	2	Qualifies how many bars are to the right of the mid point.

Peak Range (PeakRng)



Philosophy

Analysis through thousands of instruments across all timeframes over the years via CQG's Entry Signal Evaluator, revealed some very consistent patterns in terms of how long trends can last before they enter their first correction, how long that correction typically lasts, before the most difficult part, which is whether the trend will restart. Part of understanding this process was to assess how long it takes before a swing pattern or Peak forms in that trend.

Peak range was originally developed to overcome the problem of using the normal peak study as a trailing stop on Fx systems on short term charts. Trades would often get stopped out as a Peak level was breached on a closing basis, when in fact there had been little activity to justify such an exit. This typically occurred in the Asian time zone. Therefore Peak Range was developed to ignore a change in a normal peak value if it did not reach a certain criteria. **The difference between the range based Peak and normal Peak is the fact that Peak points are qualified by an expansion of range over and above a user defined long term average of Range at Peak points. This is normally set at least 1.25 times normal range (See page 227 of Trading Time).**

Interpretation

The thresholds for this study vary considerably from the standard Peak, in that Peak can go for an extended period without changing value. This is normally true when a trend is beginning as nobody knows it's a new trend and ranges are more condensed than the long term average of range. However, when trends develop and go beyond the normal trend cycle (65 bars), more rapid changes in Peak Range should be evident as range expands on any corrections to that trend. The trend has ended when price closes beyond the Peak Range level.

PeakRng Parameters

[Display Parameters](#)

Name	Default	Definition
LLev	2	Qualifies how many bars are to the left of the mid point.
RLev	2	Qualifies how many bars are to the right of the mid point.
Mult	1.5	Qualifies the threshold for expansion of Range to trigger a change in the study value.
Len	250	Qualifies how many bars that lookback period is to compare Range.

Peak Range HiLoCount (PRHLCnt)



Philosophy

Analysis through thousands of instruments across all timeframes over the years via CQG's Entry Signal Evaluator, revealed some very consistent patterns in terms of how long trends can last before they enter their first correction, how long that correction typically lasts, before the most difficult part, which is whether the trend will restart. Part of understanding this process was to assess how long it takes before a swing pattern or Peak forms in that trend. Peak Range HiLoCount measures the number of bars between changes to Peak points of those typically above the market (HiCount) and those typically below the market (LoCount). **The difference between the range based Peak and normal Peak, is the fact that Peak points are qualified by an expansion of range over and above a user defined long term average of Range at Peak points. This is normally set at least 1.25 times the normal range** (See page 227 of [Trading Time](#)).

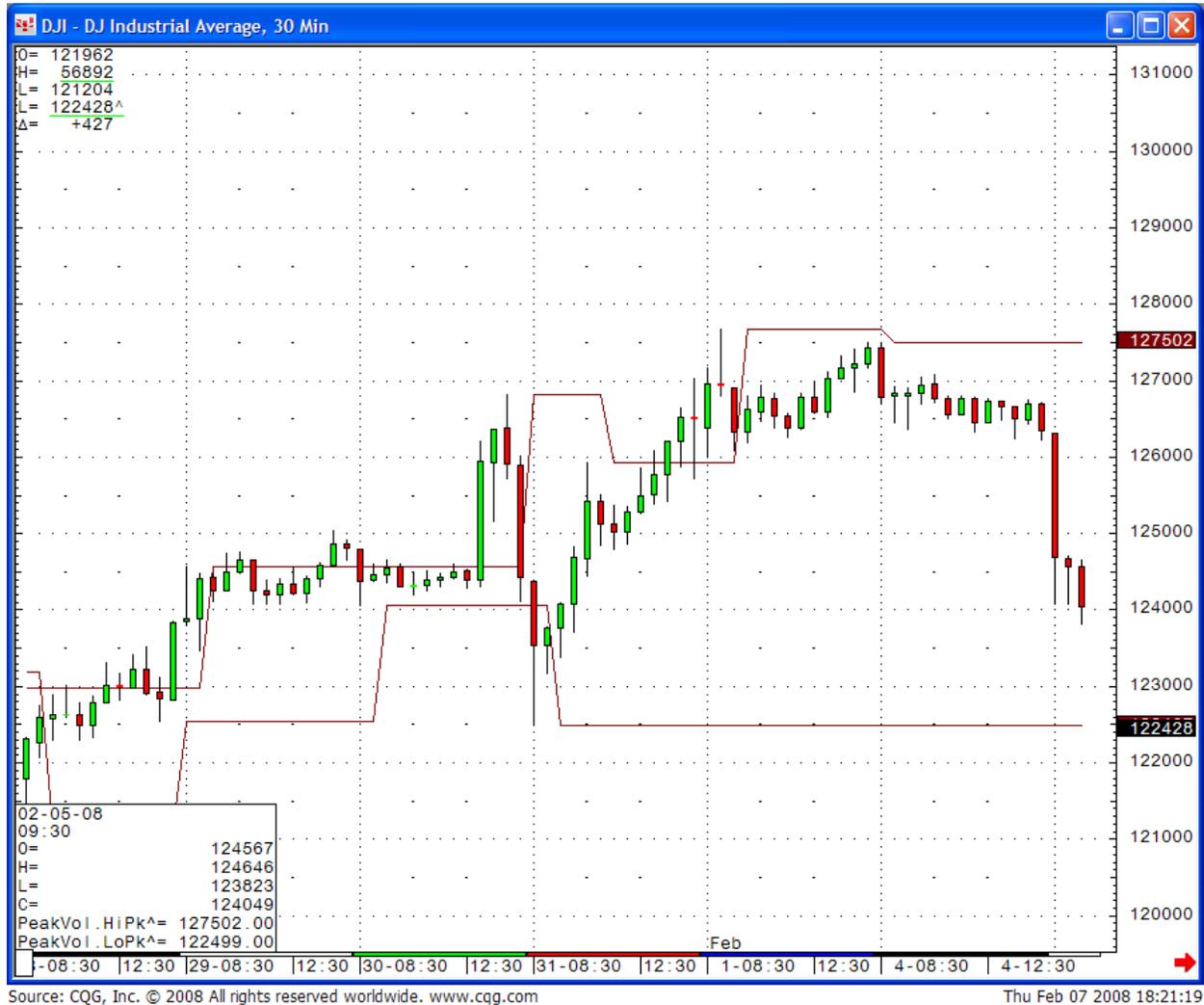
Interpretation

The thresholds for this study vary considerably from the standard HiLoCount, in that Peak Range HiLoCount can go for an extended period without changing value. This is normally true when a trend is beginning as nobody knows it's a new trend and ranges are more condensed than the long term average of range. However, when trends develop and go beyond the normal trend cycle (65 bars), more rapid changes in Peak Range HiLoCount should be evident as range expands on any corrections to that trend.

PRHLCnt Parameters

Name	Default	Definition
Display	Both	This sets whether both studies or just a user defined study will appear.
LLev	2	Qualifies how many bars are to the left of the mid point.
RLev	2	Qualifies how many bars are to the right of the mid point.
Mult	1.5	Qualifies the threshold for expansion of range so trigger a change in the Count.
Len	250	Qualifies how many bars that lookback period is to compare range.

Peak Volume (PeakVol)



Philosophy

Analysis through thousands of instruments across all timeframes over the years via CQG's Entry Signal Evaluator, revealed some very consistent patterns in terms of how long trends can last before they enter their first correction, how long that correction typically lasts, before the most difficult part, which is whether the trend will restart. Part of understanding this process was to assess how long it takes before a swing pattern or Peak forms in that trend.

Peak Volume has particular application to stocks to identify ends of trends when volume expands around correction points. **The difference between the Volume based Peak and normal Peak, is the fact that Peak points are qualified by an expansion of Volume over and above a user defined long term average of Volume at Peak points. This is normally set at least 1.25 times normal range (See page 230 of Trading Time).**

Interpretation

The thresholds for this study vary considerably from the standard Peak, in that Peak Vol can go for an extended period without changing value. This is normally true when a trend is beginning as nobody knows it's a new trend and volumes are relatively low compared to the long term average of volume. However, when trends develop and go beyond the normal trend cycle (65 bars), more rapid changes in Peak Volume should be evident as volume expands on any corrections to that trend. The trend has ended when price closes beyond the Peak Volume level.

PeakVol Parameters

[Display Parameters](#)

Name	Default	Definition
LLev	2	Qualifies how many bars are to the left of the mid point.
RLev	2	Qualifies how many bars are to the right of the mid point.
Mult	1.0	Qualifies the threshold for expansion of Volume to trigger a change in the Count and should be set beyond the default.
Len	250	Qualifies how many bars that lookback period is to compare Volume.

Peak Volume HiLoCount (PVHLCnt)



Philosophy

Analysis through thousands of instruments across all timeframes over the years via CQG's Entry Signal Evaluator, revealed some very consistent patterns in terms of how long trends can last before they enter their first correction, how long that correction typically lasts, before the most difficult part, which is whether the trend will restart. Part of understanding this process was to assess how long it takes before a swing pattern or Peak forms in that trend. Peak Volume HiLoCount measures the number of bars between changes to Peak points of those typically above the market (HiCount) and those typically below the market (LoCount). **The difference between the Volume based Peak and |normal Peak, is the fact that Peak points are qualified by an expansion of Volume over and above a user defined long term average of Volume at Peak points. This is normally set at least 1.25 times normal range (See page 230 of Trading Time).**

Interpretation

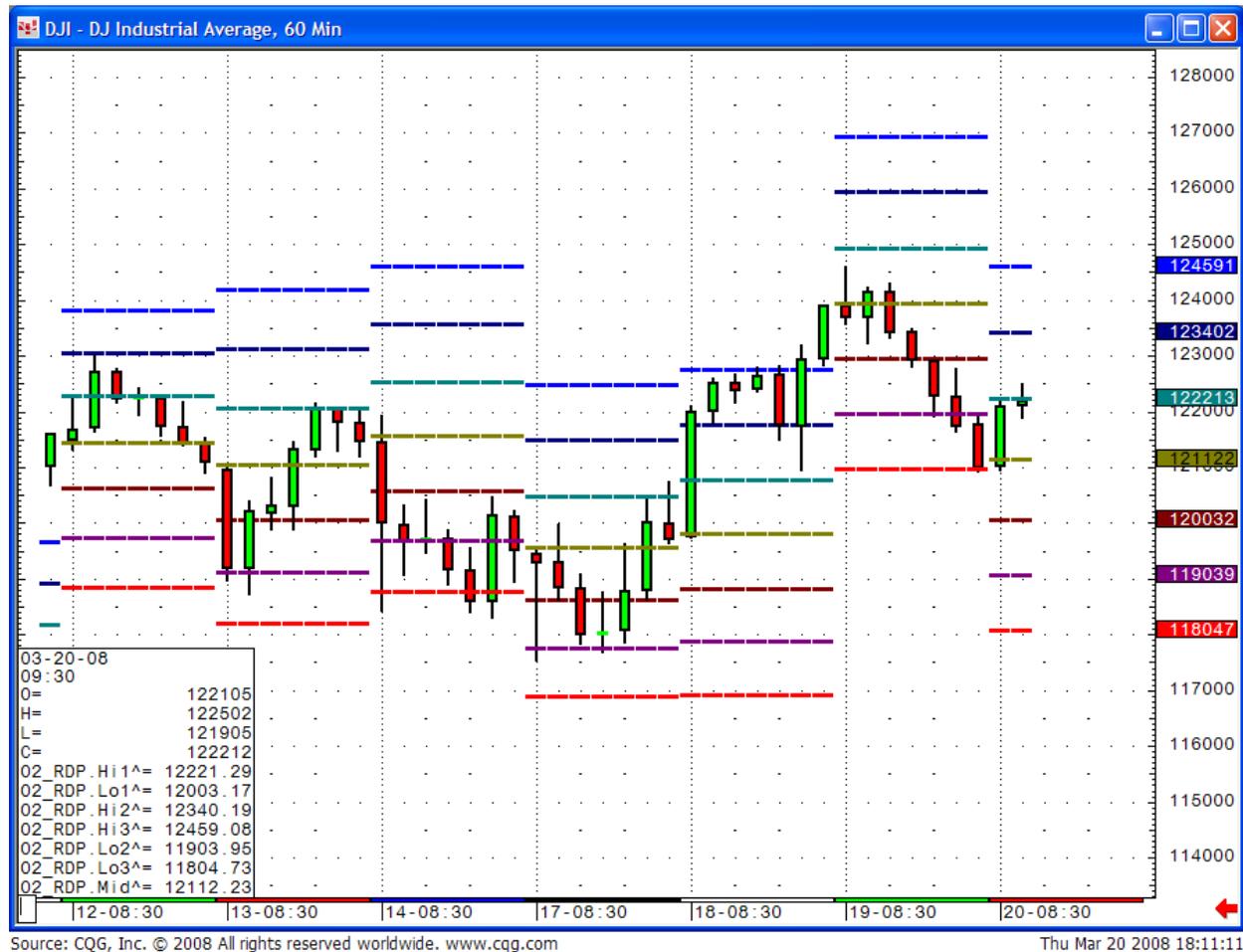
The thresholds for this study vary considerably from the standard HiLoCount, in that Peak Volume HiLoCount can go for an extended period without changing value. This study has its biggest application in individual stocks as it qualifies corrections or turning points by highlighting that volume is expanding. This is usually at its most powerful at trend endings. The beginnings of trends normally see the count stay flat. (see page 230 of Trading Time)

PVHLCnt Parameters

[Display Parameters](#)

Name	Default	Definition
LLev	2	Qualifies how many bars are to the left of the mid point.
RLev	2	Qualifies how many bars are to the right of the mid point.
Mult	1.0	Qualifies the threshold for expansion of Volume so trigger a change in the Count and should be set beyond the default.
Len	250	Qualifies how many bars that lookback period is to compare Volume.

Range Deviation Pivots (RDPivot)



This study looks at the range of a daily bar over a user-defined look back period and places 1, 2, and 3 standard deviations around the opening.

This study can be applied to:

- Intraday and daily bar chart
- Intraday and daily candlestick chart
- Intraday and daily Equalize Sessions chart
- Intraday and daily Fill Gap chart
- Intraday and daily Line chart
- Intraday and daily No Gap chart
- Intraday and daily TBTF chart
- Intraday and daily Yield chart

It appears on the chart as seven dashes. RDPLo1, RDPLo2, and RDPLo3 dashes reference 1, 2, 3 standard deviations below the opening price and RDPHi1, RDPHi2, RDPHi3 to 1, 2, 3 standard deviations over the opening price. RDPMidPoint dash corresponds to midpoint of RDPLo1 and RDPHi1. All dashes are overlaid.

You are able to turn off the display of RDPMidPoint dash.

Philosophy

Normal Pivot theory has inherent flaws in that they are often based on just the previous day or last few days price action, and then predict the limits of range or support and resistances points based on the daily bars value. This means that overnight gaps can make the values redundant. They also suffer from the fact that if yesterdays range is wide today's pivots will be wide, and narrow range days, (which are often ahead of heavy news days), mean that the pivots are narrow just when an expansion is due. The final flaw is the fact that the values are symmetrical and take no account of the dominant trend.

Range Deviation Pivots attempt overcome these problems in various ways. Firstly the computation of the three Pivot levels is set at 1 2 and 3 standard deviations around the opening price of today's daily bar. This means that any gap opening does not affect the reference points. Secondly, they use a user defined lookback period far longer than traditional pivots so are not affected by the more recent price action. Finally and most crucially, they have in built propriety algorithm that analyses the strength of trend and means that pivots above and below the opening are not necessarily symmetrical. If the trend is down then the pivots below the market will be wider apart from the ones above the market. This does two things. It allows the trend more room to develop and accelerate, and also tightens the risk parameters for what qualifies as a trend ending or reversing. (See page 44 of [Trading Time](#) and the Appendix for statistics on Stocks).

Interpretation

There are many applications to the Pivots which are explained in detail in [Trading Time](#). However, some basic uses involve pyramiding to existing trend following systems. Most pyramids are based on entering on the close which means that the risk is greater on the pyramid because if the trend is down the close is more likely to near the low of the day. As the pivots are based on the opening value there is a fixed level at which to pyramid at the 1st deviation up if in a downtrend. The more dynamic the trend the closer the 1st Deviation will be to do opening due to the in built skew for trending. Analysis of the vast majority of trend following systems show not only an increase in profitability, but more importantly, no decrease in the stability of the system results.

The next application involves the qualification of breakouts, especially in individual stocks. These can be linked to Bollinger Band confirmation or for qualifying reversal patterns such as TD Combo™ and TD Sequential™. This involves price closing beyond the 3rd Range Deviation or reversing from one side of the Pivots to the other side.

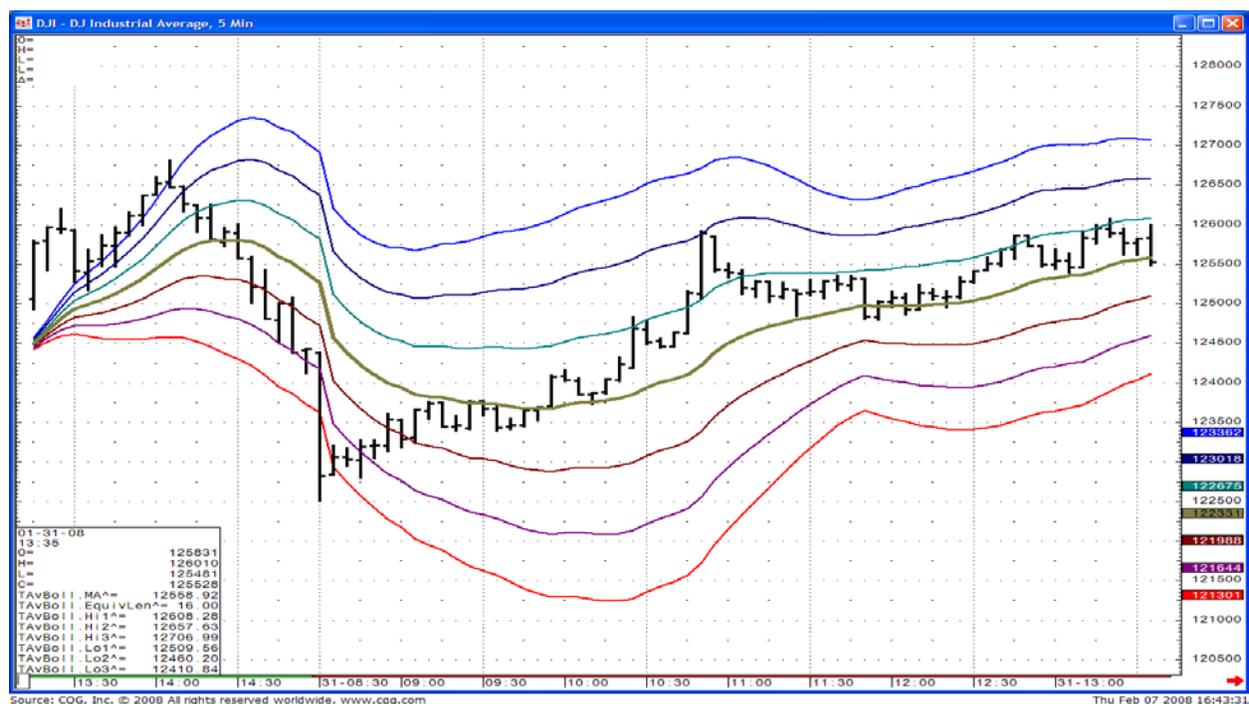
The next application involves the qualification of Pivot levels by the Volatility Time Bands. Hitting a range Deviation Pivot when at the 3rd deviation of the Volatility Time Bands on 30 or 60 minute charts qualifies short term profit taking points or aggressive contra trend trades.

Finally the appendix of [Trading Time](#) and www.i-traders.com show various tables that measure the probability of how many pivots can be touched in any one trading day. This has particular application in understand risk and expectation for day trading purposes.

RDPIVOT Parameters

Name	Default	Definition
Display	On	The ability to show the midpoint of the pivots.
Len	20	The number of bars that the calculation of range is computed.
StdMult1	1.0	The first pivots.
StdMult2	2.0	The second pivots.
StdMult3	3.0	The third pivots.

Time Average Bands (TAvBand)



This study looks at the current range of a bar for the time of day in relationship to the average of range. From that, it applies a moving average between the range of 3 and 21 depending on the relationship of the current range to the historical. It then places 1, 2, 3, and 4 standard deviations around the price.

This study can be applied to:

- Bar chart
- Candlestick chart
- Equalize Sessions chart
- Fill Gap chart
- Line chart
- TBTF chart
- Yield chart

The study appears on the chart as seven curves. TABMA, TABLo1, TABLo2, and TABLo3 curves reference to 1, 2, 3, and 4 standard deviations below the moving average and TABHi1, TABHi2, TABHi3, TABHi4 to 1, 2, 3, and 4 standard deviations over the moving average. All curves are overlaid.

Philosophy

Time Average Bands are only touched on briefly in Trading Time on Page 50, due to the fact that they had a scaling problem as a custom study. However, a more complete explanation and video is on www.i-traders.com.

Nearly all momentum based indicators look at momentum on a continuous basis and have no automatic adjustment for the time of day that it is, or what the normal behavior is at that time. Time Average Bands analyses both the time of day and its relationship to range. The study calculates the current time of days range in relationship to its user defined average of range, and from a propriety algorithm, creates a variable moving average depending on that relationship. The greater the range from the normalized range the lower the moving average and vice versa. The limits are set between a 3 period and 21 period. Based on this expansion or contraction, it takes another propriety algorithm and then places 1 and 2 and 3 standard deviations around the opening of the current bar if the offset is zero or the close if the offset is 1. This is so that the value on the current bar is fixed. **The lowest timeframe for computation is set at a 15 minute bar.**

Interpretation

Time Average Bands are only touched on briefly in [Trading Time](#) on Page 50, due to the fact that they had a scaling problem as a custom study. However, a more complete explanation and video is on www.i-traders.com.

The fact that the bands use standard deviations around a moving average is a similar concept to Bollinger Bands. However, by taking the relationship between range instead of close to close, plus the skew associated with a variable moving average that falls if range expands, means that whilst one of the primary uses of the bands is as a breakout method, there subsequent behavior having qualified that break is significantly different. The bands will expand by far more which means that there are rarely subsequent breakouts once that trend has developed. Often what is a breakout on Bollinger is simply a move to support or resistance in Volatility Time Bands which helps prevent false breakout trades. A breakout is defined as a close outside of the 3rd deviation.

Another critical difference is the fact that the bands value is fixed on the current bar when it opens or is offset forward if based on the close, which means that the trader can accurately assess what the true relationship has been between the bands and price, especially when looking at extremes of bars in relationship to the bands or breakouts. Additionally, breakout systems can be built by entering on stop instead of waiting for the close of the bar. This has particular use for day traders. This is done in one of two ways. If price is using the close to calculate then the values of the bands are offset one bar forward. If using the opening then the offset can be set to zero as the bands values will also be fixed.

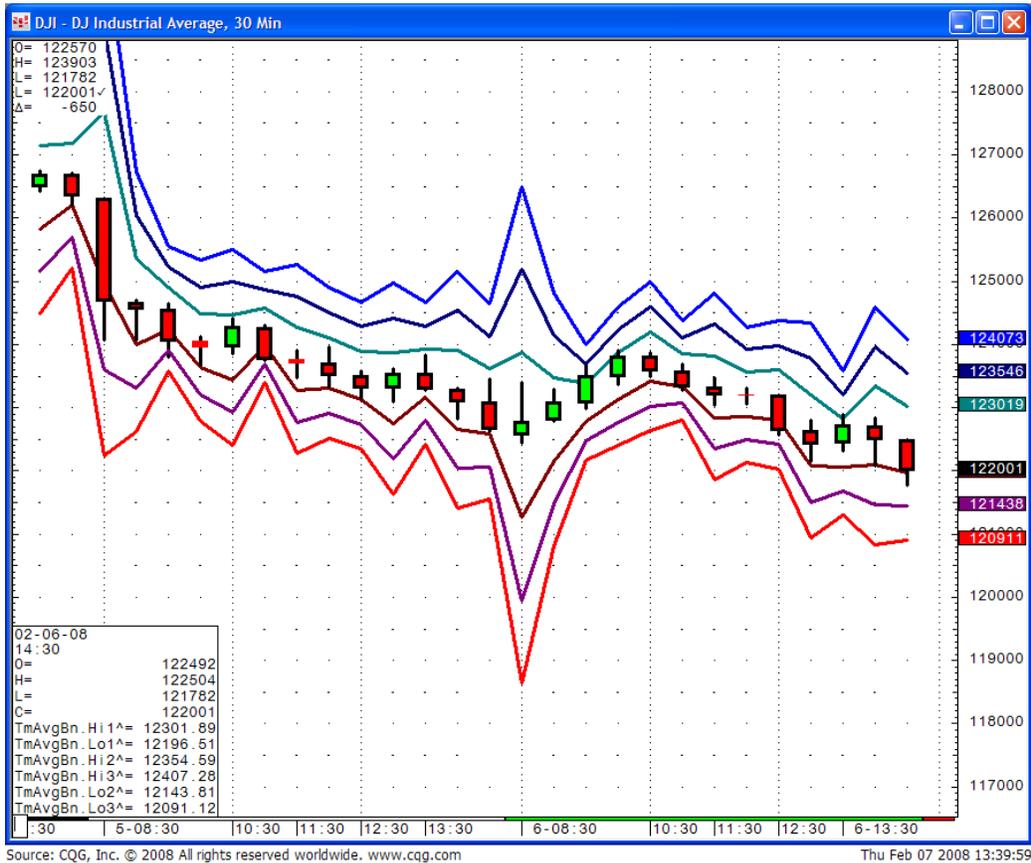
These breakouts can be further qualified by price moving beyond the 3rd deviation of the Volatility Time bands or the 4th deviation of the Time Average Bands. They also have significant power in qualifying traditional breakouts in Bollinger Bands, especially on individual stocks. www.i-traders.com has various modules, scanning engines and educational pieces that highlight the improvement in accuracy of these breakouts. They can also be used to qualify popular reversal patterns such as Tom Demarks TD Combo™ and TD Sequential™.

Please note that this study uses a long lookback period. On daily charts with little history, you may need to change TimeAvRngLen to 10 in order to have enough data for the calculation.

TAvBand Parameters

Name	Default	Definition
Display	On	The ability to hide the 4 th deviation.
MinLen	3	The minimum period moving average.
MaxLen	21	The maximum period moving average.
TimeAvRngLen	40	The lookback period for comparing time of day. Please note that this study uses a long lookback period. On daily charts with little history, you may need to change TimeAvRngLen to 10 in order to have enough data for the calculation.
Range	1000	The lookback period for comparing range.
Offset	1	This is to be used if using the closing price as the method for calculating the average. It is offset forward 1 bar so that the current bands value is fixed on the current bar. If using the opening value then the offset can be zero as the bands will still have a fixed value on the current bar.
StdMult1	1.0	The first bands.
StdMult2	2.0	The second bands.
StdMult3	3.0	The third bands.
StdMult4	4.0	The fourth bands.
Extra Steps	4000	The maximum lookback period for comparing range. A number too high may degrade performance, while a number too low will prevent the study from being displayed. The approximate calculation is ExtraSteps = "Number of bars per day" * TimeAvRngLen.
Price	Close	The value by which the Average is calculated.

Volatility Time Bands (VTBands)



This study looks at the time of day for a chart period and creates an average of the range for that bar over a user-defined look back period. It then places 1, 2, and 3 standard deviations around the opening price of that bar.

The study can be applied to:

- Bar chart
- Candlestick chart
- Equalize Sessions chart
- Fill Gap chart
- Line chart
- TBTF chart
- Yield chart

The study appears on the chart as seven curves. VTBLo1, VTBLo2, and VTBLo3 curves reference 1, 2, 3 standard deviations below the opening price and VTBHi1, VTBHi2, VTBHi3 to 1, 2, 3 standard deviations over the opening price. VTBMidPoint curve corresponds to midpoint of Lo1 and Hi1. All curves are overlaid.

You are able to turn off display of VTBMidPoint curve.

Philosophy

Volatility Time Bands have multitude of applications on all asset classes and timeframes down to the 15 minute chart. For a full explanation see chapter 1 of Trading Time and various case studies throughout the book. This study also has many connections with the daily commentaries written that are Profile based on over 40 markets. www.i-traders.com has some examples.

Nearly all momentum based indicators look at momentum on a continuous basis and have no automatic adjustment for the time of day that it is, or what the normal behavior is at that time. Volatility Time Bands analyses both the time of day and its relationship to range. The study analyses the current time of days range in relationship to its user defined average of range for that time of day in that timeframe chart. It then places 1 and 2 and 3 standard deviations around the opening of the current bar. In contrast to Range Deviation Pivots there is no skew for trend so the bands are symmetrical. **The lowest timeframe for computation is set at a 15 minute bar.**

Interpretation

Volatility Time Bands have multitude of applications on all asset classes and timeframes down to the 15 minute chart. For a full explanation see chapter 1 of Trading Time and various case studies throughout the book.

Volatility Time Bands have various applications.

- What is the trend? Are we above or below the bands?
- How strong is the trend? Where is price in relationship to the first up or down band?
- Is the trend accelerating? The relationship between the first bands, any closes outside the 3rd, and what the time of day actually is
- Has the trend changed? Has price switched from one side of the bands to the other side?
- Has the trend reached an extreme? Is it the correct time of day, is it doing so on multiple timeframes and does it connect with Range Deviation Pivots?
- Is that extreme likely to mark the end of the trend? Are we overbought or oversold? Are we at a major Market Profile support or resistance point?

All of these questions have applications, especially from a day trading point of view. One of the most common uses is to identify the trend and if it is up, place a limit order to buy at the 1 band down. The connection between multiple timeframes is also very powerful. A confluence of the 3rd band on the 15, 30 and 60 minute chart provides a firm reference of an extreme. Volume can rise if it is linked to Profile or the Range Deviation Pivots.

Closes outside of the 3rd band indicate activity beyond the normalized and are especially referenced on bars that have been influenced by news stories or statistics.

VTBands Parameters

Name	Default	Definition
Display	On	The ability have the mid point visible.
Len	22	The lookback period to compute the history of range.
StdMult1	1.0	The first bands.
StdMult2	2.0	The second bands.
StdMult3	3.0	The third bands.
Hide Midpoint	False	Determines whether the midpoint is displayed.
Extra Steps	1000	The maximum lookback period for comparing range. A number too high may degrade performance, while a number too low will prevent the study from being displayed. The approximate calculation is Extra Steps = "Number of bars per day" * Len.
Price	Open	Price around which standard deviations are placed.

ADX Steps (AdxStep)

Philosophy

This study records the closing value of a bar when the moving average of the Adx crosses up or down. This enables the ability to redefine divergence by allowing flexibility in the established mantras associated with the subject and also qualify the strength of the trend and what the highest timeframe chart is trending. This means that the trader knows what timeframe chart should be dominating their core technical based signals.

Therefore Adx Step does three things. Identifies trends, is the basis of qualifying divergence and dictates the timeframe chart to be analyzed. Please see chapter 3 and 4 of the book [Trading Time](#) for an expanded philosophy statement.

In order to understand and qualify both trend and divergence the studies should be applied two times. The first time records the closing value of the bar and by left clicking a second time and modifying the Value to Record to Base study.

The increased flexibility in understanding these points derives from the ability to select what price should be used to qualify. This means if for example the relationship of the close instead of high and lows is used, it reveals the ability to quantify divergence in sideways markets in order to produce an early warning to a break out and new trend. This is referenced as divergence as a continuation. This use of different momentum indicators and variables of them to create divergence enables the trader to define how aggressive or conservative they wish their signals to be.

Interpretation

The use of Steps can be interpreted for both the use as a divergence and trend qualifier.

For divergence, the steps up or down between the value of the bar and the indicator should be going in opposite directions. The aggressiveness of that divergence is the number of consecutive times this occurs. Aggressive is 2 times and conservative 3 times. It is very rare for markets to step in opposite direction 4 times, whatever the timeframe used, market or indicator. The qualifying of divergence is dictated by the direction that the steps are moving in e.g. when the moving average crosses up it is doing it at a higher level than the previous cross up (i.e. the study steps up), but the closing value of the bar on crossover of the moving average is lower than the closing value of the bar on the previous crossover (i.e. the study steps down). This would constitute positive divergence.

To indicate a trend qualifier the opposite is true. The steps up or down between the value of the bar and the indicator should be going in the same direction (i.e. both step up or down). This confirms that the indicator is showing more momentum by reaching a larger extreme and that the value within the trend is also continuing to a larger extreme.

One of the hardest tasks a trader confronts is how to understand what is the dominant timeframe and therefore the one to be referencing. A second problem is the ability to ride a trend through to its conclusion from a short term trade to a long term if the analysis dictates that is what should be done. Steps qualify this process. The dominant timeframe is the highest timeframe chart that shows any step whether on the bar or the indicator that has stepped in the same direction on a consecutive basis on 4 occasions. As trends extend, they must step up timeframes in order to signal that the trend is continuing and maturing. Different asset classes can extend varying timeframes before the trend stalls. Majors on Fx will rarely go more than a half day chart, whereas cross rates can move to daily charts. Mean reverting markets such as Bonds will also rarely extend to historical charts. However, individual stocks and index's can extend to weeks and even months which means trends that began as a short term trade on

intraday charts are finally exited many years later. The appendix in [Trading Time](#) shows such an example of riding the Australian stock market rally from 2003 to 2007 and over 4000 pts, with began on a 30 minute chart and ended on a weekly. The use of both Peak Range and Peak Volume act as the trailing stop to such Step trades.

For a more detailed description of these studies, go to the CQG Web site at http://www.cqg.com/Docs/Trading_Time.pdf.

AdxStep Parameters

Name	Default	Definition
Display	Both	Dictates whether both Steps or just individual ones are shown.
Value to Record	bars	Dictates whether the bars value or the indicators value is used.
Price	Close	Dictates what value is recorded if the bar value is selected.
AdxPeriod	34	Period of ADX.
MaPeriod	13	Period of Moving Average above ADX.

[OB/OS Parameters](#)

CCI Steps (CciStep)

Philosophy

This study records the closing value of a bar when the moving average of the Cci crosses up or down. This enables the ability to redefine divergence by allowing flexibility in the established mantras associated with the subject and also qualify the strength of the trend and what the highest timeframe chart is trending. This means that the trader knows what timeframe chart should be dominating there core technical based signals.

Therefore Cci Step does three things. Identifies trends, is the basis of qualifying divergence and dictates the timeframe chart to be analyzed. Please see chapter 3 and 4 of the book [Trading Time](#) for an expanded philosophy statement.

In order to understand and qualify both trend and divergence the studies should be applied two times. The first time records the closing value of the bar and by left clicking a second time and modifying the Value to Record to Base study.

The increased flexibility in understanding these points derives from the ability to select what price should be used to qualify. This means if for example the relationship of the close instead of high and lows is used, it reveals the ability to quantify divergence in sideways markets in order to produce an early warning to a break out and new trend. This is referenced as divergence as a continuation. This use of different momentum indicators and variables of them to create divergence enables the trader to define how aggressive or conservative they wish there signals to be.

Interpretation

The use of Steps can be interpreted for both the use as a divergence and trend qualifier.

For divergence, the steps up or down between the value of the bar and the indicator should be going in opposite directions. The aggressiveness of that divergence is the number of consecutive times this occurs. Aggressive is 2 times and conservative 3 times. It is very rare for markets to step in opposite direction 4 times, whatever the timeframe used, market or indicator. The qualifying of divergence is dictated by the direction that the steps are moving in e.g. when the moving average crosses up it is doing it at a higher level than the previous cross up (i.e. the study steps up), but the closing value of the bar on crossover of the moving average is lower than the closing value of the bar on the previous crossover (i.e. the study steps down). This would constitute positive divergence.

To indicate a trend qualifier the opposite is true. The steps up or down between the value of the bar and the indicator should be going in the same direction (i.e. both step up or down). This confirms that the indicator is showing more momentum by reaching a larger extreme and that the value within the trend is also continuing to a larger extreme.

One of the hardest tasks a trader confronts is how to understand what is the dominant time frame and therefore the one to be referencing. A second problem is the ability to ride a trend through to its conclusion from a short term trade to a long term if the analysis dictates that is what should be done. Steps qualify this process. The dominant timeframe is the highest timeframe chart that shows any step whether on the bar or the indicator that has stepped in the same direction on a consecutive basis on 4 occasions. As trends extend, they must step up timeframes in order to signal that the trend is continuing and maturing. Different asset classes can extend varying timeframes before the trend stalls. Majors on Fx will rarely go more than a half day chart, whereas cross rates can move to daily charts. Mean reverting markets such as Bonds will also rarely extend to historical charts. However, individual stocks and index's can extend to weeks and even months which means trends that began as a short term trade on

intraday charts are finally exited many years later. The appendix in Trading Time shows such an example of riding the Australian stock market rally from 2003 to 2007 and over 4000 pts, with began on a 30 minute chart and ended on a weekly. The use of both Peak Range and Peak Volume act as the trailing stop to such Step trades.

For a more detailed description of these studies, go to the CQG Web site at http://www.cqg.com/Docs/Trading_Time.pdf.

CciStep Parameters

Name	Default	Definition
Display	Both	Dictates whether both Steps or just individual ones are shown.
Value to Record	bars	Dictates whether the bars value or the indicators value is used.
Price	Close	Dictates what value is recorded if the bar value is selected.
CciPeriod	100	Period of CCI.
MaPeriod	13	Period of Moving Average above CCI.

[OB/OS Parameters](#)

DMI Steps (DmiStep)

Philosophy

This study records the closing value of a bar when the Dmi Up or Dmi Down cross up or down from each other. This is different to most of the other studies within the Step suite in that they use a moving average of the momentum indicator itself. This means that the default setting of 10 can lead to many steps in a sideways market and relatively few once a market begins to trend. **Therefore, by default the Step process on the Dmi lends itself more to qualifying trends and sideways as opposed to divergence.**

In order to understand and qualify both trend and sideways the studies can just record the value of the bar as opposed to many of the other Step studies that lend themselves to the value of both the bar and the indicator itself. This is because the Dmi up or down rarely reach extreme levels above 50.

Interpretation

The use of Steps with Dmi can be interpreted for both the use as a trend qualifier and in contrast to other step studies, the indication of sideways.

To indicate a trend it is the absence of any change in a step value that indicates a trend. The longer the difference between Steps the stronger the trend. This is in contrast to many of the other Step studies. This is because we already and in built calculation within the Dmi steps via Dmi Up and Dmi Down. The other difference is that both Step values if they continue to step in the same direction as each other, confirms that the trend is continuing. Therefore a Step on either indicator in the opposite direction signals that the trend is over.

Sideways is defined by the close proximity of Steps and the fact that Steps switch for up to down.

For a more detailed description of these studies, go to the CQG Web site at http://www.cqg.com/Docs/Trading_Time.pdf.

DmiStep Parameters

Name	Default	Definition
Display	Both	Dictates whether both Steps or just individual ones are shown.
Value to Record	bars	Dictates whether the bars value or the indicators value is used.
Price	Close	Dictates what value is recorded if the bar value is selected.
DmiPeriod	10	Period of DMI.

[OB/OS Parameters](#)

HVOL Steps (HvIStep)

Philosophy

This study records the closing value of a bar when the moving average of the Historical Volatility crosses up or down.

Each momentum indicator has different characteristics and therefore different trading opportunities. Historical volatility is not an absolute track of momentum in itself and therefore signals should not be interpreted as defining beginnings or ends of trends, but rather changes in the underlying characteristics of the market itself.

Interpretation

In contrast to most of the other Step Studies the default does not record the bar value, but the study value. This is because we are not tracking momentum but shifts in Volatility. If either study Steps up Volatility is rising and vice versa.

For a more detailed description of these studies, go to the CQG Web site at http://www.cqg.com/Docs/Trading_Time.pdf.

HVISTep Parameters

Name	Default	Definition
Display	Both	Dictates whether both Steps or just individual ones are shown.
Value to Record	bars	Either to record base study output or price value.
Price	Close	Disabled if Base study is selected as Value to Record.
HVol Type	Percent	What calculation is to be used.
HVol Period	21	Period of HVOL.
HVol Ann.Factor	250.0	This reflects how many trading years there are in a year.
MA Period	13	Period of Moving Average above HVOL.

MACD Steps (MacdSt)

Philosophy

This study records the closing value of a bar when the moving average of the Macd Oscillator crosses up or down. This enables the ability to redefine divergence by allowing flexibility in the established mantras associated with the subject and also qualify the strength of the trend and what the highest timeframe chart is trending. This means that the trader knows what timeframe chart should be dominating their core technical based signals. **The Macd is one of the slower momentum indicators so is more applicable to traders who wish to see fewer opportunities and hold trades for longer periods.**

Therefore Macd Step does three things. Identifies trends, is the basis of qualifying divergence and dictates the timeframe chart to be analyzed. Please see chapter 3 and 4 of the book [Trading Time](#) for an expanded philosophy statement.

In order to understand and qualify both trend and divergence the studies should be applied two times. The first time records the closing value of the bar and by left clicking a second time and modifying the Value to Record to Base study.

The increased flexibility in understanding these points derives from the ability to select what price should be used to qualify. This means if for example the relationship of the close instead of high and lows is used, it reveals the ability to quantify divergence in sideways markets in order to produce an early warning to a break out and new trend. This is referenced as divergence as a continuation. This use of different momentum indicators and variables of them to create divergence enables the trader to define how aggressive or conservative they wish their signals to be.

Interpretation

The use of Steps can be interpreted for both the use as a divergence and trend qualifier.

For divergence, the steps up or down between the value of the bar and the indicator should be going in opposite directions. The aggressiveness of that divergence is the number of consecutive times this occurs. Aggressive is 2 times and conservative 3 times. It is very rare for markets to step in opposite direction 4 times, whatever the timeframe used, market or indicator. The qualifying of divergence is dictated by the direction that the steps are moving in e.g. when the moving average crosses up it is doing it at a higher level than the previous cross up (i.e. the study steps up), but the closing value of the bar on crossover of the moving average is lower than the closing value of the bar on the previous crossover (i.e. the study steps down). This would constitute positive divergence.

To indicate a trend qualifier the opposite is true. The steps up or down between the value of the bar and the indicator should be going in the same direction (i.e. both step up or down). This confirms that the indicator is showing more momentum by reaching a larger extreme and that the value within the trend is also continuing to a larger extreme.

One of the hardest tasks a trader confronts is how to understand what is the dominant timeframe and therefore the one to be referencing. A second problem is the ability to ride a trend through to its conclusion from a short term trade to a long term if the analysis dictates that is what should be done. Steps qualify this process. The dominant timeframe is the highest timeframe chart that shows any step whether on the bar or the indicator that has stepped in the same direction on a consecutive basis on 4 occasions. As trends extend, they must step up timeframes in order to signal that the trend is continuing and maturing. Different asset classes can extend varying timeframes before the trend stalls. Majors on Fx will rarely go more than a half day chart, whereas cross rates can move to daily charts. Mean reverting markets such as

Bonds will also rarely extend to historical charts. However, individual stocks and index's can extend to weeks and even months which means trends that began as a short term trade on intraday charts are finally exited many years later. The appendix in [Trading Time](#) shows such an example of riding the Australian stock market rally from 2003 to 2007 and over 4000 pts, with began on a 30 minute chart and ended on a weekly. The use of both Peak Range and Peak Volume act as the trailing stop to such Step trades.

For a more detailed description of these studies, go to the CQG Web site at http://www.cqg.com/Docs/Trading_Time.pdf.

MacdSt Parameters

Name	Default	Definition
Display	Both	Dictates whether both Steps or just individual ones are shown.
Value to Record	Bar	Dictates whether the bars value or the indicators value is used.
Price	Close	Dictates what value is recorded if the bar value is selected.
MA1 Period	13	First part of the oscillator.
MA2 Period	26	Second part of the oscillator.
MA3 Period	9	Third part of the oscillator.
Signal Period	9.000	

[OB/OS Parameters](#)

MOM Steps (MmStep)

Philosophy

This study records the closing value of a bar when the moving average of Momentum crosses up or down. This enables the ability to redefine divergence by allowing flexibility in the established mantras associated with the subject and also qualify the strength of the trend and what the highest timeframe chart is trending. This means that the trader knows what timeframe chart should be dominating their core technical based signals.

Therefore, Momentum Step does three things. Identifies trends, is the basis of qualifying divergence and dictates the timeframe chart to be analyzed. Please see chapter 3 and 4 of the book [Trading Time](#) for an expanded philosophy statement.

In order to understand and qualify both trend and divergence the studies should be applied two times. The first time records the closing value of the bar and by left clicking a second time and modifying the Value to Record to Base study.

The increased flexibility in understanding these points derives from the ability to select what price should be used to qualify. This means if for example the relationship of the close instead of high and lows is used, it reveals the ability to quantify divergence in sideways markets in order to produce an early warning to a break out and new trend. This is referenced as divergence as a continuation. This use of different momentum indicators and variables of them to create divergence enables the trader to define how aggressive or conservative they wish their signals to be.

Interpretation

The use of Steps can be interpreted for both the use as a divergence and trend qualifier.

For divergence, the steps up or down between the value of the bar and the indicator should be going in opposite directions. The aggressiveness of that divergence is the number of consecutive times this occurs. Aggressive is 2 times and conservative 3 times. It is very rare for markets to step in opposite direction 4 times, whatever the timeframe used, market or indicator. The qualifying of divergence is dictated by the direction that the steps are moving in e.g. when the moving average crosses up it is doing it at a higher level than the previous cross up (i.e. the study steps up), but the closing value of the bar on crossover of the moving average is lower than the closing value of the bar on the previous crossover (i.e. the study steps down). This would constitute positive divergence.

To indicate a trend qualifier the opposite is true. The steps up or down between the value of the bar and the indicator should be going in the same direction (i.e. both step up or down). This confirms that the indicator is showing more momentum by reaching a larger extreme and that the value within the trend is also continuing to a larger extreme.

One of the hardest tasks a trader confronts is how to understand what is the dominant timeframe and therefore the one to be referencing. A second problem is the ability to ride a trend through to its conclusion from a short term trade to a long term if the analysis dictates that is what should be done. Steps qualify this process. The dominant timeframe is the highest timeframe chart that shows any step whether on the bar or the indicator that has stepped in the same direction on a consecutive basis on 4 occasions. As trends extend, they must step up timeframes in order to signal that the trend is continuing and maturing. Different asset classes can extend varying timeframes before the trend stalls. Majors on Fx will rarely go more than a half day chart, whereas cross rates can move to daily charts. Mean reverting markets such as Bonds will also rarely extend to historical charts. However, individual stocks and index's can extend to weeks and even months which means trends that began as a short term trade on

intraday charts are finally exited many years later. The appendix in [Trading Time](#) shows such an example of riding the Australian stock market rally from 2003 to 2007 and over 4000 pts, with began on a 30 minute chart and ended on a weekly. The use of both Peak Range and Peak Volume act as the trailing stop to such Step trades.

For a more detailed description of these studies, go to the CQG Web site at http://www.cqg.com/Docs/Trading_Time.pdf.

MmStep: Parameters

Name	Default	Definition
Display	Both	Dictates whether both Steps or just individual ones are shown.
Value to Record	bars	Dictates whether the bars value or the indicators value is used.
Price	Close	Dictates what value is recorded if the bar value is selected.
MOM Period	100	Period of MOM study.
MA Period	21	Period of Moving Average above MOM.

[OB/OS Parameters](#)

ROC Steps (RcStep)

Philosophy

This study records the closing value of a bar when the moving average of Rate of Change crosses up or down. This enables the ability to redefine divergence by allowing flexibility in the established mantras associated with the subject and also qualify the strength of the trend and what the highest timeframe chart is trending. This means that the trader knows what timeframe chart should be dominating their core technical based signals.

Therefore Rate of Change Step does three things. Identifies trends, is the basis of qualifying divergence and dictates the timeframe chart to be analyzed. Please see chapter 3 and 4 of the book [Trading Time](#) for an expanded philosophy statement.

In order to understand and qualify both trend and divergence the studies should be applied two times. The first time records the closing value of the bar and by left clicking a second time and modifying the Value to Record to Base study.

The increased flexibility in understanding these points derives from the ability to select what price should be used to qualify. This means if for example the relationship of the close instead of high and lows is used, it reveals the ability to quantify divergence in sideways markets in order to produce an early warning to a break out and new trend. This is referenced as divergence as a continuation. This use of different momentum indicators and variables of them to create divergence enables the trader to define how aggressive or conservative they wish their signals to be.

Interpretation

The use of Steps can be interpreted for both the use as a divergence and trend qualifier.

For divergence, the steps up or down between the value of the bar and the indicator should be going in opposite directions. The aggressiveness of that divergence is the number of consecutive times this occurs. Aggressive is 2 times and conservative 3 times. It is very rare for markets to step in opposite direction 4 times, whatever the timeframe used, market or indicator. The qualifying of divergence is dictated by the direction that the steps are moving in e.g. when the moving average crosses up it is doing it at a higher level than the previous cross up (i.e. the study steps up), but the closing value of the bar on crossover of the moving average is lower than the closing value of the bar on the previous crossover (i.e. the study steps down). This would constitute positive divergence.

To indicate a trend qualifier the opposite is true. The steps up or down between the value of the bar and the indicator should be going in the same direction (i.e. both step up or down). This confirms that the indicator is showing more momentum by reaching a larger extreme and that the value within the trend is also continuing to a larger extreme.

One of the hardest tasks a trader confronts is how to understand what is the dominant timeframe and therefore the one to be referencing. A second problem is the ability to ride a trend through to its conclusion from a short term trade to a long term if the analysis dictates that is what should be done. Steps qualify this process. The dominant timeframe is the highest timeframe chart that shows any step whether on the bar or the indicator that has stepped in the same direction on a consecutive basis on 4 occasions. As trends extend, they must step up timeframes in order to signal that the trend is continuing and maturing. Different asset classes can extend varying timeframes before the trend stalls. Majors on Fx will rarely go more than a half day chart, whereas cross rates can move to daily charts. Mean reverting markets such as Bonds will also rarely extend to historical charts. However, individual stocks and index's can extend to weeks and even months which means trends that began as a short term trade on

intraday charts are finally exited many years later. The appendix in [Trading Time](#) shows such an example of riding the Australian stock market rally from 2003 to 2007 and over 4000 pts, with began on a 30 minute chart and ended on a weekly. The use of both Peak Range and Peak Volume act as the trailing stop to such Step trades.

For a more detailed description of these studies, go to the CQG Web site at http://www.cqg.com/Docs/Trading_Time.pdf.

RcStep Parameters

Name	Default	Definition
Display	Both	Dictates whether both Steps or just individual ones are shown.
Value to Record	Bar	Dictates whether the bars value or the indicators value is used.
Price	Close	Dictates what value is recorded if the bar value is selected.
ROC Period	10	Period of ROC study.
MA Period	5	Period of Moving Average above ROC.

[OB/OS Parameters](#)

RSI Steps (RsStep)



Philosophy

This study records the closing value of a bar when the moving average of the Rsi crosses up or down. This enables the ability to redefine divergence by allowing flexibility in the established mantras associated with the subject and also qualify the strength of the trend and what the highest timeframe chart is trending. This means that the trader knows what timeframe chart should be dominating their core technical based signals.

Therefore Rsi Step does three things. Identifies trends, is the basis of qualifying divergence and dictates the timeframe chart to be analyzed. Please see chapter 3 and 4 of the book [Trading Time](#) for an expanded philosophy statement.

In order to understand and qualify both trend and divergence the studies should be applied two times. The first time records the closing value of the bar and by left clicking a second time and modifying the Value to Record to Base study.

The increased flexibility in understanding these points derives from the ability to select what price should be used to qualify. This means if for example the relationship of the close instead of high and lows is used, it reveals the ability to quantify divergence in sideways markets in order to produce an early warning to a break out and new trend. This is referenced as divergence as a continuation. This use of different momentum indicators and variables of them to create divergence enables the trader to define how aggressive or conservative they wish their signals to be.

Interpretation

The use of Steps can be interpreted for both the use as a divergence and trend qualifier.

For divergence, the steps up or down between the value of the bar and the indicator should be going in opposite directions. The aggressiveness of that divergence is the number of

consecutive times this occurs. Aggressive is 2 times and conservative 3 times. It is very rare for markets to step in opposite direction 4 times, whatever the timeframe used, market or indicator. The qualifying of divergence is dictated by the direction that the steps are moving in e.g. when the moving average crosses up it is doing it at a higher level than the previous cross up (i.e. the study steps up), but the closing value of the bar on crossover of the moving average is lower than the closing value of the bar on the previous crossover (i.e. the study steps down). This would constitute positive divergence.

To indicate a trend qualifier the opposite is true. The steps up or down between the value of the bar and the indicator should be going in the same direction (i.e. both step up or down). This confirms that the indicator is showing more momentum by reaching a larger extreme and that the value within the trend is also continuing to a larger extreme.

One of the hardest tasks a trader confronts is how to understand what is the dominant time frame and therefore the one to be referencing. A second problem is the ability to ride a trend through to its conclusion from a short term trade to a long term if the analysis dictates that is what should be done. Steps qualify this process. The dominant timeframe is the highest timeframe chart that shows any step whether on the bar or the indicator that has stepped in the same direction on a consecutive basis on 4 occasions. As trends extend, they must step up timeframes in order to signal that the trend is continuing and maturing. Different asset classes can extend varying timeframes before the trend stalls. Majors on Fx will rarely go more than a half day chart, whereas cross rates can move to daily charts. Mean reverting markets such as Bonds will also rarely extend to historical charts. However, individual stocks and index's can extend to weeks and even months which means trends that began as a short term trade on intraday charts are finally exited many years later. The appendix in [Trading Time](#) shows such an example of riding the Australian stock market rally from 2003 to 2007 and over 4000 pts, with began on a 30 minute chart and ended on a weekly. The use of both Peak Range and Peak Volume act as the trailing stop to such Step trades.

For a more detailed description of these studies, go to the CQG Web site at http://www.cqg.com/Docs/Trading_Time.pdf.

RsStep Parameters

Name	Default	Definition
Display	Both	Dictates whether both Steps or just individual ones are shown.
Value to Record	bars	Dictates whether the bars value or the indicators value is used.
Price	Close	Dictates what value is recorded if the bar value is selected.
RSI Period	34	Period of RSI.
MA Period	13	Period of Moving Average above RSI.

[OB/OS Parameters](#)

Stochastics Steps (StStep)



Philosophy

This study records the closing value of a bar when the Stochastic %K crosses up or down through the Stochastic %D. This enables the ability to redefine divergence by allowing flexibility in the established mantras associated with the subject and also qualify the strength of the trend and what the highest timeframe chart is trending. This means that the trader knows what timeframe chart should be dominating their core technical based signals.

Therefore Stochastic Step does three things. Identifies trends, is the basis of qualifying divergence and dictates the timeframe chart to be analyzed. Please see chapter 3 and 4 of the book [Trading Time](#) for an expanded philosophy statement.

In order to understand and qualify both trend and divergence the studies should be applied two times. The first time records the closing value of the bar and by left clicking a second time and modifying the Value to Record to Base study.

The increased flexibility in understanding these points derives from the ability to select what price should be used to qualify. This means if for example the relationship of the close instead of high and lows is used, it reveals the ability to quantify divergence in sideways markets in order to produce an early warning to a break out and new trend. This is referenced as divergence as a continuation. This use of different momentum indicators and variables of them to create divergence enables the trader to define how aggressive or conservative they wish their signals to be.

Each momentum indicator used for divergence has different characteristics and therefore different trading opportunities. Slow Stochastic is a rather sensitive indicator in its original default setting on the StDiv study in that has a close correlation with the price action of the market itself, especially in its relationship to the close to the high or low of the bar. Note that the defaults for Stochastic Steps

differ considerably from the StDiv study and are far longer in length and therefore are closer to the MACD Step study in its characteristics.

Interpretation

The use of Steps can be interpreted for both the use as a divergence and trend qualifier.

For divergence, the steps up or down between the value of the bar and the indicator should be going in opposite directions. The aggressiveness of that divergence is the number of consecutive times this occurs. Aggressive is 2 times and conservative 3 times. It is very rare for markets to step in opposite direction 4 times, whatever the timeframe used, market or indicator. The qualifying of divergence is dictated by the direction that the steps are moving in e.g. when the moving average crosses up it is doing it at a higher level than the previous cross up (i.e. the study steps up), but the closing value of the bar on crossover of the moving average is lower than the closing value of the bar on the previous crossover (i.e. the study steps down). This would constitute positive divergence.

To indicate a trend qualifier the opposite is true. The steps up or down between the value of the bar and the indicator should be going in the same direction (i.e. both step up or down). This confirms that the indicator is showing more momentum by reaching a larger extreme and that the value within the trend is also continuing to a larger extreme.

One of the hardest tasks a trader confronts is how to understand what is the dominant time frame and therefore the one to be referencing. A second problem is the ability to ride a trend through to its conclusion from a short term trade to a long term if the analysis dictates that is what should be done. Steps qualify this process. The dominant timeframe is the highest timeframe chart that shows any step whether on the bar or the indicator that has stepped in the same direction on a consecutive basis on 4 occasions. As trends extend, they must step up timeframes in order to signal that the trend is continuing and maturing. Different asset classes can extend varying timeframes before the trend stalls. Majors on Fx will rarely go more than a half day chart, whereas cross rates can move to daily charts. Mean reverting markets such as Bonds will also rarely extend to historical charts. However, individual stocks and index's can extend to weeks and even months which means trends that began as a short term trade on intraday charts are finally exited many years later. The appendix in Trading Time shows such an example of riding the Australian stock market rally from 2003 to 2007 and over 4000 pts, with began on a 30 minute chart and ended on a weekly. The use of both Peak Range and Peak Volume act as the trailing stop to such Step trades.

For a more detailed description of these studies, go to the CQG Web site at http://www.cqg.com/Docs/Trading_Time.pdf.

StStep Parameters

Name	Default	Definition
Display	Both	Dictates whether both Steps or just individual ones are shown.
Value to Record	Bar	Dictates whether the bars value or the indicators value is used.
Price	Close	Dictates what value is recorded if the bar value is selected.
Period S STO	21	STO Period of Stochastic.
Period S STO %K	13	STO %K Period of Stochastic.
Period S STO %D	8	STO %D Period of Stochastic.
OB/OS	80/20	The threshold at which a trend step process is reset by the indicator moving in the opposite direction to the previous trend.

Trix Steps (TrxStep)

Philosophy

This study records the closing value of a bar when the moving average of the Triple Exponential crosses up or down. This enables the ability to redefine divergence by allowing flexibility in the established mantras associated with the subject and also qualify the strength of the trend and what the highest timeframe chart is trending. This means that the trader knows what timeframe chart should be dominating their core technical based signals.

Therefore TrxStep does three things. Identifies trends, is the basis of qualifying divergence and dictates the timeframe chart to be analyzed. Please see chapter 3 and 4 of the book [Trading Time](#) for an expanded philosophy statement.

In order to understand and qualify both trend and divergence the studies should be applied two times. The first time records the closing value of the bar and by left clicking a second time and modifying the Value to Record to Base study.

The increased flexibility in understanding these points derives from the ability to select what price should be used to qualify. This means if for example the relationship of the close instead of high and lows is used, it reveals the ability to quantify divergence in sideways markets in order to produce an early warning to a break out and new trend. This is referenced as divergence as a continuation. This use of different momentum indicators and variables of them to create divergence enables the trader to define how aggressive or conservative they wish their signals to be.

Interpretation

The use of Steps can be interpreted for both the use as a divergence and trend qualifier.

For divergence, the steps up or down between the value of the bar and the indicator should be going in opposite directions. The aggressiveness of that divergence is the number of consecutive times this occurs. Aggressive is 2 times and conservative 3 times. It is very rare for markets to step in opposite direction 4 times, whatever the timeframe used, market or indicator. The qualifying of divergence is dictated by the direction that the steps are moving in e.g. when the moving average crosses up it is doing it at a higher level than the previous cross up (i.e. the study steps up), but the closing value of the bar on crossover of the moving average is lower than the closing value of the bar on the previous crossover (i.e. the study steps down). This would constitute positive divergence.

To indicate a trend qualifier the opposite is true. The steps up or down between the value of the bar and the indicator should be going in the same direction (i.e. both step up or down). This confirms that the indicator is showing more momentum by reaching a larger extreme and that the value within the trend is also continuing to a larger extreme.

One of the hardest tasks a trader confronts is how to understand what is the dominant timeframe and therefore the one to be referencing. A second problem is the ability to ride a trend through to its conclusion from a short term trade to a long term if the analysis dictates that is what should be done. Steps qualify this process. The dominant timeframe is the highest timeframe chart that shows any step whether on the bar or the indicator that has stepped in the same direction on a consecutive basis on 4 occasions. As trends extend, they must step up timeframes in order to signal that the trend is continuing and maturing. Different asset classes can extend varying timeframes before the trend stalls. Majors on Fx will rarely go more than a half day chart, whereas cross rates can move to daily charts. Mean reverting markets such as Bonds will also rarely extend to historical charts. However, individual stocks and index's can extend to weeks and even months which means trends that began as a short term trade on

intraday charts are finally exited many years later. The appendix in [Trading Time](#) shows such an example of riding the Australian stock market rally from 2003 to 2007 and over 4000 pts, with began on a 30 minute chart and ended on a weekly. The use of both Peak Range and Peak Volume act as the trailing stop to such Step trades.

For a more detailed description of these studies, go to the CQG Web site at http://www.cqg.com/Docs/Trading_Time.pdf.

TrxStep Parameters

Name	Default	Definition
Display	Both	Dictates whether both Steps or just individual ones are shown.
Value to Record	Bar	Dictates whether the bars value or the indicators value is used.
Price	Close	Dictates what value is recorded if the bar value is selected.
Trix Period	13	Period of Trix.
MA Period	8	Period of Moving Average applied to Trix.

[OB/OS Parameters](#)

Divergence Studies

Shaun Downey divergence studies connect the relationship between the trend of bars and the smoothed by moving average trend of the underlying studies.

Each study from this group is signaled when the specified number of up or down turns of the bars and the moving average of underlying study goes in opposite direction.

You can select the type and period of the moving average.

For more information about Trading Time, go to <http://www.cqg.com/AdditionalInfo/About-CQG/Trading-Time.aspx>.

Additional study information is here: http://www.cqg.com/Docs/Trading_Time.pdf.

Shaun has also created a [helpful video](#) about quantifying divergence. Please go to <http://www.cqg.com/Docs/HelpFlash.swf>.

ADX Divergence (AdxDiv)

Philosophy

This study attempts to redefine divergence by allowing flexibility in the established mantras associated with the subject. The traditional interpretation is that if price is going in one direction and the momentum indicator in the opposite direction, divergence is occurring and suggests that the trend is ending. The reality is of this basic theory is that all but the strongest trends will diverge and often give false exit signals to trend following trades and false reversal signals against the trend.

The increased flexibility derives from the ability to not only look for divergence on the indicator itself, but replace this with a moving average of the indicator in or order to smooth out and reduce the number of turning points. The traditional mantra looks at absolute highs and lows of price to define divergence but this study enables the trader to select what price should be used to qualify. This means if for example the relationship of the close instead of high and lows is used, it reveals the ability to quantify divergence in sideways markets in order to produce and early warning to a break out and new trend. This is referenced as divergence as a continuation. This use of different momentum indicators and variables of them to create divergence enables the trader to define how aggressive or conservative they wish there signals to be.

Interpretation

Each momentum indicator used for divergence has different characteristics and therefore different trading opportunities. Whilst the Adx is a good indicator of trend it has one inherent flaw. This involves sharp reversals from the previous trend. The Adx will not pick this change and the indicator will fall in value even though the new trend is strong. This means that the secondary trend will not produce any worthwhile signals. Its second important characteristic is the relative slowness in directional volatility in relationship to many other momentum indicators. This means that divergence can take far longer to be evident. The default settings interpret divergence by isolating a change in direction of the Adx or the moving average of the Adx and at that moment recording the value of the study itself and the default value of the bar. Divergence is qualified when they move in opposite directions on a certain number of consecutive occasions. A positive divergence is revealed by a red line recording a value of one and a blue line a negative signal. This highlights how the raw code is primarily of use as an exit tool to existing trend following trades. However, the building of code within the formula tool box enables traders to increase the accuracy of divergence qualification by focusing on the absolute value of the Studies or |bar values and creating more exact threshold parameters.

For more information about Trading Time, go to <http://www.cqg.com/AdditionalInfo/About-CQG/Trading-Time.aspx>.

Additional study information is here: http://www.cqg.com/Docs/Trading_Time.pdf.

Shaun has also created a [helpful video](#) about quantifying divergence. Please go to <http://www.cqg.com/Docs/HelpFlash.swf>.

AdxDiv Parameters

Name	Default	Definition
N	1	the number of divergence patterns that are needed to produce a signal. Most only need 1 and will not produce signals if increased.
ADXDiv Period	5	Qualifies a propriety area within which signals do not have to be symmetrical.
MA Period	1	This second period refers to the variable of the moving average. Setting it to a number beyond 1 means that the average is being used as the divergence tool and not the original indicator.
ADX Period	21	The Adx variable to be used in the divergence calculation providing the Period of the Ma is set at 1.
Lookback	25	Qualifies the lookback period for when divergence can occur within. Increasing the number will normally increase the number of divergence signals and for slow moving indicators should be raised from the default.
MA Type	Sim	Qualifies the type of moving average to be used.
AdxDivDn Price	High	Qualifies the relationship within the change in direction of the indicator and the subsequent bar value to be recorded at that point.
AdxDivUp Price	Low	Qualifies the relationship within the change in direction of the indicator and the subsequent bar value to be recorded at that point.

[Display Parameters](#)

CCI Divergence (CciDiv)

Philosophy

This study attempts to redefine divergence by allowing flexibility in the established mantras associated with the subject. The traditional interpretation is that if price is going in one direction and the momentum indicator in the opposite direction, divergence is occurring and suggests that the trend is ending. The reality is of this basic theory is that all but the strongest trends will diverge and often give false exit signals to trend following trades and false reversal signals against the trend.

The increased flexibility derives from the ability to not only look for divergence on the indicator itself, but replace this with a moving average of the indicator in or order to smooth out and reduce the number of turning points. The traditional mantra looks at absolute highs and lows of price to define divergence but this study enables the trader to select what price should be used to qualify. This means if for example the relationship of the close instead of high and lows is used, it reveals the ability to quantify divergence in sideways markets in order to produce and early warning to a break out and new trend. This is referenced as divergence as a continuation. This use of different momentum indicators and variables of them to create divergence enables the trader to define how aggressive or conservative they wish there signals to be.

Interpretation

Each momentum indicator used for divergence has different characteristics and therefore different trading opportunities. The Cci is a relatively sensitive indicator which means that divergence can be premature and also produce far too many signals. Therefore the default parameter on the Cci itself is much higher than many others in the suite, with a setting of 100. The default settings interpret divergence by isolating a change in direction of the Cci or the moving average of the Cci and at that moment recording the value of the study itself and the default value of the bar. Divergence is qualified when they move in opposite directions on a certain number of consecutive occasions. A positive divergence is revealed by a red line recording a value of one and a blue line a negative signal. This highlights how the raw code is primarily of use as an exit tool to existing trend following trades. However, the building of code within the formula tool box enables traders to increase the accuracy of divergence qualification by focusing on the absolute value of the Studies or |bar values and creating more exact threshold parameters.

For more information about Trading Time, go to <http://www.cqg.com/AdditionalInfo/About-CQG/Trading-Time.aspx>.

Additional study information is here: http://www.cqg.com/Docs/Trading_Time.pdf.

Shaun has also created a [helpful video](#) about quantifying divergence. Please go to <http://www.cqg.com/Docs/HelpFlash.swf>.

CciDiv Parameters

Name	Default	Definition
N	1	The number of divergence patterns that are needed to produce a signal. Most only need 1 and will not produce signals if increased.
Period	5	Qualifies a propriety area within which signals do not have to be symmetrical.
MA Period	1	This second period refers to the variable of the moving average. Setting it to a number beyond 1 means that the average is being used as the divergence tool and not the original indicator.
CCI Period	100	The Cci variable to be used in the divergence calculation providing the Period of the Ma is set at 1.
Lookback Period	25	Qualifies the lookback period for when divergence can occur within. Increasing the number will normally increase the number of divergence signals and for slow moving indicators should be raised from the default.
MA Type	Sim	Qualifies the type of moving average to be used.
CciDivDn	High	Qualifies the relationship within the change in direction of the indicator and the subsequent bar value to be recorded at that point.
CciDivUp	Low	Qualifies the relationship within the change in direction of the indicator and the subsequent bar value to be recorded at that point.

[Display Parameters](#)

DMI Divergence (DmiDiv)

Philosophy

This study attempts to redefine divergence by allowing flexibility in the established mantras associated with the subject. The traditional interpretation is that if price is going in one direction and the momentum indicator in the opposite direction, divergence is occurring and suggests that the trend is ending. The reality is of this basic theory is that all but the strongest trends will diverge and often give false exit signals to trend following trades and false reversal signals against the trend.

The increased flexibility derives from the ability to not only look for divergence on the indicator itself, but replace this with a moving average of the indicator in or order to smooth out and reduce the number of turning points. The traditional mantra looks at absolute highs and lows of price to define divergence but this study enables the trader to select what price should be used to qualify. This means if for example the relationship of the close instead of high and lows is used, it reveals the ability to quantify divergence in sideways markets in order to produce and early warning to a break out and new trend. This is referenced as divergence as a continuation. This use of different momentum indicators and variables of them to create divergence enables the trader to define how aggressive or conservative they wish there signals to be.

Interpretation

Each momentum indicator used for divergence has different characteristics and therefore different trading opportunities. The Dmi has two indicators within the study called Dmi Up and Dmi Down. Therefore when calling this study up two separate windows will appear that interpret both and any change in one will automatically change the other as well. The default settings interpret divergence by isolating a change in direction of the Dmi or the moving average of the Dmi, and at that moment recording the value of the study itself and the default value of the bar. Divergence is qualified when they move in opposite directions on a certain number of consecutive occasions. A positive divergence is revealed by a red line recording a value of one and a blue line a negative signal. This highlights how the raw code is primarily of use as an exit tool to existing trend following trades. However, the building of code within the formula tool box enables traders to increase the accuracy of divergence qualification by focusing on the absolute value of the studies or |bar values and creating more exact threshold parameters.

For more information about Trading Time, go to <http://www.cqg.com/AdditionalInfo/About-CQG/Trading-Time.aspx>.

Additional study information is here: http://www.cqg.com/Docs/Trading_Time.pdf.

Shaun has also created a [helpful video](#) about quantifying divergence. Please go to <http://www.cqg.com/Docs/HelpFlash.swf>.

DmiDiv Parameters

Name	Default	Definition
N	1	Number of divergence patterns that are needed to produce a signal. Most only need 1 and will not produce signals if increased.
Period	5	Qualifies a propriety area within which signals do not have to be symmetrical.
MA Period	1	This second period refers to the variable of the moving average. Setting it to a number beyond 1 means that the average is being used as the divergence tool and not the original indicator.
DMI Period	21	Dmi variable to be used in the divergence calculation providing the Period of the Ma is set at 1.
Lookback	25	Qualifies the lookback period for when divergence can occur within. Increasing the number will normally increase the number of divergence signals and for slow moving indicators should be raised from the default.
MA Type	Sim	Qualifies the type of moving average to be used.
DmiDivDn	High	Qualifies the relationship within the change in direction of the indicator and the subsequent bar value to be recorded at that point.
DmiDivUp	Low	Qualifies the relationship within the change in direction of the indicator and the subsequent bar value to be recorded at that point.

[Display Parameters](#)

HVOL Divergence (HvIDiv)

Philosophy

This study attempts to redefine divergence by allowing flexibility in the established mantras associated with the subject. The traditional interpretation is that if price is going in one direction and the momentum indicator in the opposite direction, divergence is occurring and suggests that the trend is ending. The reality is of this basic theory is that all but the strongest trends will diverge and often give false exit signals to trend following trades and false reversal signals against the trend.

The increased flexibility derives from the ability to not only look for divergence on the indicator itself, but replace this with a moving average of the indicator in or order to smooth out and reduce the number of turning points. The traditional mantra looks at absolute highs and lows of price to define divergence but this study enables the trader to select what price should be used to qualify. This means if for example the relationship of the close instead of high and lows is used, it reveals the ability to quantify divergence in sideways markets in order to produce and early warning to a break out and new trend. This is referenced as divergence as a continuation. This use of different momentum indicators and variables of them to create divergence enables the trader to define how aggressive or conservative they wish there signals to be.

Interpretation

Each momentum indicator used for divergence has different characteristics and therefore different trading opportunities. Historical volatility is not an absolute track of momentum in itself and therefore signals should not be interpreted as defining beginnings or ends of trends, but rather changes in the underlying characteristics of the market itself.

For more information about Trading Time, go to <http://www.cqg.com/AdditionalInfo/About-CQG/Trading-Time.aspx>.

Additional study information is here: http://www.cqg.com/Docs/Trading_Time.pdf.

Shaun has also created a [helpful video](http://www.cqg.com/Docs/HelpFlash.swf) about quantifying divergence. Please go to <http://www.cqg.com/Docs/HelpFlash.swf>.

HvIDiv Parameters

Name	Default	Definition
N	1	Number of divergence patterns that are needed to produce a signal. Most only need 1 and will not produce signals if increased.
Period	5	Qualifies a propriety area within which signals do not have to be symmetrical.
MA Period	1	This second period refers to the variable of the moving average. Setting it to a number beyond 1 means that the average is being used as the divergence tool and not the original indicator.
HVol Period	10	Hvol variable to be used in the divergence calculation providing the Period of the Ma is set at 1.
Lookback	25	Qualifies the lookback period for when divergence can occur within. Increasing the number will normally increase the number of divergence signals and for slow moving indicators should be raised from the default.
MA Type	Sim	Qualifies the type of moving average to be used.
HVol Type	Percent	The calculation of volatility.
HvIDivDn	High	Qualifies the relationship within the change in direction of the indicator and the subsequent bar value to be recorded at that point.
HvIDivUp	Low	Qualifies the relationship within the change in direction of the indicator and the subsequent bar value to be recorded at that point.
HVol Ann. Factor	250.0	The number of trading days in a calendar year.

[Display Parameters](#)

MACD Divergence (MacdDiv)

Philosophy

This study attempts to redefine divergence by allowing flexibility in the established mantras associated with the subject. The traditional interpretation is that if price is going in one direction and the momentum indicator in the opposite direction, divergence is occurring and suggests that the trend is ending. The reality is of this basic theory is that all but the strongest trends will diverge and often give false exit signals to trend following trades and false reversal signals against the trend.

The increased flexibility derives from the ability to not only look for divergence on the indicator itself, but replace this with a moving average of the indicator in or order to smooth out and reduce the number of turning points. The traditional mantra looks at absolute highs and lows of price to define divergence but this study enables the trader to select what price should be used to qualify. This means if for example the relationship of the close instead of high and lows is used, it reveals the ability to quantify divergence in sideways markets in order to produce and early warning to a break out and new trend. This is referenced as divergence as a continuation. This use of different momentum indicators and variables of them to create divergence enables the trader to define how aggressive or conservative they wish there signals to be.

Interpretation

Each momentum indicator used for divergence has different characteristics and therefore different trading opportunities. One of the main characteristics of the Macd is the relative slowness in directional volatility in relationship to many other momentum indicators. This means that divergence can take far longer to be evident and therefore the default setting for the Lookback period is double of what many of the other indicators default is. Histogram, and at that moment recording the value of the study itself and the default value of the bar. Divergence is qualified when they move in opposite directions on a certain number of consecutive occasions. A positive divergence is revealed by a red line recording a value of one and a blue line a negative signal. This highlights how the raw code is primarily of use as an exit tool to existing trend following trades. However, the building of code within the formula tool box enables traders to increase the accuracy of divergence qualification by focusing on the absolute value of the Studies or |bar values and creating more exact threshold parameters. The use of the moving average has more significance than on those momentum indicators that only have one value, as the moving average element is an integral part of the original Macd indicator.

For more information about Trading Time, go to <http://www.cqg.com/AdditionalInfo/About-CQG/Trading-Time.aspx>.

Additional study information is here: http://www.cqg.com/Docs/Trading_Time.pdf.

Shaun has also created a [helpful video](#) about quantifying divergence. Please go to <http://www.cqg.com/Docs/HelpFlash.swf>.

MacdDiv Parameters

Name	Default	Definition
N	1	Number of divergence patterns that are needed to produce a signal. Most only need 1 and will not produce signals if increased.
Period	5	Qualifies a propriety area within which signals do not have to be symmetrical.
MA Period	1	This second period refers to the variable of the moving average. Setting it to a number beyond 1 means that the average is being used as the divergence tool and not the original indicator. A period of 9 would reflect the standard default for the Macd.
Lookback	50	Qualifies the lookback period for when divergence can occur within. Increasing the number will normally increase the number of divergence signals and for slow moving indicators should be raised from the default.
MA Type	Sim	Qualifies the type of moving average to be used.
MacdDivDn	High	Qualifies the relationship within the change in direction of the indicator and the subsequent bar value to be recorded at that point.
MacdDivUp	Low	Qualifies the relationship within the change in direction of the indicator and the subsequent bar value to be recorded at that point.
MA1 Period	13.000	Macd variable to be used in the divergence calculation providing the Period of the Ma is set at 1.
MA2 Period	26.000	Macd variable to be used in the divergence calculation providing the Period of the Ma is set at 1.

[Display Parameters](#)

MOM Divergence (MmDiv)

Philosophy

This study attempts to redefine divergence by allowing flexibility in the established mantras associated with the subject. The traditional interpretation is that if price is going in one direction and the momentum indicator in the opposite direction, divergence is occurring and suggests that the trend is ending. The reality is of this basic theory is that all but the strongest trends will diverge and often give false exit signals to trend following trades and false reversal signals against the trend.

The increased flexibility derives from the ability to not only look for divergence on the indicator itself, but replace this with a moving average of the indicator in or order to smooth out and reduce the number of turning points. The traditional mantra looks at absolute highs and lows of price to define divergence but this study enables the trader to select what price should be used to qualify. This means if for example the relationship of the close instead of high and lows is used, it reveals the ability to quantify divergence in sideways markets in order to produce and early warning to a break out and new trend. This is referenced as divergence as a continuation. This use of different momentum indicators and variables of them to create divergence enables the trader to define how aggressive or conservative they wish there signals to be.

Interpretation

Each momentum indicator used for divergence has different characteristics and therefore different trading opportunities. Momentum is a rather sensitive indicator that has a close correlation with the price action of the market itself. The default settings interpret divergence by isolating a change in direction of the Momentum or the moving average of Momentum, and at that moment recording the value of the study itself and the default value of the bar. Divergence is qualified when they move in opposite directions on a certain number of consecutive occasions. A positive divergence is revealed by a red line recording a value of one and a blue line a negative signal. This highlights how the raw code is primarily of use as an exit tool to existing trend following trades. However, the building of code within the formula tool box enables traders to increase the accuracy of divergence qualification by focusing on the absolute value of the Studies or |bar values and creating more exact threshold parameters.

For more information about Trading Time, go to <http://www.cqg.com/AdditionalInfo/About-CQG/Trading-Time.aspx>.

Additional study information is here: http://www.cqg.com/Docs/Trading_Time.pdf.

Shaun has also created a [helpful video](#) about quantifying divergence. Please go to <http://www.cqg.com/Docs/HelpFlash.swf>.

MmDiv Parameters

Name	Default	Definition
N	1	Number of divergence patterns that are needed to produce a signal. Most only need 1 and will not produce signals if increased.
Period	5	Qualifies a propriety area within which signals do not have to be symmetrical.
MA Period	1	This second period refers to the variable of the moving average. Setting it to a number beyond 1 means that the average is being used as the divergence tool and not the original indicator.
MOM Period	10	Period of MOM.
Lookback	25	Qualifies the lookback period for when divergence can occur within. Increasing the number will normally increase the number of divergence signals and for slow moving indicators should be raised from the default.
MA Type	Sim	Qualifies the type of moving average to be used.
MmDivDn	High	Qualifies the relationship within the change in direction of the indicator and the subsequent bar value to be recorded at that point.
MmDivUp	Low	Qualifies the relationship within the change in direction of the indicator and the subsequent bar value to be recorded at that point.

[Display Parameters](#)

ROC Divergence (RcDiv)

Philosophy

This study attempts to redefine divergence by allowing flexibility in the established mantras associated with the subject. The traditional interpretation is that if price is going in one direction and the momentum indicator in the opposite direction, divergence is occurring and suggests that the trend is ending. The reality is of this basic theory is that all but the strongest trends will diverge and often give false exit signals to trend following trades and false reversal signals against the trend.

The increased flexibility derives from the ability to not only look for divergence on the indicator itself, but replace this with a moving average of the indicator in or order to smooth out and reduce the number of turning points. The traditional mantra looks at absolute highs and lows of price to define divergence but this study enables the trader to select what price should be used to qualify. This means if for example the relationship of the close instead of high and lows is used, it reveals the ability to quantify divergence in sideways markets in order to produce and early warning to a break out and new trend. This is referenced as divergence as a continuation. This use of different momentum indicators and variables of them to create divergence enables the trader to define how aggressive or conservative they wish there signals to be.

Interpretation

Each momentum indicator used for divergence has different characteristics and therefore different trading opportunities. Rate of Change is a rather sensitive indicator that has a close correlation with the price action of the market itself. The default settings interpret divergence by isolating a change in direction of the Rate of Change or the moving average of Rate of Change, and at that moment recording the value of the study itself and the default value of the bar. Divergence is qualified when they move in opposite directions on a certain number of consecutive occasions. A positive divergence is revealed by a red line recording a value of one and a blue line a negative signal. This highlights how the raw code is primarily of use as an exit tool to existing trend following trades. However, the building of code within the formula tool box enables traders to increase the accuracy of divergence qualification by focusing on the absolute value of the Studies or |bar values and creating more exact threshold parameters.

For more information about Trading Time, go to <http://www.cqg.com/AdditionalInfo/About-CQG/Trading-Time.aspx>.

Additional study information is here: http://www.cqg.com/Docs/Trading_Time.pdf.

Shaun has also created a [helpful video](#) about quantifying divergence. Please go to <http://www.cqg.com/Docs/HelpFlash.swf>.

RcDiv Parameters

Name	Default	Definition
N	1	Number of divergence patterns that are needed to produce a signal. Most only need 1 and will not produce signals if increased.
Period	5	Qualifies a propriety area within which signals do not have to be symmetrical.
MA Period	1	This second period refers to the variable of the moving average. Setting it to a number beyond 1 means that the average is being used as the divergence tool and not the original indicator.
ROC Period	10	Period of ROC.
Lookback	25	Qualifies the lookback period for when divergence can occur within. Increasing the number will normally increase the number of divergence signals and for slow moving indicators should be raised from the default.
MA Type	Sim	Qualifies the type of moving average to be used.
RcDivDn	High	Qualifies the relationship within the change in direction of the indicator and the subsequent bar value to be recorded at that point.
RcDivUp	Low	Qualifies the relationship within the change in direction of the indicator and the subsequent bar value to be recorded at that point.

[Display Parameters](#)

RSI Divergence (RsDiv)

Philosophy

This study attempts to redefine divergence by allowing flexibility in the established mantras associated with the subject. The traditional interpretation is that if price is going in one direction and the momentum indicator in the opposite direction, divergence is occurring and suggests that the trend is ending. The reality is of this basic theory is that all but the strongest trends will diverge and often give false exit signals to trend following trades and false reversal signals against the trend.

The increased flexibility derives from the ability to not only look for divergence on the indicator itself, but replace this with a moving average of the indicator in or order to smooth out and reduce the number of turning points. The traditional mantra looks at absolute highs and lows of price to define divergence but this study enables the trader to select what price should be used to qualify. This means if for example the relationship of the close instead of high and lows is used, it reveals the ability to quantify divergence in sideways markets in order to produce an early warning to a break out and new trend. This is referenced as divergence as a continuation. This use of different momentum indicators and variables of them to create divergence enables the trader to define how aggressive or conservative they wish their signals to be.

Interpretation

Each momentum indicator used for divergence has different characteristics and therefore different trading opportunities. Rsi is a rather sensitive indicator that has a close correlation with the price action of the market itself. The default settings interpret divergence by isolating a change in direction of the Rsi or the moving average of Rsi, and at that moment recording the value of the study itself and the default value of the bar. Divergence is qualified when they move in opposite directions on a certain number of consecutive occasions. A positive divergence is revealed by a red line recording a value of one and a blue line a negative signal. This highlights how the raw code is primarily of use as an exit tool to existing trend following trades. However, the building of code within the formula tool box enables traders to increase the accuracy of divergence qualification by focusing on the absolute value of the Studies or |bar values and creating more exact threshold parameters.

For more information about Trading Time, go to <http://www.cqg.com/AdditionalInfo/About-CQG/Trading-Time.aspx>.

Additional study information is here: http://www.cqg.com/Docs/Trading_Time.pdf.

Shaun has also created a [helpful video](#) about quantifying divergence. Please go to <http://www.cqg.com/Docs/HelpFlash.swf>.

RsDiv Parameters

Name	Default	Definition
N	1	Number of divergence patterns that are needed to produce a signal. Most only need 1 and will not produce signals if increased.
Period	5	Qualifies a propriety area within which signals do not have to be symmetrical.
MA Period	1	This second period refers to the variable of the moving average. Setting it to a number beyond 1 means that the average is being used as the divergence tool and not the original indicator.
RSI Period	9	Period of RSI.
Lookback	25	Qualifies the lookback period for when divergence can occur within. Increasing the number will normally increase the number of divergence signals and for slow moving indicators should be raised from the default.
ob	75	Reflects the fact that the study has a limit of scale, so the use of setting an overbought and oversold threshold acts as reset point where the current divergence process ends. Setting at 100 and 0 means no reset can occur.
os	25	Reflects the fact that the study has a limit of scale, so the use of setting an overbought and oversold threshold acts as reset point where the current divergence process ends. Setting at 100 and 0 means no reset can occur.
MA Type	Sim	Qualifies the type of moving average to be used.
RsDivDn	High	Qualifies the relationship within the change in direction of the indicator and the subsequent bar value to be recorded at that point.
RsDivUp	Low	Qualifies the relationship within the change in direction of the indicator and the subsequent bar value to be recorded at that point.

[Display Parameters](#)

Stochastic Divergence (StDiv)



Philosophy

This study attempts to redefine divergence by allowing flexibility in the established mantras associated with the subject. The traditional interpretation is that if price is going in one direction and the momentum indicator in the opposite direction, divergence is occurring and suggests that the trend is ending. The reality of this basic theory is that all but the strongest trends will diverge and often give false exit signals to trend following trades and false reversal signals against the trend.

The increased flexibility derives from the ability to not only look for divergence on the indicator itself, but replace this with a moving average of the indicator in or order to smooth out and reduce the number of turning points. The traditional mantra looks at absolute highs and lows of price to define divergence but this study enables the trader to select what price should be used to qualify. This means if for example the relationship of the close instead of high and lows is used, it reveals the ability to quantify divergence in sideways markets in order to produce and early warning to a break out and new trend. This is referenced as divergence as a continuation. This use of different momentum indicators and variables of them to create divergence enables the trader to define how aggressive or conservative they wish there signals to be.

Interpretation

Each momentum indicator used for divergence has different characteristics and therefore different trading opportunities. Slow Stochastic is a rather sensitive indicator in its original default setting in that has a close correlation with the price action of the market itself, especially in its relationship to the close to the high or low of the bar. The default settings

interpret divergence by isolating a change in direction of the Stochastic %K or effectively the moving average of Stochastic %K, which is by default the Stochastic %D. At that moment the value of the study itself and the default value of the bar is recorded. Divergence is qualified when they move in opposite directions on a certain number of consecutive occasions. A positive divergence is revealed by a red line recording a value of one and a blue line a negative signal. This highlights how the raw code is primarily of use as an exit tool to existing trend following trades. However, the building of code within the formula tool box enables traders to increase the accuracy of divergence qualification by focusing on the absolute value of the Studies or |bar values and creating more exact threshold parameters.

For more information about Trading Time, go to <http://www.cqg.com/AdditionalInfo/About-CQG/Trading-Time.aspx>.

Additional study information is here: http://www.cqg.com/Docs/Trading_Time.pdf.

Shaun has also created a [helpful video](#) about quantifying divergence. Please go to <http://www.cqg.com/Docs/HelpFlash.swf>.

StDiv Parameters

Name	Default	Definition
N	1	Number of divergence patterns that are needed to produce a signal. Most only need 1 and will not produce signals if increased.
Period	5	Qualifies a propriety area within which signals do not have to be symmetrical.
MA Period	1	This second period refers to the variable of the moving average and therefore what is normally regarded as the Stochastic %d value . Setting it to a number beyond 1 means that the average is being used as the divergence tool and not the original indicator.
Lookback	25	Qualifies the lookback period for when divergence can occur within. Increasing the number will normally increase the number of divergence signals and for slow moving indicators should be raised from the default.
ob	70	These reflect the fact that the study has a limit of scale, so the use of setting an overbought and oversold threshold acts as reset point where the current divergence process ends. Setting at 100 and 0 means no reset can occur.
os	30	These reflect the fact that the study has a limit of scale, so the use of setting an overbought and oversold threshold acts as reset point where the current divergence process ends. Setting at 100 and 0 means no reset can occur.
MA Type	Sim	Qualifies the type of moving average to be used. Note this should be set to smoothed if trying to be unformed with the Stochastic %K.
StDivDn	High	Qualifies the relationship within the change in direction of the indicator and the subsequent bar value to be recorded at that point.

Name	Default	Definition
StDivUp	Low	Qualifies the relationship within the change in direction of the indicator and the subsequent bar value to be recorded at that point.
Period S STO	10	STO Period of Stochastic.
Period S STO %K	3	STO %K Period of Stochastic.

[Display Parameters](#)

Trix Divergence (TrxDiv)

Philosophy

This study attempts to redefine divergence by allowing flexibility in the established mantras associated with the subject. The traditional interpretation is that if price is going in one direction and the momentum indicator in the opposite direction, divergence is occurring and suggests that the trend is ending. The reality is of this basic theory is that all but the strongest trends will diverge and often give false exit signals to trend following trades and false reversal signals against the trend.

The increased flexibility derives from the ability to not only look for divergence on the indicator itself, but replace this with a moving average of the indicator in or order to smooth out and reduce the number of turning points. The traditional mantra looks at absolute highs and lows of price to define divergence but this study enables the trader to select what price should be used to qualify. This means if for example the relationship of the close instead of high and lows is used, it reveals the ability to quantify divergence in sideways markets in order to produce and early warning to a break out and new trend. This is referenced as divergence as a continuation. This use of different momentum indicators and variables of them to create divergence enables the trader to define how aggressive or conservative they wish there signals to be.

Interpretation

Each momentum indicator used for divergence has different characteristics and therefore different trading opportunities. One of the main characteristics of the Triple Exponential is the relative slowness in directional volatility in relationship to many other momentum indicators. This means that divergence can take far longer to be evident and therefore the default setting for the Lookback period is quadruple of what many of the other indicators default is. At that moment the value of the study itself and the default value of the bar are recorded. Divergence is qualified when they move in opposite directions on a certain number of consecutive occasions. A positive divergence is revealed by a red line recording a value of one and a blue line a negative signal. This highlights how the raw code is primarily of use as an exit tool to existing trend following trades. However, the building of code within the formula tool box enables traders to increase the accuracy of divergence qualification by focusing on the absolute value of the Studies or |bar values and creating more exact threshold parameters.

For more information about Trading Time, go to <http://www.cqg.com/AdditionalInfo/About-CQG/Trading-Time.aspx>.

Additional study information is here: http://www.cqg.com/Docs/Trading_Time.pdf.

Shaun has also created a [helpful video](http://www.cqg.com/Docs/HelpFlash.swf) about quantifying divergence. Please go to <http://www.cqg.com/Docs/HelpFlash.swf>.

TrxDiv Parameters

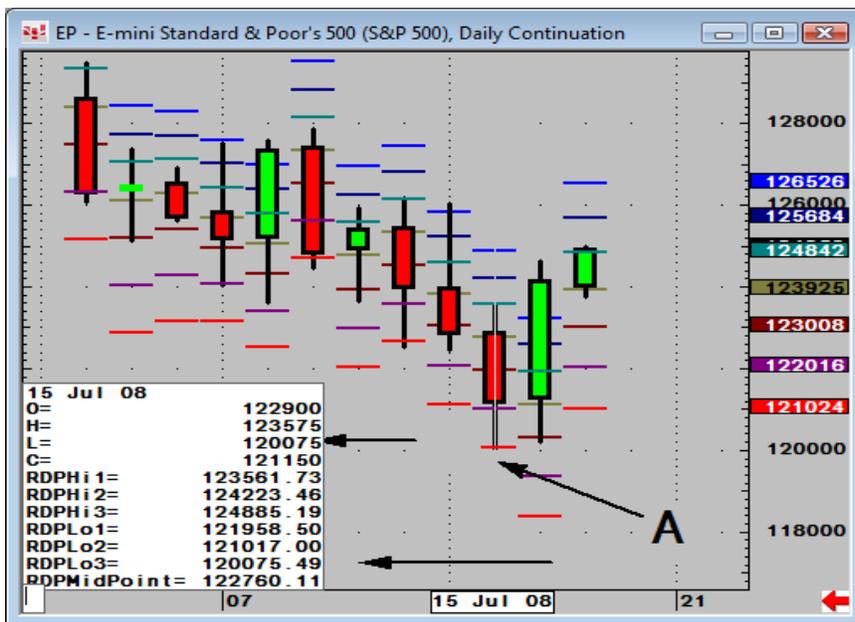
Name	Default	Definition
N	1	Number of divergence patterns that are needed to produce a signal. Most only need 1 and will not produce signals if increased.
Period	5	Qualifies a propriety area within which signals do not have to be symmetrical.
MA Period	1	This second period refers to the variable of the moving average and therefore what is normally regarded as the Stochastic %d value . Setting it to a number beyond 1 means that the average is being used as the divergence tool and not the original indicator.
Trix Period	14	Period of Trix.
Lookback	100	Qualifies the lookback period for when divergence can occur within. Increasing the number will normally increase the number of divergence signals and for slow moving indicators should be raised from the default.
MA Type	Sim	Qualifies the type of moving average to be used.
TrxDivDn	High	Qualifies the relationship within the change in direction of the indicator and the subsequent bar value to be recorded at that point.
TrxDivUp	Low	Qualifies the relationship within the change in direction of the indicator and the subsequent bar value to be recorded at that point.

[Display Parameters](#)

Commentary by Shaun Downey

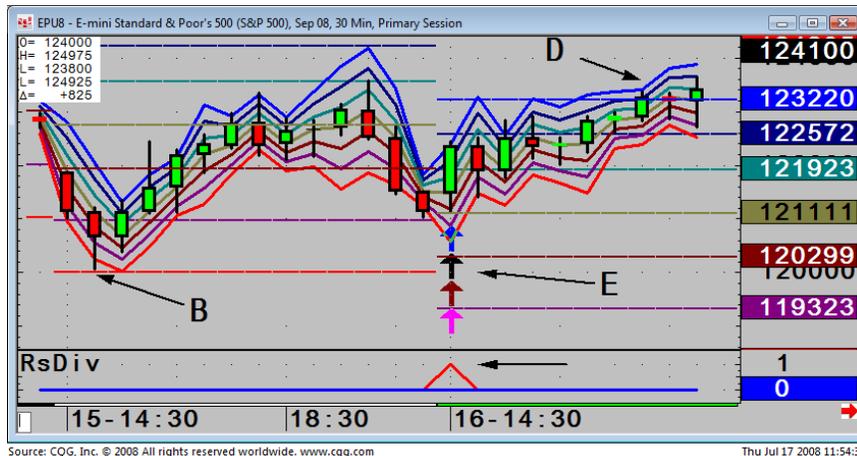
The Downey suite of studies quantify many technical scenarios but one of the more popular strategies is linking limits of range for the trading day, and connecting this with the limit of range on multiple timeframes for a specific time of that day. These levels present optimum points for profit taking on trend following trades and also provide low risk counter trend opportunities. The various divergence based concepts can then be added for additional confirmation or subsequent fresh trend following positions. The recent low in the S&P after weeks of selling is a prime example of the ability to trade with high volume as risk is so tightly defined in spite of the increased volatility.

The four charts highlight how the studies combine. The first chart shows a daily S&P and uses the Range Deviation Pivots. These have an inbuilt volatility skew that means in trends risk is tightened against the trend and widened with it. The 3rd deviation represents the normalized trend skewed limit of range for the day. Point A shows that the limit was 1200.75 and this proves to be the low of the day to the tick.

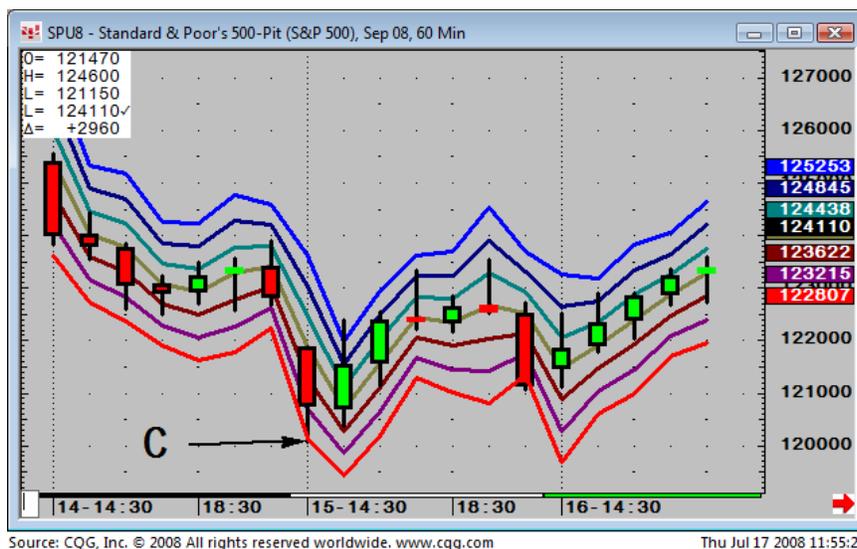


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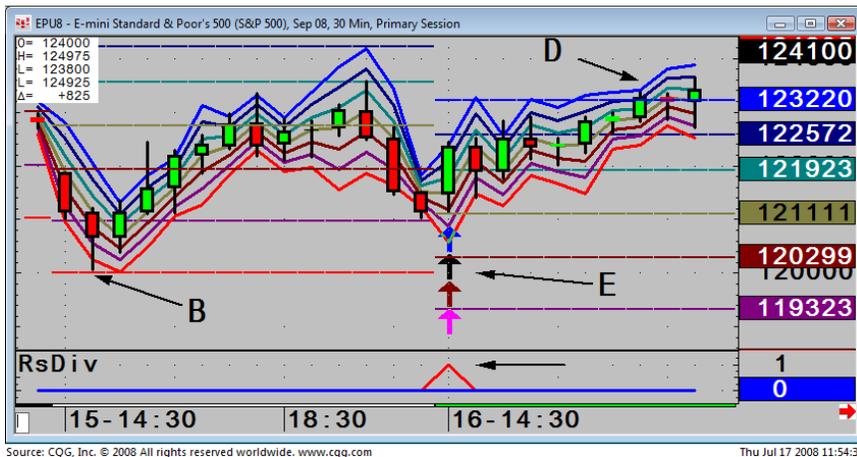
The second chart is a 30 minute and uses the Volatility Time Bands with compute 1, 2 and 3 deviations around the opening price and quantify what is normalized and extreme behavior for that specific time of day. At point B the 3rd Band represents that limit and when is combined with Range Deviation daily limit, provides a low risk opportunity.



The third chart shows the power of multiple timeframe extremes as at Point C the 60 minute is also at the 3rd Deviation that was at Point B in the 30 minute chart. All three separate timeframes are all signaling an extreme at the same time.



The second and fourth charts at Points in E, D and F highlight the combination of divergence entry's and then the optimum exit point for a day trade. The 4 arrows at Point E are multiple divergences placed through the Rsi. The pattern does not reference absolute high lows for quantifying divergence, but looks for divergence through a variety of relationships beyond that, such as the High/Low/Close divided by 3 and looks for multiple pattern synergies on the same bar. This means that divergence can be signaled not just against the trend, but in sideways, thereby signaling an imminent break out, or as divergence as a continuation of the existing trend.



The 4th chart at Point F shows that a whole range of difference studies are all diverging at the same point as the multiple pattern Rsi was. These are the Macd, Rate or Change, Rsi and Dmi, thus providing a powerful multiple indicators based trade. Finally at Point D on the previous chart the limits of the day are reached with the 3rd Range Deviation combing with the 3rd Volatility Time Band for the optimum day trade exit point.



SMR Studies

Momentum trading can accurately anticipate the direction and duration of “breaking” price moves by closely analyzing how quickly (or how slowly) a price is changing in a market. Used properly, momentum trading will not only protect against the two biggest market stimulants, fear and greed, but will actually capitalize on them.

This section is a step-by-step momentum-trading guide for anyone trading stocks or commodities. Whether you are an individual speculator, a broker, a CTA (Commodity Trading Advisor), or a fund manager, this analysis will be beneficial to you.

The following pages contain an analysis of the price behavior and movement of different markets. The CQG charts in this manual have been analyzed using the SMR method of trading, and it is our hope that you will spend the time necessary to learn the SMR trading rules presented in this manual. The SMR Trading System will give you a totally new perspective on how to trade using momentum oscillators.

“Charts are records of past market movements. The future is but a repetition of the past; there is nothing new. History repeats, and with charts and rules we determine when and how it is going to repeat.” —W. D. Gann

The SMR trading philosophy is centered on the 49-Day Moving Average as the Main Trend Indicator and the SMR Timing Oscillators.

These components provide you with the tools necessary to time and plan your trades using the SMR trading rules. To trade a particular market, we feel that the best odds occur when a market is STRONGLY TRENDING, either up or down. Once the trend has been established, you should use the SMR Timing Oscillators as a timing device to time your trades into the market.

Studies include:

- [Cluster](#)
- [DL Turning Point, MA Turning Point, and SL Turning Point](#)
- [Lines](#)
- [Take Profit](#)
- [Timing Oscillators A](#)
- [Timing Oscillators BC](#)
- [Timing Oscillators DEF](#)

Trend Direction

The trend of a market is an illustration of the dominant buying and selling forces of traders all over the world. It is a very reliable measure of supply and demand; the relationship between supply and demand is shown by the ups and downs of the market. When supply exceeds demand, prices will decline to a level where supply and demand are approximately equal. And conversely, when demand exceeds supply, prices will rise to a level at which supply and demand reach equilibrium. When a market is in an equilibrium stage, the daily price ranges become narrow, which we call “congestion” or “chop,” and it may take weeks or months to determine in which direction the next trend will be.

The **SMR 49-Day Moving Average** is used to identify trend direction and/or market congestion. The 49-Day Moving Average stems from one of the master traders of our time,

W.D. Gann. Gann said that "The number seven is the most referred to of any number in the Bible," and that the square of seven, which is forty-nine (49), brings about contraction and should be considered a death zone number. We have noticed that changes in trend tend to occur when price action trades through, or fails to trade through, the 49-Day Moving Average. A simple look at any stock or commodity chart, with the 49-Day Moving Average overlaid, will confirm this statement.

Trend Identification

The SMR studies offer 3 methods of trend identification:

- Up Trend
- Down Trend
- Congestion

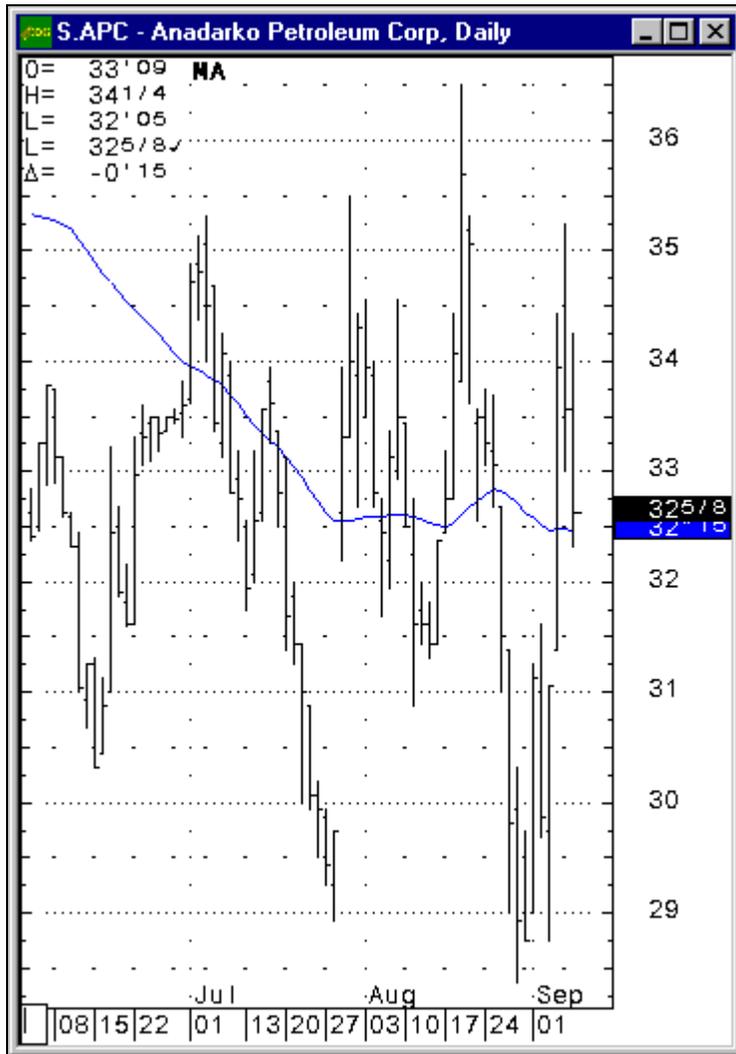
In this example below, the 49-Day Moving Average, represented by the solid line, is trending at an upward angle. The steeper the angle, the stronger the trend. The market price action tends to stay above the 49-Day Moving Average in an upward trend.



This example below illustrates a downward trend. In this case, the market price action tends to stay below the 49-Day Moving Average.



In the example below, the 49-Day Moving Average is trending in a somewhat horizontal direction (congestion). The price action of the market is moving back and forth across the moving average line, and is changing directions frequently.



Trend Change Identification Methods

Price Puncture Method: The earliest trend change indicator is when the price crosses over and closes on the other side of the 49-Day Moving Average. Many traders look to buy or sell breaks through the 49-Day Moving Average, and often the move is strong enough to be profitable. Although movement through the 49-Day Moving Average is a quick and easy way to identify a possible trend reversal, markets that trade at or close to this area tend to “whipsaw” or be choppy, and should be approached with caution. Figure 4 shows a down-trending market where a price puncture has occurred.



Five Consecutive Day Method: Another early indication of a trend change is when the market has at least five consecutive closes on the opposite side of the 49-Day Moving Average, as shown in Figure 5. Waiting five days will eliminate some of the risk associated with false signals experienced by using the Price Puncture Method.



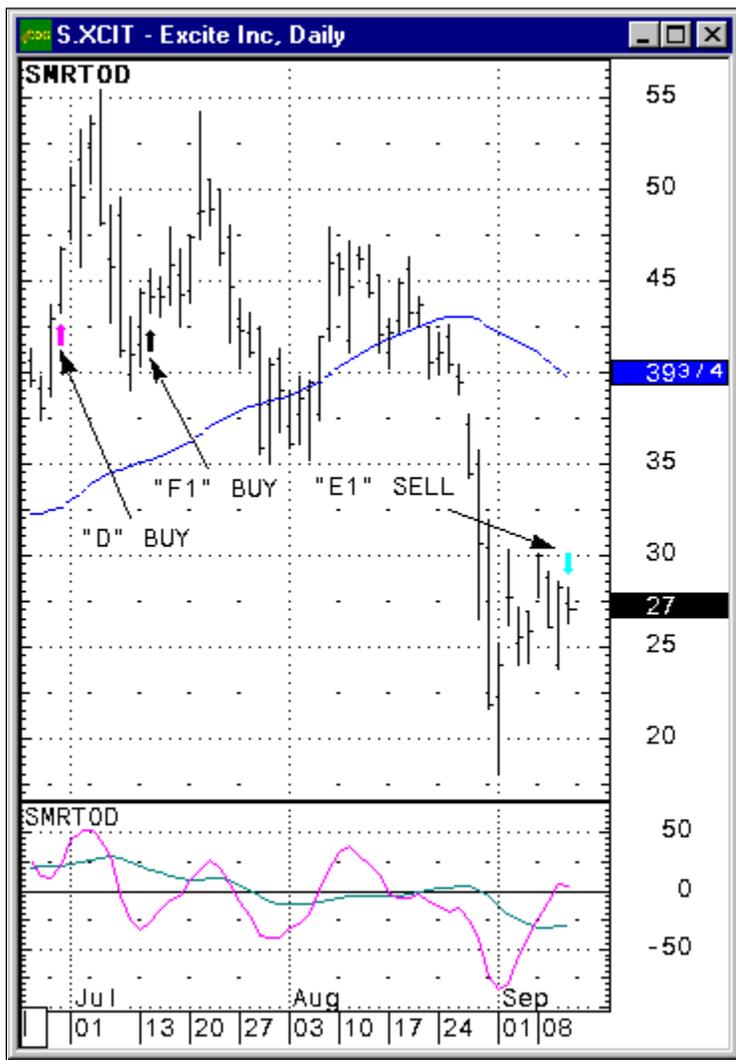
Moving Average Method: This method is the most conservative of the three approaches and is identified by the moving average itself reversing direction. Figure 6 is an example of a downtrending market that has reversed. Notice that now the price action is above the 49-Day Moving Average. While the actual reversal of the moving average is by far the most reliable indicator, it is less timely since the signal often occurs well after a move has begun.



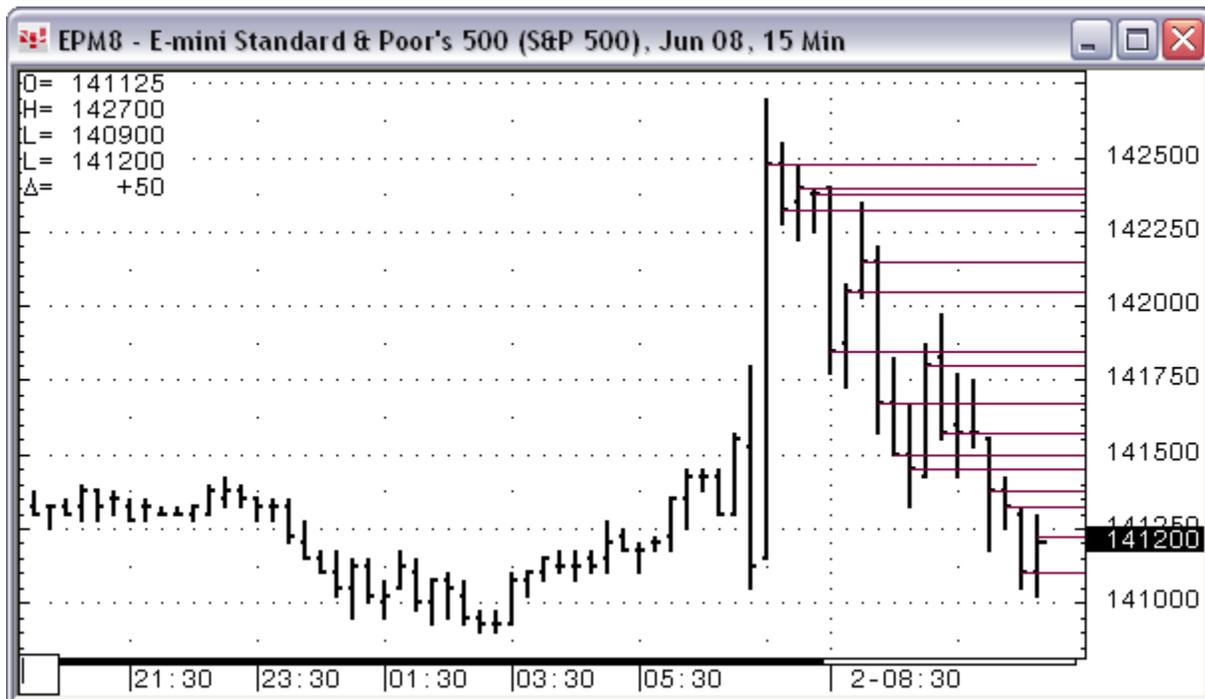
SMR Trading Patterns

Mechanical trading signals can be presented on your COG charts. These signals are represented by up (buy) and down (sell) arrows (see example below), where different colors denote different signals. The trading rules for the SMR signals are objective and very conservative.

As you become more adept at recognizing these patterns, you may wish to relax the rules somewhat, or use your own interpretation. One exceptional feature of the SMR charting service is that you can develop your own trading patterns as you study oscillator and price action movement. You may wish to implement your own successful trading system by using the SMR basics, as many other dedicated traders have.



Cluster: A Stop Loss Tool (SMRCtr)



No matter what technical system you use, always remember the first rule of successful trading and investing: **CUT YOUR LOSSES SHORT**. The SMR Cluster Tool (SMRCL) was developed to help you quickly find basic support and resistance levels in a market, which in turn will help in the placement of the stop loss order.

You begin by choosing which price levels you want the cluster tool to use: Highs, Lows, Closes, Etc. You then decide over which time period you want the SMRCtr to scan. After you have clicked on the SMRCtr and chosen the appropriate time periods, market values will begin to appear on the chart (Figure 14). You will see re-occurring values that can be identified as support, if they are under the current market price, or resistance, if they are above the current market price. Your stop loss orders can now be placed at levels above resistance or below support. Also keep in mind, to always place your stop order far enough away from the current price, so that normal price fluctuation will not stop you out. When you are trading with the trend and using the SMR Momentum Indicators, the market shouldn't go an average daily range against you. While you don't want your stop too tight, you also don't need to place it too far away, especially if you have entered the trade correctly.

No one can trade or invest without losses. Danger is always present in every trade that you make, whether it is for investment purposes or speculation. Once in the market, you must be constantly on your guard, always expecting the unexpected. Stop loss orders are a mark of a professional attitude, one that acknowledges the ability to falter and has the wisdom of money management.

An essential part of trading a market is for a trader to make a commitment only if the probable profit exceeds the potential risk. A stop order should be placed on every trade you make, and the placement price should be determined before a commitment to a market is made. Once you have entered a trade, there is a tendency to change the way you look at it. So, if you have not placed a stop prior to entering a market, you may not be able to determine the correct

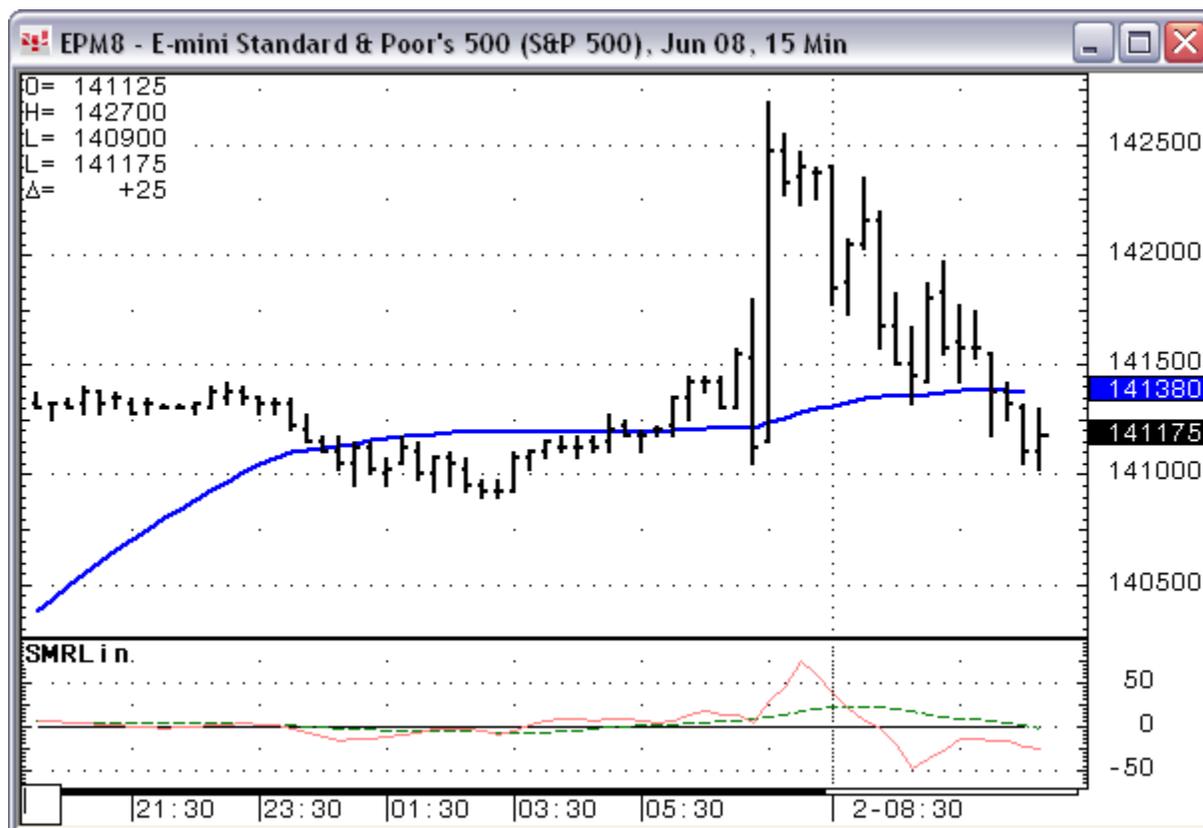
placement for the stop or you may not even place it at all. Stop orders are an aid to judgment, allowing a trader to operate with less concern and more mental poise. We cannot overemphasize that stop loss orders should be used with every transaction. You should never carry a trade through a losing period just to prove to yourself and/or others that you were right. This type of trading will sooner or later eat up all of your trading capital.

Cluster Parameters

Parameters are:

- [Color and Weight](#)
- **Period:** Allows the user to choose the number of days to be evaluated.
- **Value:** The value used for the projection line. The user may choose either the Open, High, Low, or Close.
- **Date**
- **Time**
- **ID:** Includes a checkbox to allow the user to choose Current Only.
- **IdWt:** Sets the thickness for the Id label.
- **ScaleLabel:** If selected the vertical scale values for the lines will be highlighted.

Line Study (SMRLin)



The SMR Line Study consists of 3 curves:

- SMR Moving Average (SMRMA) displayed as an overlay
- SMR Solid Line (SL)
- SMR Dotted Line (DL) oscillators displayed in an add-on windowpane

Parameters for SMR Line Study Parameters

Parameters are:

- [Color, Weight, and Display](#)
- [MarkIt](#)
- **Speed:** Speed of the indicator. Select very fast, fast, standard, slow, or very slow.

Take Profit: A Profit-Taking Tool (SMRTpr)

Almost equally important as a stop loss order is the target price or take profit order. When entering into a trade you must ask yourself two questions: "How much can I reasonably take out of this market?" and "How far can I reasonably expect this market to move?" Even the best trading signals can be worthless if no money management is implemented.

The volatility of a market can be a crucial factor when calculating whether a trade is worth putting on. After evaluating where a safe stop should be placed, you must next determine if the market has enough room to move in the direction you are trading without hitting major support or resistance. If the risk / reward ratio is not in your favor, then you should not enter the trade. As a general rule of thumb, your reward should always be more than your risk; otherwise, you stand little chance of surviving as a trader. The SMR Take Profit (SMRTP) was developed to determine how far a trade could move with or against you in one day.

When you use the SMRTP you will need to choose what time period you will be evaluating. Usually, the last ten days are used; however, the best results are obtained by analyzing different time periods in order to find common results. Once the time period is chosen, placing the results on the chart will show you possible trading ranges for the current or next day. The results show the minimum, average, and maximum daily ranges for the selected time period; these values can be viewed in either market points or dollars. The placement of the SMRTP is crucial in determining if and when you may want to take profit. For example, if you were studying the markets at the end of the day, you would usually place the results at the close of that day. You could then see what the potential outcomes are for the following day (e.g. maximum day with you, minimum day against you, etc.) If you are using the SMRTP during the day, you may want to use the intra-day high or low to place the results, assuming that the high or low is potentially the high or low of the day.

The example here is Sept Natural Gas. If you had been trading the short-term momentum indicator and caught the correction to the upside, you probably would be a little nervous holding a very volatile, expensive market against the major trend. The SMRTP indicator shows that Aug 17th daily range exceeds the maximum daily range for the time period of Aug 3rd to Aug 16th (10 trading days). If you are having doubts about a trade, you should have no problem taking profit near the maximum daily range; anything more is just greed and will hurt you in the long run.



Again, you always want to go for more than what you risk, but in reality trades don't always go quite as anticipated. Using the SMRTP will give you an unbiased view about the potential of a trade. If you are not feeling good about a trade and/or the momentum of the market has slowed, remember you will never go broke by taking profit.

Take Profit Parameters

Parameters are:

- **Value:** The value used for the projection line. Choose either the **Open, High, Low,** or **Close.**
- **Date:** The date used for the projection line.
- **Time:** The time used for the projection line.
- **Period:** Choose the number of days to be evaluated.
- **Type:** Choose **Up, Down** or **Full.**
- **Unit:** Choose **Tick, Price** or **Dollar.**
- [Display](#)
- **Id:** Choose whether the line labels should be justified left or right.
- **IdWt:** Thickness of Id label.
- **ScaleLabel:** If selected, the vertical scale values for the lines will be highlighted.

SMR Turning Point Indicators (SMRDLT) (SMRMAT) (SMRSLT)

After you have familiarized yourself with the oscillators and begin to gain confidence in recurring patterns, the SMR Turning Point Indicators can be utilized for anticipating potential setups or exits from current trades. We use three turning point indicators—the SMR Solid Line Turning Point, the SMR Dotted Line Turning Point, and the SMR Moving Average Turning Point.

In this section, we have focused on the SMRSLTP for all of our examples. However, all three indicators use the same general principles, their differences are in their time frames (e.g. short, intermediate, and long term).

Clicking the SMRSLTP button in COG, will bring up two tick marks—the first tick represents today's SMRSLTP, and the second tick represents tomorrow's SMRSLTP. The SMRSLTP is the value at which the market would have to close in order for the SL to change direction, either up or down. Although you can't determine from our examples which is up and which is down, if you were viewing your screen an SMRSLTP Down indicator would be a red tick mark and an SMRSLTP Up indicator would be a blue tick mark. Knowing these values will not only help in your anticipation of entering excellent momentum trades, but can also help in determining when a trade may be coming to an end or where a stop should be placed in order to guard against a change in momentum.

The example below is a chart of the Sept S&P 500 futures. If you are looking to go short the S&P and want to enter the market when the short-term momentum has changed and begins to turn back down, watching the SMRSLTP is crucial. As you can see the SL is headed up from an oversold condition. The SMRSLTP is showing that the market would have to close today at about 1080 in order for the SL to turn down. And if the market closes at its current price of 1102 then it would have to get down to about 1051 tomorrow for the SL to turn down. In other words, the closing price is getting further away from the SL turning point. Based on these observations, we would not recommend selling the S&P 500 just yet.



The example below is a chart of Sept Crude Oil. Like the S&P you would be looking for an entry into the market by following the 49-Day Moving Average and the DL, and using the SL as the shorter-term trigger. The SMRSLTP indicates that the SL will turn down if the market closes below 1298 today. And at its current price of 1302, the market would just have to stay below 1320 tomorrow, in order for the SL to turn down. In this instance, Crude Oil looks like a great sell!



This example is a chart of the US Treasury Bonds. The market over the last week has been choppy and the SL is approaching "0" Zero Line, when this occurs the SL is very susceptible to market movement and can change direction on a dime. In this case the SMRSLTP is indicating that the SL will turn up if the Bonds close above 123-22 today, but will turn back down if they close below 124-19 tomorrow. Here is an example of when the SMRSLTP is not much help, don't overly depend on this indicator in choppy situations. If you decide to buy a market like this make sure to get out quickly if it's not moving in your direction within a reasonable length of time.



Turning Point Parameters

These parameters apply to Dotted Line Turning Point (SMRDLT), Moving Average Turning Point (SMRMAT), and Solid Line Turning Point (SMRSLT).

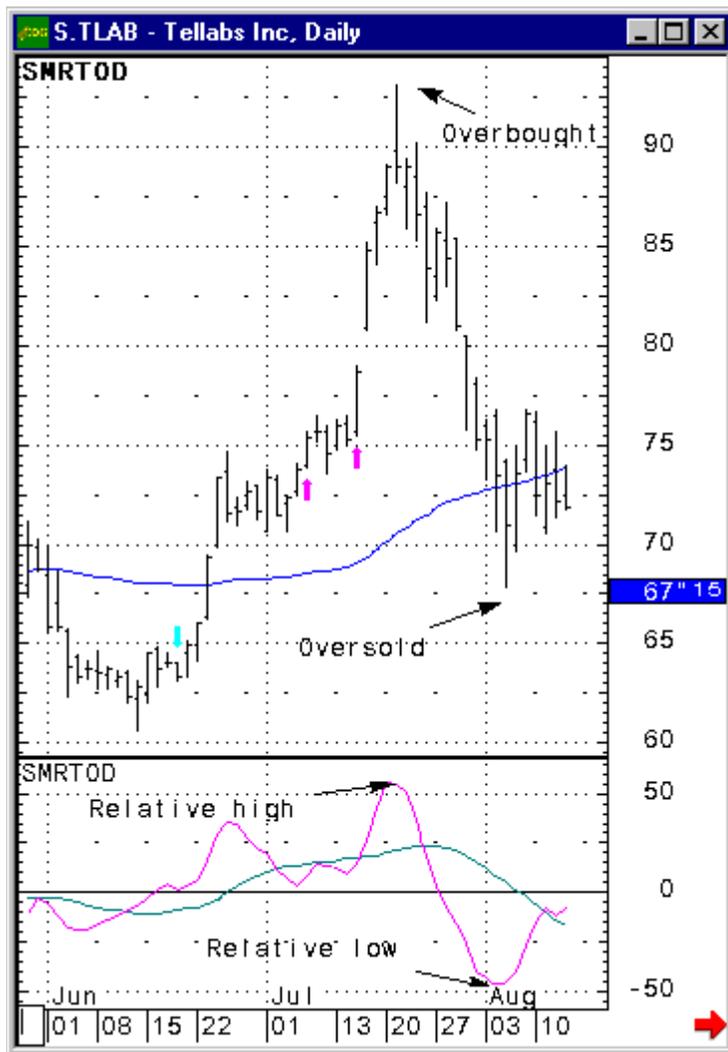
- [Color](#)
- [Weight](#)
- [MarkIt](#)
- **Speed:** Speed of the indicator. Select very fast, fast, standard, slow, or very slow.
- **Current Only**
- [Display](#)

SMR Timing Oscillators

This oscillator measures the speed at which a market advances or declines, helping to identify when an extreme in price has been reached.

It is a short-term oscillator that allows the investor a chance to identify low-risk buying or selling opportunities. On a basic level, the SL is a reliable indicator of overbought and oversold conditions.

The examples show that when the SL is relatively high or low, the market is overbought or oversold.

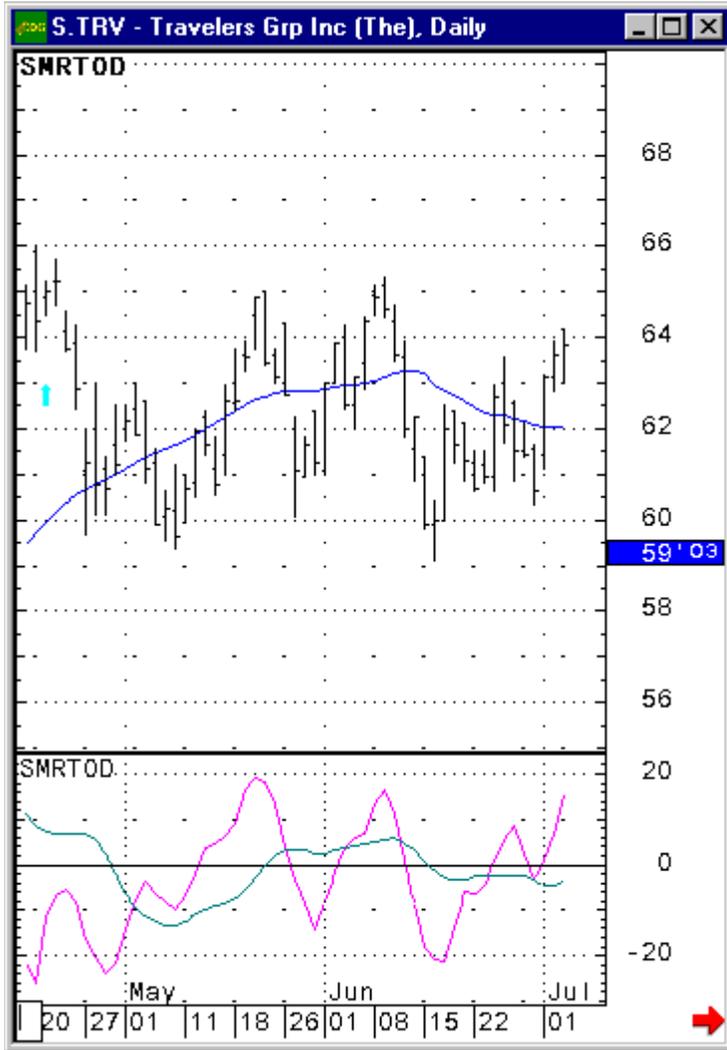


By studying the characteristics of this short-term price indicator, in conjunction with the SMR Dotted Line, you will see patterns emerge that will result in consistent price action.

The **SMR Dotted Line (DL)** is a slower moving oscillator and can be used to help identify the intermediate-term trend of the market. In a strongly up-trending market, (see example below) this oscillator will spend most of its time above the "0" Zero Line and just the opposite in a strongly down-trending market. In a congested market, the DL can be used to help identify which side of the market has more strength or momentum. If the DL is more consistently above the "0" Zero Line, then the market has more upside momentum. And if it is more consistently below the "0" Zero Line, then the market has more downside momentum. This will sometimes give you a leading indication as to which way the market may go when it comes out of congestion.



If the DL is moving at a somewhat horizontal angle, chopping back and forth on both sides of the "0" Zero Line, or holding just above or below the "0" Zero Line, shown here, the market has no momentum and should not be traded.



Timing Oscillator A (SMRTOA)

"A" Buy Signal

- The close is above the 49-Day MA and the market has closed above the 49-Day MA for five or more days.
- The 49-Day MA is headed up.
- The DL is 0 to -10.
- The SL Crosses above the DL.
- The close is greater than the previous days close.
- The close is greater than the close 11 trading days ago.

"A" Sell Signal

- The close is below the 49-Day MA and the market has closed below the 49-Day MA for five or more days.
- The 49-Day MA is headed down.
- The DL is 0 to +10.
- The SL Crosses below the DL.
- The close is less than the previous days close.
- The close is less than the close 11 trading days ago.

"A-1" Buy Signal

- The close is above the 49-Day MA and the market has closed above the 49-Day MA for five or more days.
- The 49-Day MA is headed up.
- The DL is 0 to +10.
- The SL Crosses above the DL.
- The close is greater than the previous days close.
- The close is greater than the close 11 trading days ago.

"A-1" Sell Signal

- The close is below the 49-Day MA and the market has closed below the 49-Day MA for five or more days.
- The 49-Day MA is headed down.
- The DL is 0 to -10.
- The SL Crosses below the DL.
- The close is less than the previous days close.
- The close is less than the close 11 trading days ago.

Timing Oscillator A Parameters

Parameters are:

- **Speed:** Speed of the indicator. Select very fast, fast, standard, slow, or very slow.
- **Signals:** Set Signal display preferences.

Timing Oscillator BC (SMRTOB)

"B" Buy Signal

- The close is above the 49-Day MA and the market has closed above the 49-Day MA for five or more days
- The 49-Day MA is headed up
- The DL is above the Zero Line ZL
- The DL is moving UP at +2 points or more for the last 3 days
- The SL has hooked up and is above the ZL but is below the DL

"B" Sell Signal

- The close is below the 49-Day MA and the market has closed below the 49-Day MA for five or more days
- The 49-Day MA is headed down
- The DL is below the ZL
- The DL is moving DOWN at +2 points or more for the last 3 days
- The SL has hooked down and is below the ZL but is above the DL

"B-1" Buy Signal

- The close is above the 49-Day MA and the market has closed above the 49-Day MA for five or more days
- The 49-Day MA is headed up
- The DL is above the ZL
- The DL is moving UP at +2 points or more for the last 3 days
- The SL has hooked up but is BELOW the ZL

"B-1" Sell Signal

- The close is below the 49-Day MA and the market has closed below the 49-Day MA for five or more days
- The 49-Day MA is headed down
- The DL is below the ZL
- The DL is moving DOWN at +2 points or more for the last 3 days
- The SL has hooked down but is ABOVE the ZL

"C" Buy Signal

- The close is above the 49-Day MA and the market has closed above the 49-Day MA for five or more days
- The DL is above the ZL
- The DL is moving UP at +2 points or more for the last 2 days
- The SL has hooked up and is ABOVE the ZL but is below the DL

"C" Sell Signal

- The close is below the 49-Day MA and the market has closed below the 49-Day MA for five or more days
- The DL is below the ZL
- The DL is moving DOWN at +2 points or more for the last 2 days
- The SL has hooked down and is BELOW the ZL but is above the DL

"C-1" Buy Signal

- The close is above the 49-Day MA and the market has closed above the 49-Day MA for five or more days
- The DL is above the ZL
- The DL is moving UP at +2 points or more for the last 2 days
- The SL has hooked up but is BELOW the ZL

"C-1" Sell Signal

- The close is below the 49-Day MA and the market has closed below the 49-Day MA for five or more days
- The DL is below the ZL
- The DL is moving DOWN at +2 points or more for the last 2 days
- The SL has hooked down but is ABOVE the ZL

Timing Oscillator BC Parameters

The one parameter is:

- **Signals:** Set Signal display preferences.

Timing Oscillator DEF (SMRTOD)

"D" Buy Signal

- The close is above the 49-Day MA and the market has closed above the 49-Day MA for five or more days
- The DL is above the ZL
- The DL is moving UP at less than 2 points per day or moving Horizontal
- The SL has hooked up and is ABOVE the ZL but is below the DL

"D" Sell Signal

- The close is below the 49-Day MA and the market has closed below the 49-Day MA for five or more days
- The DL is below the ZL
- The DL is moving DOWN at less than 2 points per day or moving Horizontal
- The SL has hooked down and is BELOW the ZL but is above the DL

"D-1" Buy Signal

- The close is above the 49-Day MA and the market has closed above the 49-Day MA for five or more days
- The DL is above the ZL
- The DL is moving UP at less than 2 points per day or moving Horizontal
- The SL has hooked up and is below the ZL

"D-1" Sell Signal

- The close is below the 49-Day MA and the market has closed below the 49-Day MA for five or more days
- The DL is below the ZL
- The DL is moving DOWN at less than 2 points per day or moving Horizontal
- The SL has hooked down and is above the ZL

"E" Buy Signal

- The close is above the 49-Day MA and the market has closed above the 49-Day MA for five or more days
- The DL is above the ZL
- The DL is moving DOWN at less than 2 points per day
- The SL has hooked up and is ABOVE the ZL but is below the DL

"E" Sell Signal

- The close is below the 49-Day MA and the market has closed below the 49-Day MA for five or more days
- The DL is below the ZL
- The DL is moving UP at less than 2 points per day
- The SL has hooked down and is BELOW the ZL but is above the DL

"E-1" Buy Signal

- The close is above the 49-Day MA and the market has closed above the 49-Day MA for five or more days
- The DL is above the ZL
- The DL is moving DOWN at less than 2 points per day
- The SL has hooked up and is below the ZL

"E-1" Sell Signal

- The close is below the 49-Day MA and the market has closed below the 49-Day MA for five or more days
- The DL is below the ZL
- The DL is moving UP at less than 2 points per day
- The SL has hooked down and is above the ZL

"F" Buy Signal

- The close is above the 49-Day MA and the market has closed above the 49-Day MA for five or more days
- The DL is above the ZL
- The DL is moving DOWN at 2 points or more per day
- The SL has hooked up and is ABOVE the ZL but is below the DL

"F" Sell Signal

- The close is below the 49-Day MA and the market has closed below the 49-Day MA for five or more days
- The DL is below the ZL
- The DL is moving UP at 2 points or more per day

The SL has hooked down and is BELOW the ZL but is above the DL

"F-1" Buy Signal

- The close is above the 49-Day MA and the market has closed above the 49-Day MA for five or more days
- The DL is above the ZL
- The DL is moving DOWN at 2 points or more per day
- The SL has hooked up and is below the ZL

"F-1" Sell Signal

- The close is below the 49-Day MA and the market has closed below the 49-Day MA for five or more days
- The DL is below the ZL
- The DL is moving UP at 2 points or more per day
- The SL has hooked down and is above the ZL

Timing Oscillator DEF Parameters

Parameters are:

- **Speed:** Speed of the indicator. Select very fast, fast, standard, slow, or very slow.
- **Signals:** Set Signal display preferences.

Trading the SMR Oscillator Checklist

1. **TREND:** What is the tradable major trend of this market?
 - UP - trade only from the long side.
 - DOWN - trade only from the short side.
 - CONGESTION - DO NOT trade this market.

2. TRADING PATTERN:

What trading pattern has setup? _____

(Example: "D1" SELL PATTERN)

If this trade is based on anticipation what is needed before you take this trade?

(Example: If the Japanese Yen can get down to 6900 it will turn the SL down. I would like to sell this market because the it is trading below the 49 Day Moving Average, the DL is all ready moving down, the momentum is down and the market won't run into major resistance until it get to the 6825 price level.)

3. ENTRY PRICE:

Long Entry Price: _____

(2) Short Entry Price: _____

4. STOP LOSS: At what price should I place my stop loss order?

[] Buy stop - I am selling the market. Stop Loss Price: _____

[] Sell stop - I am buying the market. Stop Loss Price: _____

5. RISK: What is the dollar amount of money I am going to risk on this trade?

Entry Price: _____ Minus Stop Loss Price: _____

Total Points Risked: _____ X \$ _____ = _____

6. REWARD: Is my target price reasonably obtainable. What is the dollar amount of money I am going for on this trade?

Target Price: _____ Minus Entry Price: _____

Total Points Gained: _____ X \$ _____ = _____

7. DECISION: Is this risk within my money management boundary?

[] YES - Go ahead with this trade.

[] NO - DO NOT enter this trade. I am risking more then I can reasonably get out of this trade. If I am stopped out, I will lose too much of my trading equity. Wait for another trade that has less risk and better reward

Are Your Stops Being Hit Too Often?

If your stop loss orders are being hit too frequently, here are some possible causes:

- Bucking the market trend.
- Through impatience, you anticipated a market change and entered a market before it gave a clear signal.
- Failing to decide in advance where the right points of support and resistance are located.
- Improperly placing your stops, moving a stop too soon, or moving it too close to the market price — Fear.
- Incorrectly judging the potential of a trade — Greed.
- Failing to weigh the risk / reward ratio properly.

If this is happening to you, you should review your judgments about potential market movements, and/or about where you have chosen to place your stop. **DO NOT**, under any circumstances, abandon the use of Stop Loss orders. If your stops continue to be hit too frequently, get out of the market and stay out until you have located the source of your difficulty.

Rather than becoming irritated at such a situation, be thankful. The stops are sending you a clear message that something in your technique is out of kilter. Persisting to defy the market will only damage your bank account, your confidence, and your ultimate goal of success.

Statware Studies

It is Kase and Company Inc.'s philosophy to view the markets scientifically and accurately without making the procedure for doing so too complex. Through the application of statistics and mathematics a whole new generation of indicators has been made possible.

Trading is primarily a function of three tasks: entry, money management and exit. You will find that the Indicators in the Kase StatWare package will help you perform all three tasks in a more efficient and successful manner.

Where many older indicators are based on empirical observations, we now have the ability to derive indicators from the natural structure of the market itself. Patterns that were difficult to observe with primitive tools now emerge for examination. A fitting analogy would be between two warriors facing off, one using a sling shot and the other using a modern assault rifle.

This section explains these indicators and gives traders an increased understanding of the markets to diminish risk and increase profits. Keep in mind that the Kase indicators are tools, which support a methodology, and not a black box system. A trader's personality and experience will play a role in the development of his or her ability to use Kase StatWare.

Studies include:

- [Color Coded Support System](#)
- [CD](#)
- [Candlestick Indicators](#)
- [DevStop](#)
- [Peak Oscillator](#)
- [Permission Screen](#)
- [Permission Stochastic](#)
- [Stop Amounts](#)

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Bars Constructed from Time

The first type of bar chart is constructed from time bars. We find the total number of minutes in a session and divide it by between 1/5 and 1/8.

Setting the Bar Length Charts

Our philosophy is to “scale-up” into trades using three chart lengths. We recommend using:

- a daily chart.
- a monitor chart consisting of 1/5 to 1/8 of a day.
- a timing chart with a bar length of 1/3 to 1/5 of the monitor chart.

Number of Minutes for Monitor Chart

Use a 1/5 - 1/8 of a day monitor chart. For example, if you are setting up a chart for a commodity, which trades for 325 minutes such as crude oil, this translates to 41 to 65 minutes.

Number of Minutes for Timing Chart

The timing chart should be 1/3 to 1/5 the length of the monitor chart. Simply take the number of minutes you have chosen for the monitor and divided by either 3 or 5 to find the appropriate timing chart length.

Bars Constructed from Tick Volume

There is a second way to set up bar charts. This type of chart is the constant volume bar chart, an improvement in traditional bar charting. Each tick represents one change in price. A constant volume bar, with the flat filter parameter checked, constructed using a tick count of 20, for example, would contain the price activity over 20 price changes or ticks.

Tick volume and time are similar measures in that both are proportional to the square root of volatility and risk.

A major advantage of constant volume bars is that they are more regular, building slowly when the market is quiet and quickly when the market is busy, and thus, due to lower variability, are less risky.

Setting the Number of Ticks for a Constant Volume Bar

1. In the command entry box, type in the number 55 and press Enter.
2. Count the number of bars per day.
3. If the number is greater than 8, increase the tick bar length to decrease the number of bars until the average number of bars per day appears to be between 5 and 8. Err on the side of having more bars, not less.

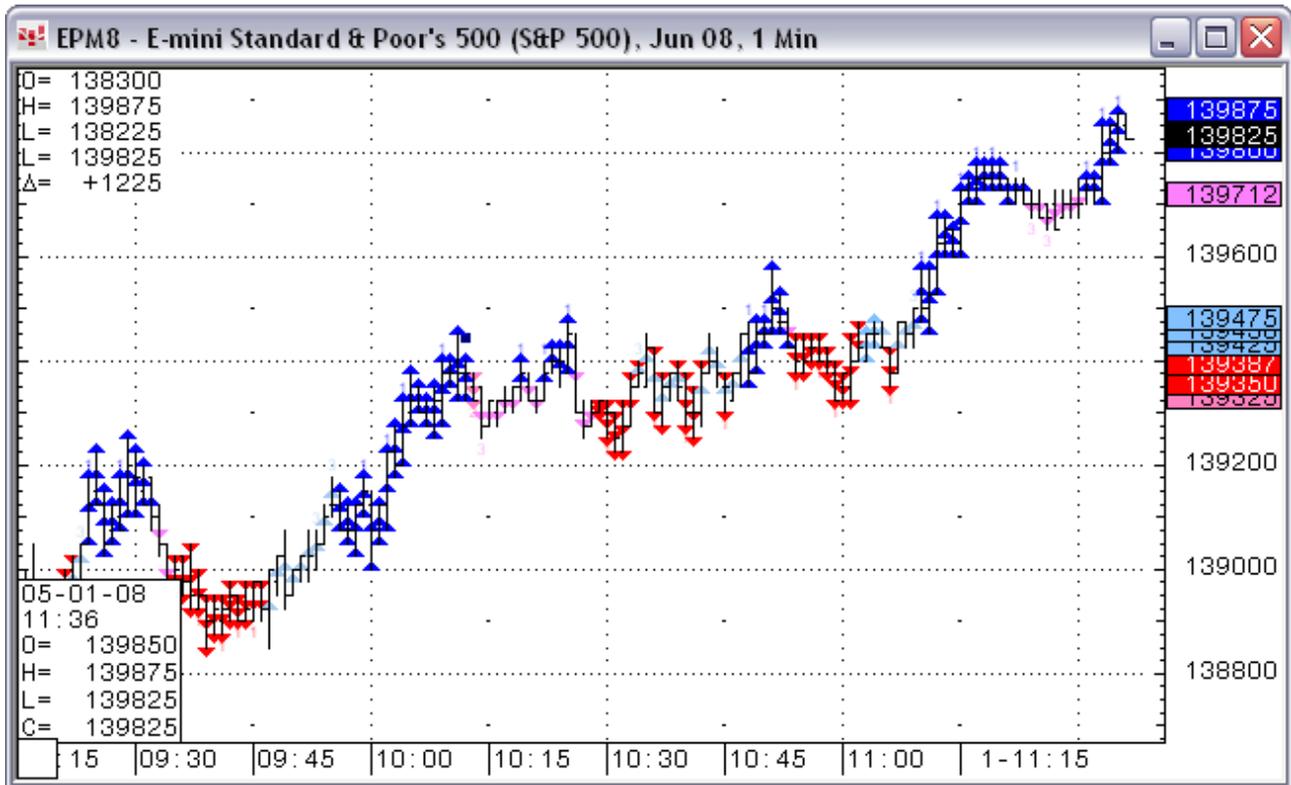
If possible, use Fibonacci numbers for your CVB bar length (3, 5, 8, 13, 21, 34, 55, 89, 144, etc.), adjusting as necessary.

Additionally, use the following suggested parameters for the Constant Volume Bars:

- Flat filtering
- Ticks (for the data setting)

Color Coded Support System (KCCSS)

KCCSS provides an at-a-glance method for gauging the strength of buy and sell signals, using blue shades for longs and red shades for shorts (or whatever colors you choose).



Longs

1st Class Longs

Philosophy: A first-class buy signal has occurred when traditional timing signals, one for each dot, have triggered AND have been permissioned long by the imbedded Permission Screen.

Interpretation: When three blue dots appear on a bar, a buy signal has occurred. Sometimes the size (range) of the bar will not be sufficient for all three blue dots to appear. In such cases, the color of the bar should be used to confirm the signal.

2nd Class Longs

Philosophy: Sometimes the Permission Stochastic does not trigger clear permission long rules. When the permission trigger is ambiguous, but traditional timing signals, one for each dot, have triggered, a 2nd class long signal has been generated.

Interpretation: Second-class buy signals are generated when 2 consecutive bars contain 2nd class long signals. The 2nd bar should exhibit a higher high and higher low.

3rd Class Danger Longs

Philosophy: A danger signal triggers when traditional timing signals, one for each dot, occur AND have NOT been permissioned by the imbedded Permission Screen.

Interpretation: Three consecutive danger bars constitute a buy signal, if the bars exhibit higher highs and higher lows, and vice versa for sell signals. The danger signal also can identify a pullback from which a second entry signal is generated. For example, a blue followed by a red danger then a new blue is a second signal. Conversely, a red followed by a blue danger then a new red is a second signal.

Shorts

1st Class Shorts

Philosophy: A first-class sell signal has occurred when traditional timing signals, one for each dot, have triggered AND have been permissioned short by the imbedded Permission Screen.

Interpretation: When three magenta dots appear on a bar, a sell signal has occurred. Sometimes the size (range) of the bar will not be sufficient for all three magenta dots to appear. In such cases, the color of the bar should be used to confirm the signal.

2nd Class Shorts

Philosophy: Inverse of 2nd Class Longs.

Interpretation: Inverse of 2nd Class Longs and Warnings to Shorts.

3rd Class Danger Shorts

Philosophy: A danger signal triggers when traditional timing signals, one for each dot, occur AND have NOT been permissioned by the imbedded Permission Screen.

Interpretation: Three consecutive danger bars constitute a buy signal, if the bars exhibit higher highs and higher lows, and vice versa for sell signals. The danger signal also can identify a pullback from which a second entry signal is generated. For example, a blue followed by a red danger then a new blue is a second signal. Conversely, a red followed by a blue danger then a new red is a second signal.

Warnings

Warnings to Shorts

Philosophy: On the Permission Stochastic "roll-over" effect, where, due to a sharp turn, the %D lags the %K to a great degree and does not trigger traditional permission rules, a warning is generated. (Inverse for *KS2Shorts & Warning).

Interpretation: On Warnings traders should drop down to the Permission Stochastic for examination. Further, traders should exercise discretion relative to exiting existing short trades and/or taking new long trades.

Warnings to Longs

Philosophy: Inverse of Warnings to Shorts

Interpretation: Inverse of Warnings to Shorts

Color Coded Support System Parameters

Parameters are selected on the [Display](#) window.

C1L: 1st Class Long

C1S: 1st Class Short

C2L: 2nd Class Long

W2L: 2nd Class Long and Warning to Shorts

C2S: 2nd Class Short

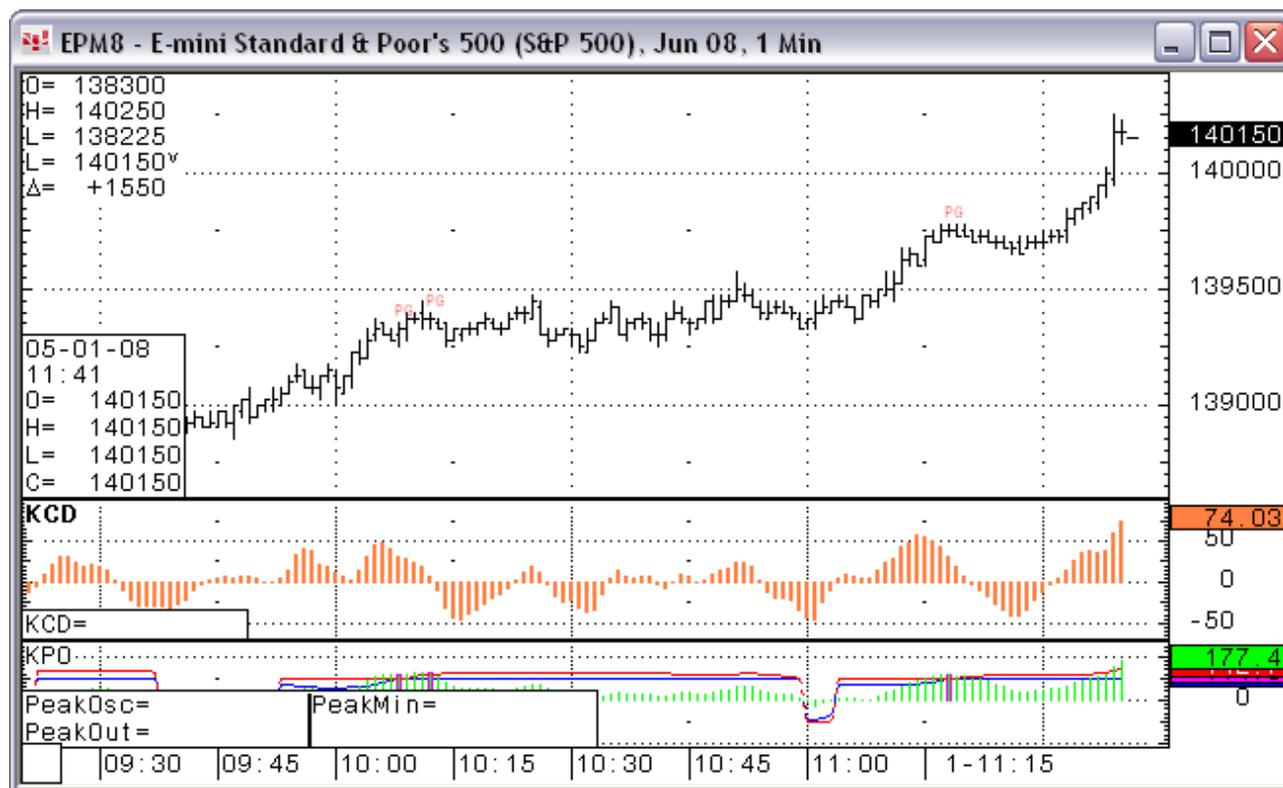
W2S: 2nd Class Short and Warning to Longs

C3L: 3rd Class Long

C3S: 3rd Class Short

C1L, C2L, and C3L display with an up arrow. C1S, C2S, and C3S display with a down arrow. W2L displays with a square above, and W2S displays with a square below the bar.

CD (KCD)



The CD is a sensitive, second derivative acceleration indicator, the derivative of the PeakOscillator. It is calculated in the same way as the MACD histogram from a moving average oscillator. It is the difference between the PeakOscillator and the average of the PeakOscillator, where the MACD is the difference between an exponential moving average oscillator and its average. When used in conjunction with the Kase PeakOscillator this signal indicates the market's direction.

However, because its basis is statistical, it generates cleaner crossover signals and more reliable divergences.

Interpretation: The KaseCD is used as a confirming divergence indicator. Its use is primarily to confirm, as it is more sensitive than the PeakOscillator, and will generate divergences for minor turns and corrections.

For further information, see Danger Signals in [Trading Guidelines](#).

CD Parameters

Parameters are:

- [Display](#)
- [MarkIt](#)
- **Range:** Starting and ending points for the calculation window.

Candlestick Indicators (KCI)



This set of indicators identifies the 5 pairs of candlestick patterns, which Kase finds the most useful and screens them for significance.

They can be used to identify the danger of a possible turn and also, with the exception of the Hammer and Hanging Man, to accelerate exits, especially on the daily chart, or a chart one time frame higher than you are trading, substituting the candle exit for Dev 1.

Evening and Morning Stars, since they are three candle patterns, generate a warning and setup after two candles are completed. We then know that all we need is a third candle to complete the pattern. In a two-candlestick pattern, we do not know whether the pattern is complete until the second candlestick is in place.

Given that reversals generally take place at the "top" or "bottom" of trends, in order to filter out less meaningful patterns, we screen our candle patterns with the Stochastic, only identifying the patterns under "overbought" (bearish) or "oversold" (bullish) conditions).

These patterns are especially significant when accompanied by divergence and PeakOut signals.

A cross on the high of the candle identifies Bearish candle patterns and a cross on the low indicates a bullish candle pattern. All candles contain the same inputs.

Candlestick Indicators Parameters

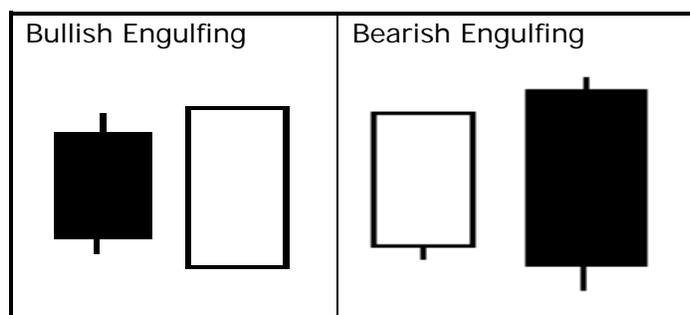
Parameters are:

- **Color:** Color of the text on the study.
- **Threshold:** The extremes for the slow stochastic pattern filter. For example, a default of 75 means that bearish formations will only be identified when the stochastic is above 75 and bullish formations below 25. Likewise, a threshold of 90 would identify candlestick patterns only if the stochastic is above 90 or below 10.
- [Display](#)

Engulfing Patterns

The bullish and bearish engulfing lines are reversal patterns, which entirely “engulf” the previous bar as shown above.

If this pattern is coincident with an extreme PeakOscillator reading and or divergence, wait to see if that pattern is completed. If there is a gap higher on the next bar in a bull market or lower in a bear market, substitute the Harami line mid-point for DevStop 1.

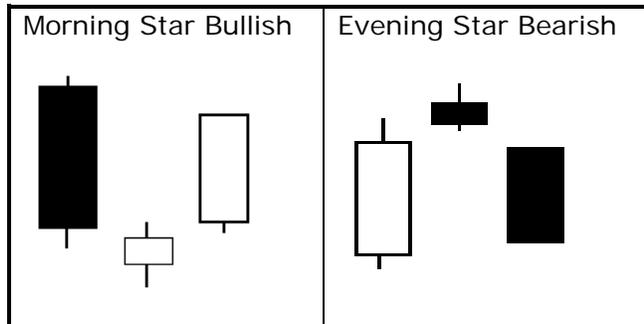


Evening & Morning Star Patterns

This 3-candle reversal pattern includes a large range day with the trend, an exhaustion gap, stall day, breakaway gap, and a large range reversal candle.

After the formation of the first two candles, pull in your DevStop1 to the mid-point of the 1st candlestick.

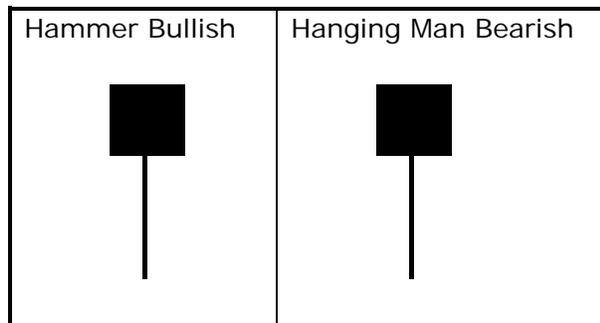
For example, on day 3 of the patterns, exit the portion of the trade that would have normally been exited on the DevStop1 at the mid-point of the blank Harami line (first bar of the pattern).



Hammer & Hanging Man Patterns

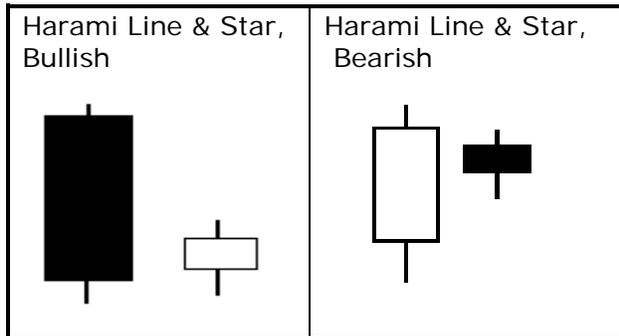
These patterns, while identical, occur at the bottom of the market for the bullish Hammer, and at the top of the market for the bearish Hanging Man.

While not as significant as other patterns on its own, it adds weight to other patterns, for example, as the star in a Harami Line and Star. Also, it acts well as a warning, taking place often a few bars before an actual reversal.



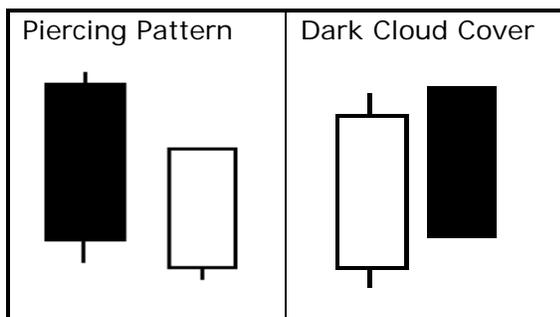
Harami Line Patterns

In the case of the Harami Line & Star pattern, look for closes against the open of the Harami Line. In the case of a bearish pattern at the top of a bull market, watch for a close of the candlestick following the star that is below the opening of a blank Harami line. The opposite holds true in a bear market. This level is substituted for DevStop 1.

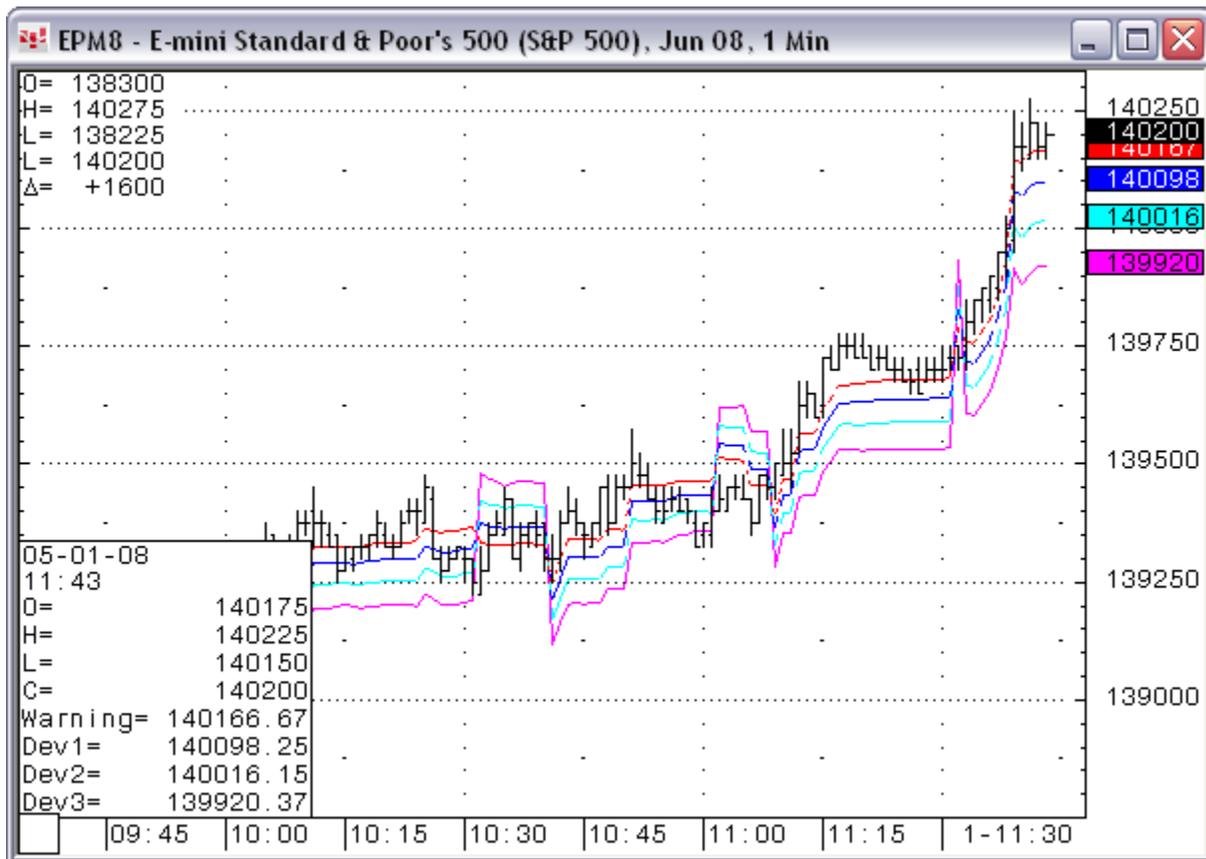


Piercing Patterns

If this pattern is coincident with an extreme KCD or PeakOscillator reading and/or divergence, we wait to see if that pattern is completed. If there is a gap higher on the next bar, in the case of a bull market, or a gap lower in the case of a bear market, substitute the mid-point of the Harami line for DevStop 1.



DevStop (KDevStp)



The DevStop is the closest we can come to an ideal stop level in the real world, by accounting for volatility (which is directly proportional to risk), variance of volatility (how much risk changes from bar to bar) and volatility skew (the propensity for volatility to spike higher from time to time).

The DevStop evaluates average market range, as well as the distribution and variability of the range, identifying points where there is a high probability of the market move being non-random. Specifically the DevStop places exit points at 1, 2 and 3 standard deviations over the mean two-bar true range, corrected for skew. Therefore, we can take profit or cut losses at levels at which the probability of a trade remaining profitable is low, without taking more of a loss or cutting profits any sooner than necessary.

Interpretation: The stop consists of four exit points, a warning line and Dev 1, 2, and 3. Two closes against the Warning count as Dev 1. To speed up the crossover of the stop from long to short, simply change the moving averages to crossover more quickly, for example to 3 and 13. To decrease the amount of the stops, that is, to pull them in, reduce the standard deviation settings.

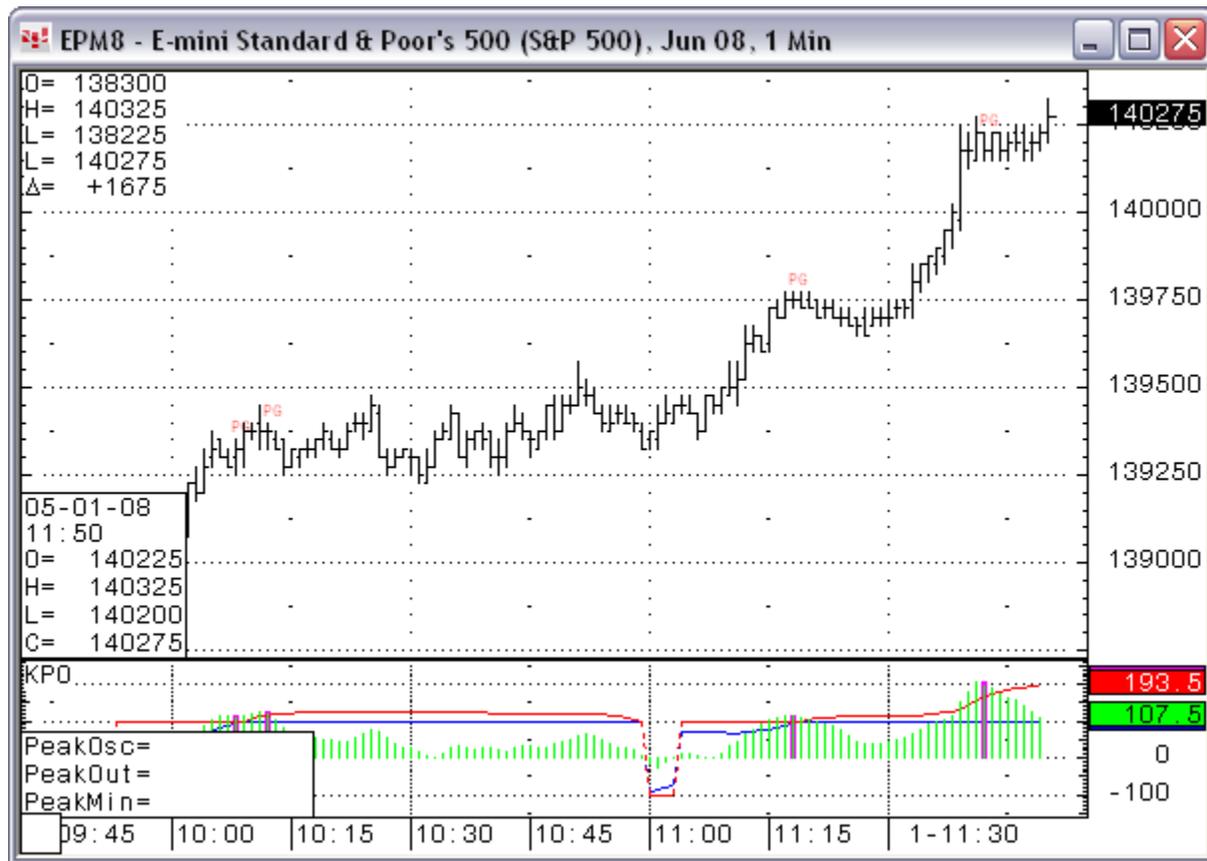
For further information, see Danger Signals in [Trading Guidelines](#).

DevStop Parameters

DevStop parameters are:

- [Display](#)
- **L Dev1**: Number of bars used to calculate the standard deviation
- **L Dev2** and **Dev3**: Number of bars in the moving averages used to default the indicator to long or short.
- **V Dev2** and **Dev3**: Number of standard deviations used to calculate the Dev stops.
- **Price**: Prices used to calculate the indicator.

Peak Oscillator (KPO)



The PeakOscillator plot is a momentum indicator designed to measure the strength of a market trend. It is used similarly to traditional oscillators, but it is derived from a mathematically sound, statistical evaluation of trend, which analyzes over 50 different trend lengths, rather than just two as the traditional oscillator does. It automatically adapts for cycle length and volatility changes.

The PeakOscillator is "universal" in that it scales to volatility, and can be compared over differing commodities and time frames.

Other features of the PeakOscillator are the PeakOut and PeakMin lines.

The PeakOut line is the maximum of 2 standard deviations of the local PeakOscillator reading, and the 90th percentile of momentum, historically. The PeakMin is the minimum of the two.

Interpretation:

The PeakOscillator is used two ways:

- Divergence: The PeakOscillator may be used to generate traditional divergence signals. The difference between it and traditional divergence indicators lies in its accuracy.
- PeakOut: The second use is to look for a PeakOut. A PeakOut occurs when the histogram breaks beyond the PeakOut line and then pulls back. A PeakOut through the maximum line will be displayed magenta.

A PeakOut, which only extends through the PeakMin line is called a local PeakOut, and is less significant than a normal PeakOut signal. These local PeakOuts are to be relied upon more heavily during sideways or corrective markets.

PeakOuts may be based on either the maximum line or the minimum line. Maximum PeakOuts, however, are rarer and thus more significant than minimum PeakOuts. The magnitude of the price move may be greater following the maximum PeakOut, but the likelihood of the break in trend is essentially the same. Thus, our research indicates that we should react equally to a PeakOut in a trendy market and a PeakMin in a choppy or corrective market.

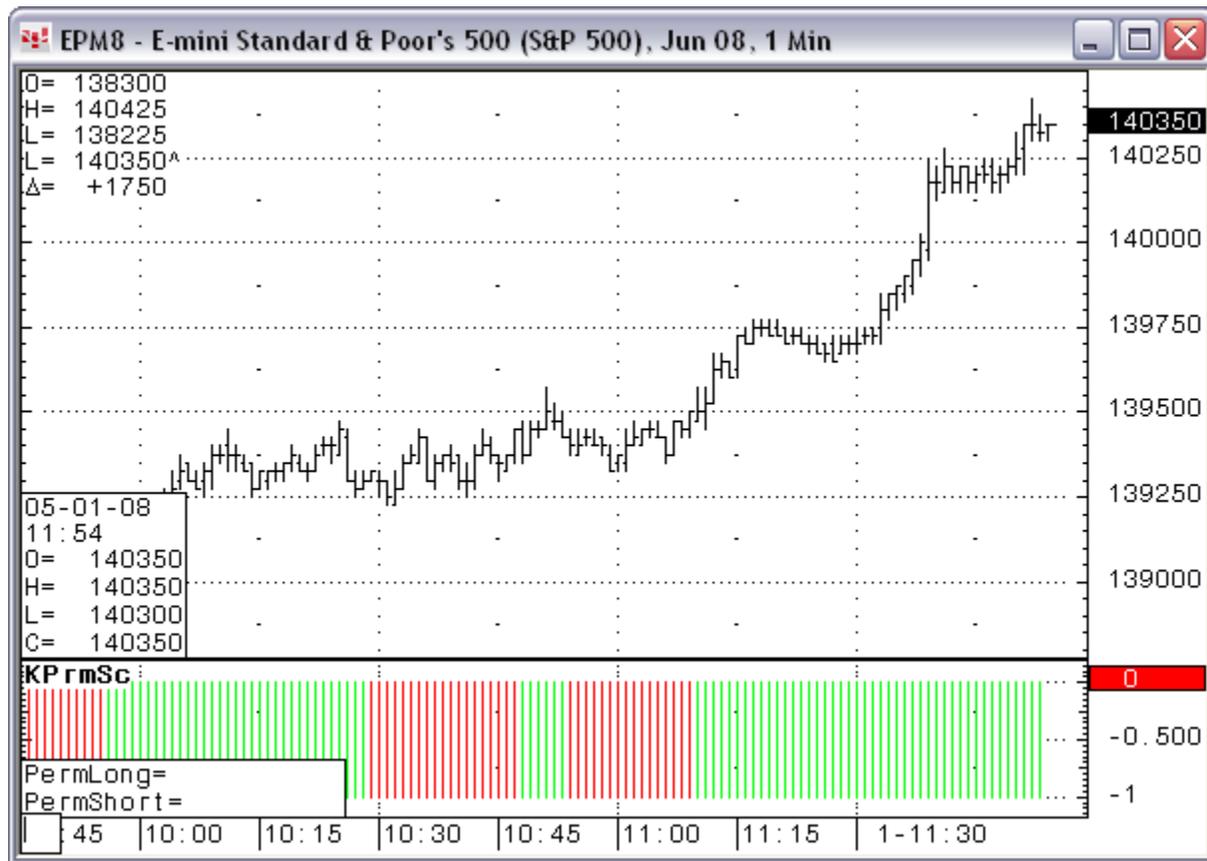
For further information, see Danger Signals in [Trading Guidelines](#).

Peak Oscillator Parameters

Peak Oscillator parameters are:

- [Display](#)
- **Range:** Starting and ending points for the calculation window.
- **F:** Number of standard deviations over the average PeakOscillator value at which the local PeakOut line is set.

Permission Screen (KPrmSc)



It is easier to use an “on-off” histogram, which simply displays one color for Permission Long and another for Permission Short, than to interpret the Permission Stochastic manually. The Permission Screen takes the rules for the Permission Stochastic and translates them to a simple color histogram biasing the signal in favor of the market's long-term direction

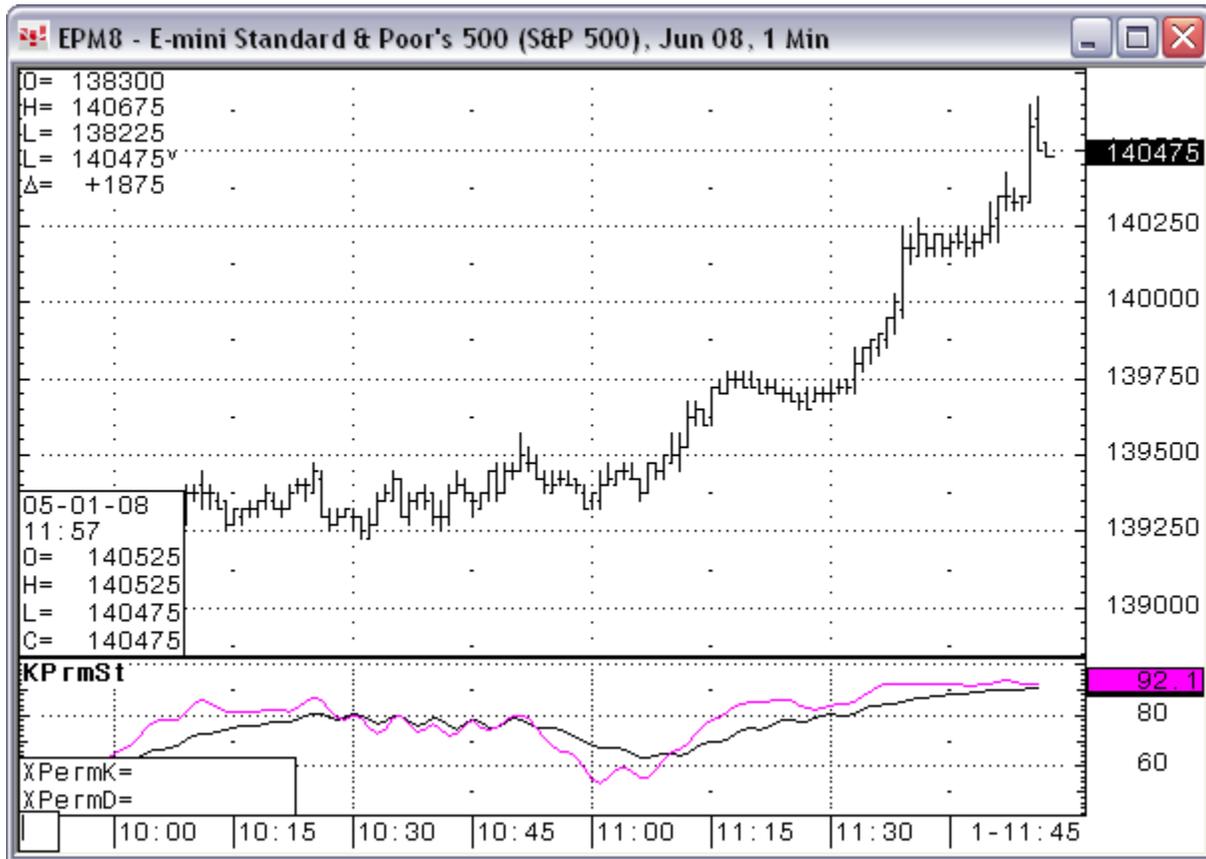
Interpretation: If the histogram is dark green, the trader has a Permission Long and is able to take any long trades generated shorter term. The opposite is true for the dark magenta Permission Short. Use on a multi-data chart for spread trading. Plot one Permission Screen in sub-graph 2 for data 1 and in sub-graph 3 for data 2. If both screens match, don't trade. If the screens oppose, take a spread trade accordingly, going long the Permission Screen histogram green data (above 0) and short the red data (below 0).

Permission Screen Parameters

Permission Screen parameters are:

- [Display](#)
- **Period:** Number of synthetic bars in the Permission Stochastic.
- **X:** Number of bars that make up the longer term. For example, if you are trading a daily chart, setting X to 5 will give you a five day or weekly stochastic to screen your signals.

Permission Stochastic (KPrmSt)



Trades taken in the direction of the major trend tend to be more successful than trades against the trend. Thus, it behooves traders to screen trades with a higher time frame filter.

Traders are often too impatient to do so. Thus the Permission Stochastic computes a synthetic higher time frame stochastic, which is based on a moving higher time frame window that ends with each bar. For example, a weekly bar is defined as the last 5 business days, ending today.

The sped up filter is thus the best compromise between filtering in a higher time frame and minimizing delays in trading.

Interpretation: Permissioned traders may take long trades when the Permission Stochastic is riding the top of the chart and when Permission K is above Permission D and both are close together. The opposite applies to short trades. Traders are also permissioned long when the market has been oversold, the difference between Permission K and Permission D is large and Permission K has already turned up. Again, the opposite applies to permissioning short trades.

Permission Stochastic Parameters

Permission Stochastic parameters are:

- [Display](#)
- **Period:** Number of synthetic bars in the Permission Stochastic.
- **X:** Number of bars that make up the longer term. For example, if you are trading a daily chart, setting X to 5 will give you a five day or weekly stochastic to screen your signals.

Permission Stochastic Characteristics

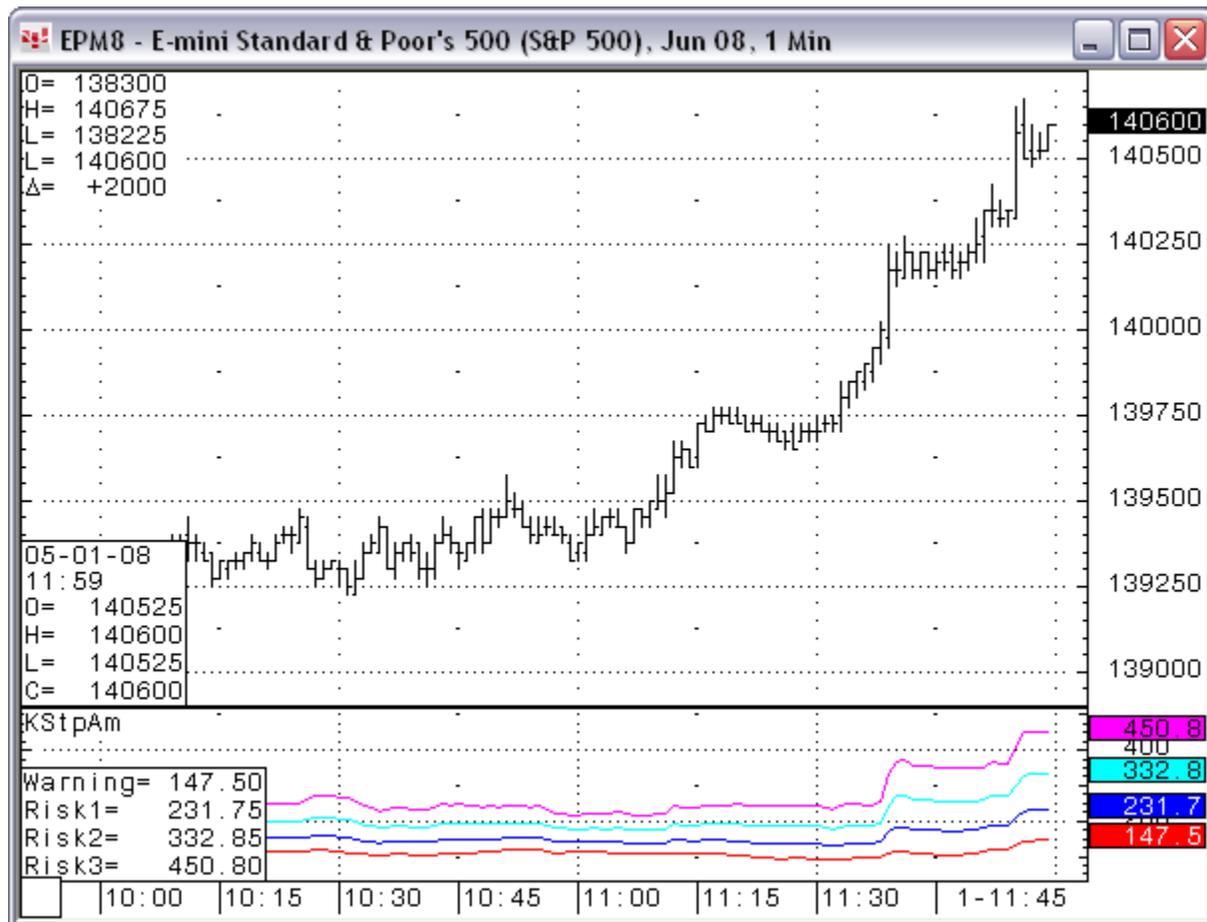
Permission To Go Long

- When the stochastic values are near the top of the chart and close in value.
- When the Permission Stochastic values have been near the bottom of the chart, Permission K is both well above the Permission D and above (or has risen out of) oversold territory.
- When the Permission Stochastic values are both below 85 percent and above 15 percent and Permission K is above Permission D.

Permission To Go Short

- When the Permission Stochastic values are near the bottom of the chart and close in value.
- When the Permission Stochastic values have been near the top of the chart, Permission K is both well below the Permission D and below or has fallen out of overbought territory.
- When the Permission Stochastic values are both below 85 percent and above 15 percent, and Permission K is below Permission D.

Stop Amounts (KStpAm)



The philosophy is the same as the DevStop. The stop amount is the difference between the highest high or lowest low and the exit point (the actual DevStop).

Interpretation: The stop amount tells the trader how much - the actual dollar amount per unit - is at risk at the warning line, and the three stop levels.

Stop Amounts Parameters

Stop Amounts parameters are:

- [Display](#)
- **S:** Number of Standard Deviations used for the stop amounts.
- **L:** Number of bars used to calculate the Standard Deviation.
- **Price:** Prices used to calculate the indicator.

Trading Guidelines

Valid Entry Triggers

Statware defines valid buy entry triggers and valid sell entry triggers.

Buy Entry

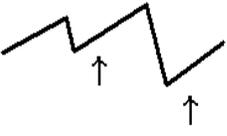
One first class buy, 2 second or 3 third-class, or a warning sign, screened on the Permission Stochastic, accompanied by at least one third-class buy.

Sell Entry

One first-class sell, two second- or three third-class sells, or a warning sign, screened on the Permission Stochastic, accompanied by at least one third-class sell.

First vs. Second Signals

A first signal is any first-, second- or third-class signal generated, as described in the indicator section. A second buy signal is one that occurs after a pullback, wherein the previous low is held. A second sell signal is one that occurs after a pullback, wherein the highs are held.

Valid 1 st and 2 nd Buys	Two 1 st Buys only
	

Entry System

To initiate a trade from a "flat" position, take second signals generated.

To take first signals, a danger sign must have been generated on the higher time frame chart, usually daily, or very strong danger signs on the monitor.

Upon a confirmed signal on the monitor level, follow trades on the monitor chart.

If you wish to trade longer term, upon a confirmed entry on the daily, follow trade on the daily chart.

Re-Entry System

If stopped out under a mild correction, if both the DevStop 3 has not been violated and the previous cycle low (for longs) or high (for shorts) holds as well, reenter the entire original position on first timing signals, otherwise cycle back to normal entry rules above.

Danger Signals and Related Stop Settings

Choosing the exit point for any trade presents a set of conflicting decision processes. We want to stay in the trade through minor, random price fluctuations, in order to allow profit to accumulate; yet we do not want to allow a reversal to persist to the point that it causes substantial erosion of our gain on the trade.

To improve our decision making process on market exits, we have examined the use of three Kase indicators on our monitor chart: the PeakOscillator, the KCD and the DevStop. The PeakOscillator is used to identify extremes of trend strength, while the KCD is used to identify declining and, specifically diverging momentum. These are primary signals that portend a high probability for change in trending behavior. The DevStop is used to identify significant price points for exiting, based on recent volatility.

Exit Guideline Grid

The following chart lists the exit guidelines in order of importance:

Divergence on PeakOscillator AND KCD	100%
Divergence on Peak Oscillator OR KCD	80% + Dev 1
PeakOut late in the direction of the dominant trend, or during a correction, no divergence.	80% + Dev 1
PeakOut early in the direction of the dominant trend (often following a sharp correction)	Dev 1, 2, and 3 equally

The studies of the Exit Guidelines related above were performed primarily on the monitor length chart. Several observations were also confirmed on a timing length chart. Because the indicators used are statistically based, they should perform equally well on the daily chart for longer-term position holders as well.

Whenever we see divergence on the KCD and the PeakOscillator, we now exit 100% of our trade. In our study, we hit DevStop 1 95% of the time (20/21) following this signal. DevStop 2 was hit 86% of the time (18/21).

Divergence Indicator	Action Taken	Probable Outcome
KCD AND Peak Oscillator	Exit 100% of the trade	DevStop 1 hit 95% DevStop 2 hit 86%
KCD OR Peak Oscillator	Exit 80% of the trade and Pull in stops to DevStop1	DevStop 1 hit 83% DevStop 2 hit 79%
PeakOut late (with no divergence) in the direction of the dominant trend or during a correction	Exit 80% of the trade and Pull in stops to DevStop1	DevStop 1 hit 79%
PeakOut early in the direction of the dominant trend	Stops set at DevStop 1,2,and 3 equally	Stops hit on 37% of the time

When in no danger, default to DevStop 3.

It has been determined that a full exit, of either a monitor or a timing chart, whichever triggers first, beats a half-and-half exit system.

If stops are hit before new signals are generated in the opposite direction, exit the trade.

If there is no profit in the trade after 5 to 8 bars, exit on inactivity.

Daily Chart Exit Rules and Stops

When in no danger, default equally to DevStops 1, 2 and 3.

Exit on the first signals in the opposite direction.

If there is no profit on the trade after 3 to 5 bars, exit on inactivity.

Otherwise same as above.

Choppy Market Trading Guidelines

When the market is in a corrective, sideways, or coalescing mode, it is prudent to modify the standard trading guidelines as follows:

Trade lighter volume, e.g., 50% vs. 100%

Remain on the timing chart for exit signals (i.e., PeakOuts, divergences, warnings, etc.), even if confirmed on the monitor chart

Exit more aggressively, e.g., 100% instead of 80%

Default to DevStop 2 instead of DevStop 3.

If you feel you are exiting too aggressively, if confirmed on the monitor chart, you may move up to the monitor chart and exit on monitor chart signals. However, lower the time frame on monitor chart, i.e., 10-15 bars/day vs. 5-8 bars.

Supplemental Studies

This category of study includes:

- [Bullish Consensus](#)

Bullish Consensus (Bull)

The Bullish Consensus study, begun in 1964, measures market sentiment by polling selected participants. The study is expressed as the percentage of surveyed market participants who are bullish on a particular market. The study can be used for trend following or as a contrary indicator.

The Bullish Consensus data is compiled and distributed by the Market Vane Corporation, Pasadena, CA.

The Bullish Consensus study, compiled daily, tracks the buy and sell recommendations of leading market analysts and commodity trading advisers.

The Market Vane Corporation collects the information used to compile the study by:

- Reading a current copy of the adviser's market letter.
- Calling market advisor hotlines
- Contacting major brokerage houses to learn what the house analyst is recommending for various markets.
- Reading material sent by advisers

This information is compiled at the end of each day, reflecting the open positions of the advisers as of that day's market close.

Commodities Covered by the Bullish Consensus Study

- 3 Month T-Bills
- British Pound
- Canadian Dollar
- Cocoa
- Coffee
- Copper
- Corn
- Cotton
- Deutsche Mark
- Euro dollars
- Feeder Cattle
- Gold
- Heating Oil
- Japanese Yen

- Lean Hogs
- Light Crude Oil
- Live Cattle
- Lumber
- Oats
- Orange Juice
- Platinum
- Pork Bellies
- S&P 500 Index
- Silver
- Soybean Meal
- Soybean Oil
- Soybeans
- Sugar (World)
- Swiss Franc
- T-Bonds
- Unleaded Gas
- US Dollar Index
- Wheat

Bullish Consensus Parameters

Bullish Consensus parameters are:

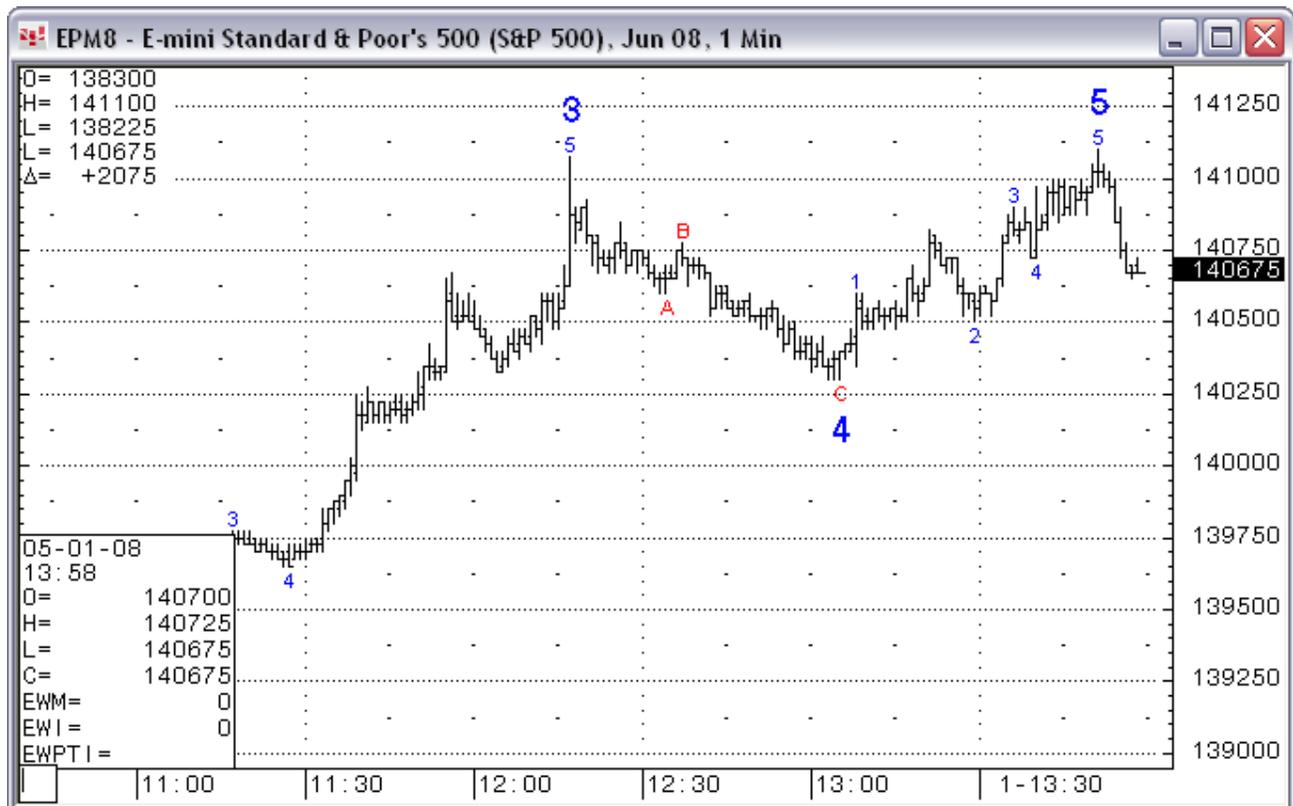
- [Color and Weight](#)
- [MarkIt](#)
- [OB/OS](#)

Tom Joseph Studies

These studies include:

- [Elliott Wave](#)
- [Optimized Bands](#)
- [Pivot](#)
- [Trend Index](#)

Elliott Wave (EW)



The Elliott Wave Theory states that markets follow a repetitive rhythm consisting of a five-wave advance (decline) and a three-wave decline (advance), completing an eight-wave cycle. Of the five waves in the advancing (declining) portion of the cycle, waves 1, 3, 5 are rising (falling) waves, called impulse waves. Waves 2 and 4 move against the uptrend (downtrend) and are called corrective waves, because they correct waves 1 and 3. After the five-wave numbered advance (decline) is complete, a three-wave correction begins. The three corrective waves are identified by the letters A, B, C.

The Tom Joseph Elliott Wave study also plots the minor pivots, as well as a Profit Taking Index (PTI). The PTI compares Buying/Selling momentum in Wave three with the Buying/Selling momentum in Wave four. If the PTI is greater than 35, the market exhibits a greater tendency to initiate a fifth wave or a 2nd attempt phase. Conversely, if the Profit Taking Index is less than 35, the market generally fails to initiate a fifth wave or 2nd attempt phase.

Additionally, the study tries to project, through Fibonacci analysis, the range and timing of each of the next waves.

When a wave 4 is in progress, CQG will display 3 channels. Elliott wave theory, as interpreted in the Tom Joseph studies, postulates that if the wave four retracement holds above Channel 1, the odds are greater than 80% that a strong wave five rally will occur. If the wave four retracement holds above the second channel, the odds for a strong wave five rally drop to 60%. If the wave four retracement breaks the third channel, the odds of a new high in wave 5 are very low. If this does happen, the theory holds that the rally will be a slow and tedious process.

For further information on Elliott Wave Theory, please consult [Elliott Wave Principle](#) by A.J. Frost and Robert Pletcher.

Elliott Wave Parameters

Elliott Wave Parameters are:

- **Bar Count:** The number of bars to be examined.
- **Update:** How often the study is updated in minutes.
- [Display](#)

Optimized Bands (TJOB)



Tom Joseph Optimized Bands (TJOB) are High/Low Bands derived from a simple moving average. Once the simple moving average has been calculated the bands are determined by the multiplication of a high band optimization factor/low band optimization factor. These factors are also necessary in the calculation of the Tom Joseph Trend Index study.

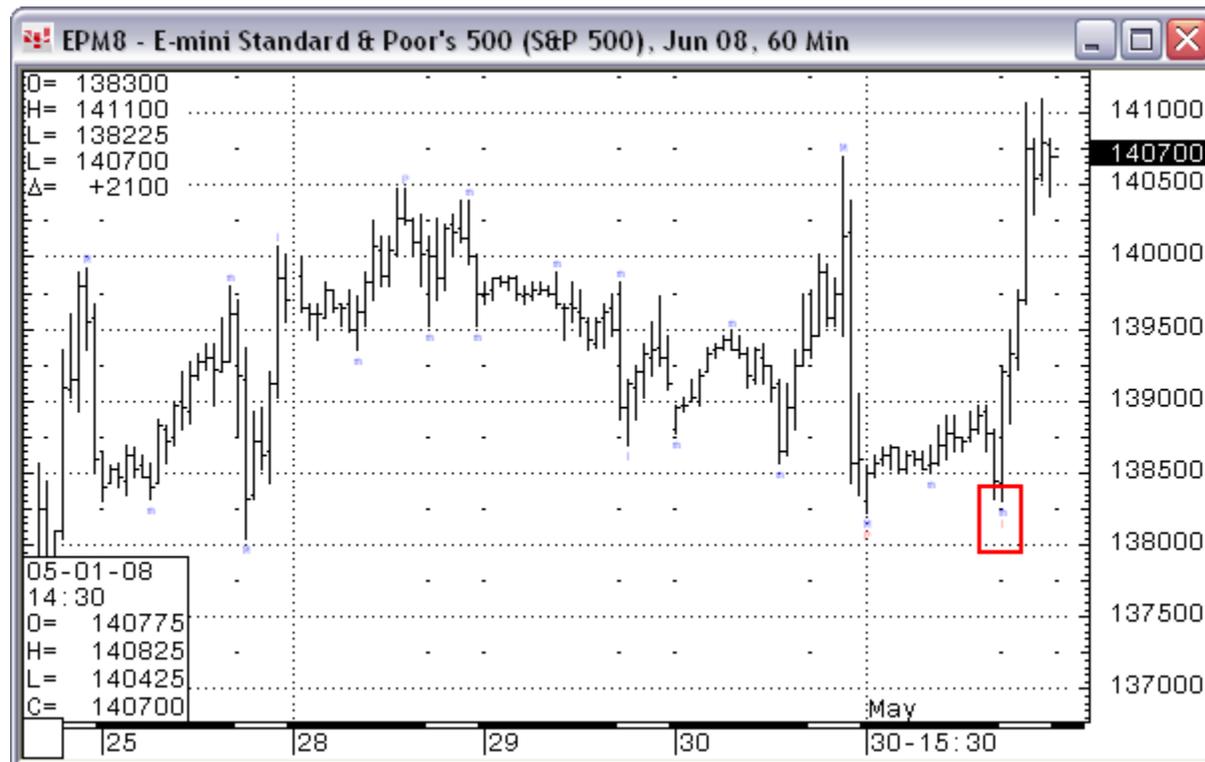
This study is presented in COG to allow the user to use it in conjunction with the [TJTI](#) study as a learning tool.

Optimized Bands Parameters

Parameters are:

- [Display](#)
- [MarkIt](#)
- **Period:** Time period for moving average.
- **Price:** The price used for TJOB calculations.

Pivot (TJPvt)



There are two types of pivots, tops and bottoms. These tops and bottoms can be defined by either using chart highs/lows or true highs/lows.

Each pivot has 4 levels for identifying highs and lows in the market: primaries, majors, intermediates and minors.

A top pivot is formed if the high price of the pivot bar is not violated by another bar during a set range ("x" bars) in either direction. The value of "x" is 27 for primaries, 19 for majors, 11 for intermediaries and 5 for minors.

Example: A primary pivot high is the highest point the market attained for at least 27 bars on either side of the pivot.

NOTE: "X" bars are needed in the future direction to qualify a pivot. The program has a "guess" feature that attempts to label projected pivot points as accurately as possible but does not guarantee that they will not change. Any pivot that is labeled in the "guess" color (default: Red) will most likely be that type of pivot, but has met the conditions of a pivot of at least the next lesser degree. For example, if you see a Primary pivot labeled in the "guess" color, it will most likely be a Primary pivot, but has met the conditions of a Major pivot.

Pivots are labeled as:

P = Primary

M = Major

I = Intermediate

m = Minor

The default colors represent the following:

Blue = pivots

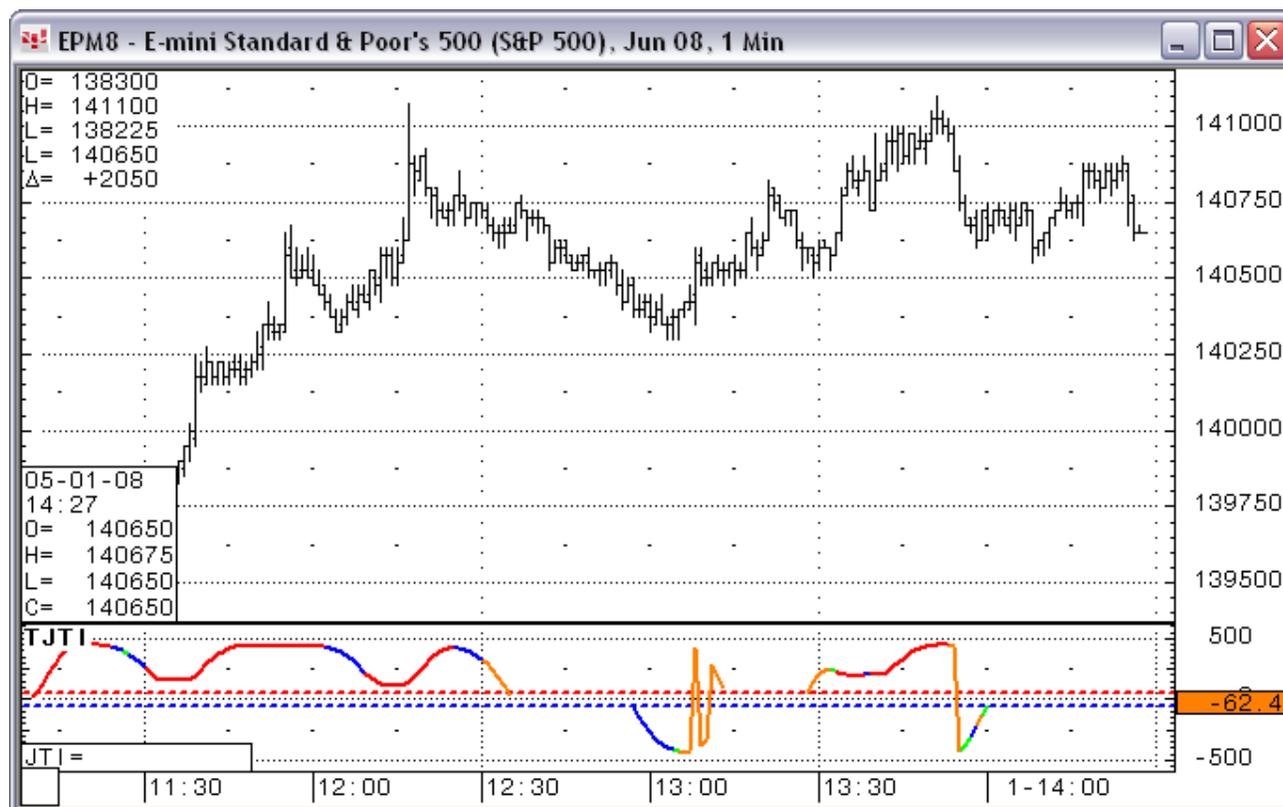
Red = pivots determined from guesses.

Pivot Parameters

Parameters are:

- [Color](#)
- **Hi/Lo:** Determines whether chart highs/lows or true highs/lows are used to determine pivots. Chart highs/lows are determined from the current bar. True highs/lows are determined from the maximum/minimum of the current bar and the previous bar's close.

Trend Index (TJTI)



The Tom Joseph Trend Index (TJTI) is a dynamic mathematical model that can be used to identify the trend of the market, the direction of the trend, and the strength of the trend. The TJTI has very complex routines and may take a few seconds to calculate (depending on the PC available to the user).

The TJTI calculates a Trend Index Value, which can be set to track the short, medium, normal, or long term trend of the market. There are times when a market fails to generate a Trend Index Value and these are usually seen during extreme congestion periods.

Once the Trend Index Value is calculated, the software internally calculates and projects various price action values, which are dynamically adjusted to the current market conditions. This is used to classify the strength of the Trend and is displayed in four colors that you can choose.

Of these four strengths, you can only adjust the noise color.

Almost all Wave Three phases and extended Wave Five phases generate a strong (red) Trend Index Value. Generally, most of the phases start out with low or medium strength trends and progress to a strong trend. However, many times the strong (red) trend appears during the early stages of a move and the TJTI is designed to detect this.

Wave Three phases and extended Wave Five phases also show a strong tendency to lower their Trend strength prior to completion. The TJTI detects this quickly and alerts the user by downgrading its Trend strength and changing to a lower strength color.

Trend Index Parameters

Parameters are:

- [Display](#)
- **Period:** The time period for the trend index values.
- **Trend Length:** Index values can be set to track the short, medium, normal, or long term trend of the market.
- **Fast:** Determines if the TJTI is calculated "Fast". Yes indicates that a shorter predefined period is used; no uses a longer period.
- **Price:** Determines the price level comparison. Options include: open, high, low, close, mid-point, HLC/3, average, true high, true low, range, or true range.
- [OB/OS](#)

CQG Integrated Client Advanced Analytics User Guide

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Advanced Analytics in CQG IC

CQG is the standard in charting and analytics for the trading industry.

Advanced analytics combined with the best real-time and historical data provide traders with critical insight into market activity.

About this Document

This document is one of several user guides for CQG Integrated Client. This guide introduces the advanced analytical tools that CQG offers.

You can navigate the document in several ways:

- Click a bookmark listed on the left of the page.
- Click an item in the Table of Contents.
- Click a blue, underlined link that takes you to another section of the document. To go back, use Adobe Reader Page Navigation items (**View** menu).

If you are looking for a particular term, it may be easier for you to search the document for it. There are two ways to do that:

- Right-click the page, and then click **Find**.
- Press Ctrl+F on your keyboard.

Please note that images are examples only and are meant to demonstrate and expose system behavior. They do not represent actual trading situations.

This document is intended to be printed double-sided, so it includes blank pages before new chapters.

To ensure that you have the most recent copy of this guide, please [go to the user guide page on CQG's website](#).

Related Documents

CQG IC user guides:

- [CQG Basics](#)
- [Charting and Studies](#)
- [Trading](#) and [CQG Spreader](#)
- [Options](#)

Customer Support

CQG Customer Support can be reached by phone from Sunday, 2:30 p.m. CT through Friday, 5:00 p.m. CT. These hours also apply to Live Chat.

United States	1-800-525-1085
United Kingdom	+44 (0) 20-7827-8270
France	+33 (0) 1-74-18-07-81
Germany	+49 (0) 69-6677-7558-0
Japan	+81 (0) 3-3286-6877
Russia	+7 495-795-2409
Singapore	+65 6494-4911
Sydney	+61 (2) 9235-2009

E-mail websupt@cqg.com 24 hours a day, 7 days a week.

If you have questions about CQG documentation, please [contact the help author](#).

Order Ticker

The Order Ticker is a graphical representation of trade volume.

The **caption bar** at the top of the window indicates the contract and the threshold information.

The **price scale** is on the right side of the window. The two middle prices are best bid and best ask. If there is a gap between the best bid and best ask, the prices in the gap are not displayed. If the best bid is the same as the best ask, then only one price will be boxed. If the market is split, then the price scale will change, but not the price rows. If the last trade matches the best bid or best ask, its price is highlighted.

To the right of the price scale is the **DOM volume** for the two closest rows to best bid price and best ask price. If the DOM data is in a crossed state, the bids and asks are displayed at the center line.

Scrolling across the window in real-time are **price rows**. These rows display all of the prices for which the ticker shows data, including orders placements, orders price modifications, orders cancels, and trades (that are not between Best Bid and Best Ask).

Order Ticket requires an enablement.

Opening the Order Ticker

Click the **OrdTkr** button on the toolbar.

If the button is not displayed, then click the **More** button, and then click **Order Ticker**.

To add the **OrdTkr** button to the toolbar:

1. Click the **Setup** button.
2. Select **Customize Toolbar**. This displays the Toolbar Manager window.
3. Click the >>> button in the **Add/Remove** column in the **Chart, Quote, News...** row.
4. Click **OrdTkr** in the button column.
5. Click the **Close** buttons on the Customize Application Toolbar and Toolbar Manager windows.

Order Ticker Components

When exchange limitations or data unavailability do not allow correct order modification detection, order modifications are displayed as order placements/cancels.



order highlighted in red = **ask order**



order highlighted in bright red = **order that resulted in trade on bid side**



order highlighted in green = **bid order**



price highlighted in bright green = **order that resulted in trade on ask side**



order crossed out = **cancelled order**, bids are green and asks are red



gray middle rows = orders entered at best bid or best ask



A **modified bid order** is indicated by small, green text with a green line to it.



A **modified ask order** is indicated by small, red text with a red line to it.



Bid/offer pairs are moved down the scale with varying degrees of shading.

When the best bid and best ask change, the background changes from black to gray and the line at the window's border changes between red and green, as seen here:



Setting Order Ticker Preferences

Click the **Setup** button, and then click **Order Ticker Preferences**.

Add Sound Board button

Enable Sound Board icon on header bar for all windows

Select this check box to display the **Sound Board** button on the Order Ticker title bar. This setting applies to all Order Tickers.

In order to play sounds, they must also be configured. To configure sounds, right-click the **Sound Board** button.

The Sound Board plays sounds to indicate new trades, changes to best bid and ask, and changes to the DOM book.

Set depth of market

Depth of market: Maximum of 10.

Enter a value for the depth of market. This number applies to both bids and asks. The maximum number of bids and asks that can be displayed is ten.

The depth is set per view.

Set minimum threshold

Thresholds

Threshold quantity for orders:

Greater than or equal to

Less than or equal to

Threshold volume for trades:

Greater than or equal to

Less than or equal to

Enter values for both trade and order minimum threshold.

The threshold determines the order events that are shown based on volume. For example, if the threshold is set to 10, only order events with volume of 10 or higher is displayed.

The threshold is set per view.

Remove cancelled orders

Orders to clear

Remove orders that are placed, then cancelled

within milliseconds of each other

within % size deviation of each other

Removal Mode:

Remove immediately

Fade

If you select the **Remove orders that are placed, then cancelled** check box, then matching working and cancelled orders that are within some milliseconds of each other and within some percentage of size deviation are removed. You set the milliseconds and percentage values.

Select whether you want these matching orders to fade as they are removed from the display.

Select color intensity

Select color intensity:

Alternate Shading:

Low

Medium

High

A/B Box Background:

Low

Medium

High

Choose **Low**, **Medium**, or **High** for shading and background colors.

Working with the Order Ticker

To add an Order Ticker

1. Right-click the **OrdTkr** caption bar.
2. Click **Add Order Ticker**.

You cannot add another Order Ticker by clicking the **OrdTkr** button.

To move between Order Tickers

1. Right-click the **OrdTkr** caption bar.
2. Click the Order Ticker you wish to view.

To resize the Order Ticker

1. Click and drag one of the four corners of the window to change the vertical and horizontal borders simultaneously.
2. Click and drag the top or bottom border to change the vertical dimension. Click and drag the side border to change the horizontal dimension.

To change the contract

1. Click anywhere on the **Order Ticker** window.
2. Start typing the contract symbol. The **Contract** field appears.
3. **Enter**. If you select **Ctrl+Enter**, then all windows on the current page display data for that contract also.

To change the order and trade thresholds

To change the order threshold

1. Click anywhere on the **Order Ticker** window.
2. Type the threshold value. The **Threshold** field appears with that value.
3. **Enter**.

To change the trade threshold

1. Click anywhere on the **Order Ticker** window.
2. Type a comma and the threshold value. The **Threshold** field appears with that value. The comma is not displayed.
3. **Enter**.

To change both the order and trade threshold

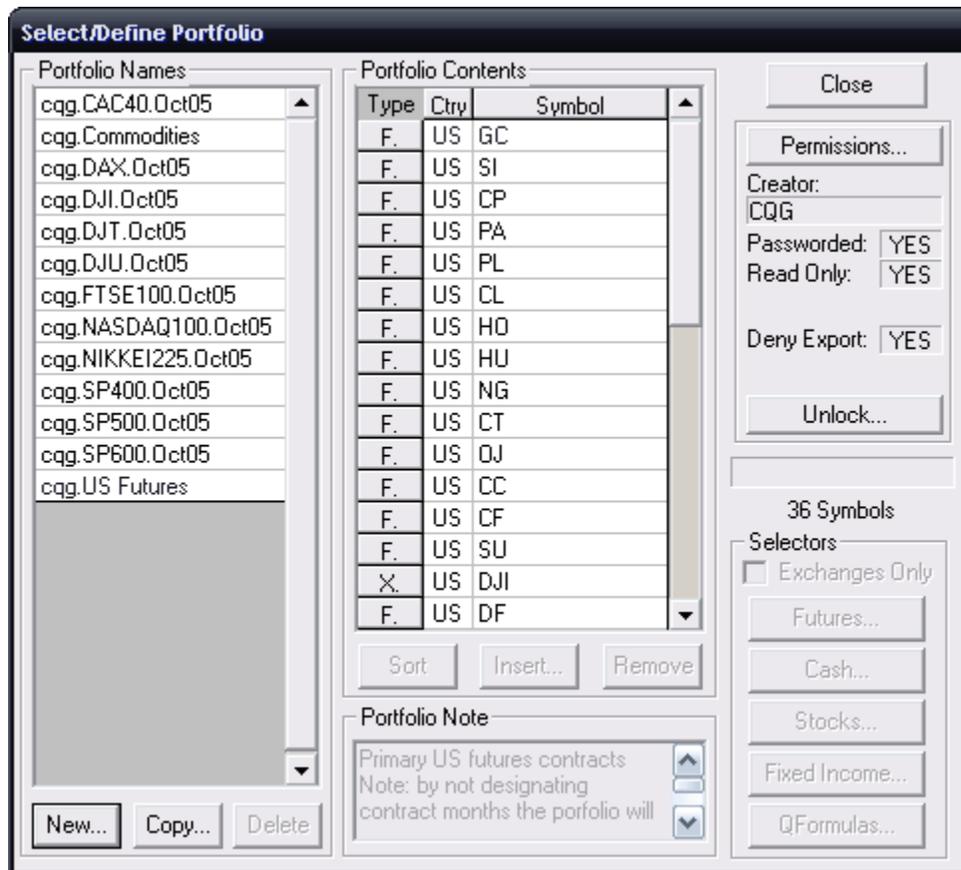
1. Click anywhere on the **Order Ticker** window.
2. Type the order threshold value, then a comma, and then the threshold value. The **Threshold** field appears with that value. Do not put spaces between the values.
3. **Enter**.

You can also change the threshold in **Preferences**.

Defining Portfolios

Portfolios contain the issues that can be used in both the **Market Scan** and **Signal Evaluator** applications. Defining a portfolio involves entering a portfolio name, specifying the portfolio contents, as well as entering a portfolio note and optionally establishing security provisions.

Click the **Portfolio** button to open the **Define Portfolios** window.



You can name a portfolio, copy an existing portfolio, or insert issues into a portfolio.

Portfolio names identify and select individual portfolios. The Portfolio Names list displays the names of portfolios that have already been defined.

Naming a New Portfolio

1. Click the **New** button. This displays the **New Portfolio** window.
2. Enter a name for the new portfolio.
3. Click **OK**.

Copying a Portfolio

You may also want to use an old portfolio and modify it. The fastest way to do that is to copy the old portfolio and then make any insertions or deletions.

1. Select a portfolio from the **Define Portfolios** window.
2. Click the **Copy** button.
3. Enter a name for the new portfolio.
4. Click the **OK** button.

Inserting Issues into a Portfolio

1. Select the portfolio into which the issue should be inserted.
2. Click the **Insert** button in the **Define Portfolios** window.
3. Enter the symbol for the new issue.
4. Click the **OK** button to enter the symbol into the portfolio and close the **Insert an Issue** window.

Changing a Portfolio Name

1. Click the **Portfolio** button.
2. Double-click the name of the portfolio name to be changed.
3. Enter the new name.

Specifying the Portfolio Contents

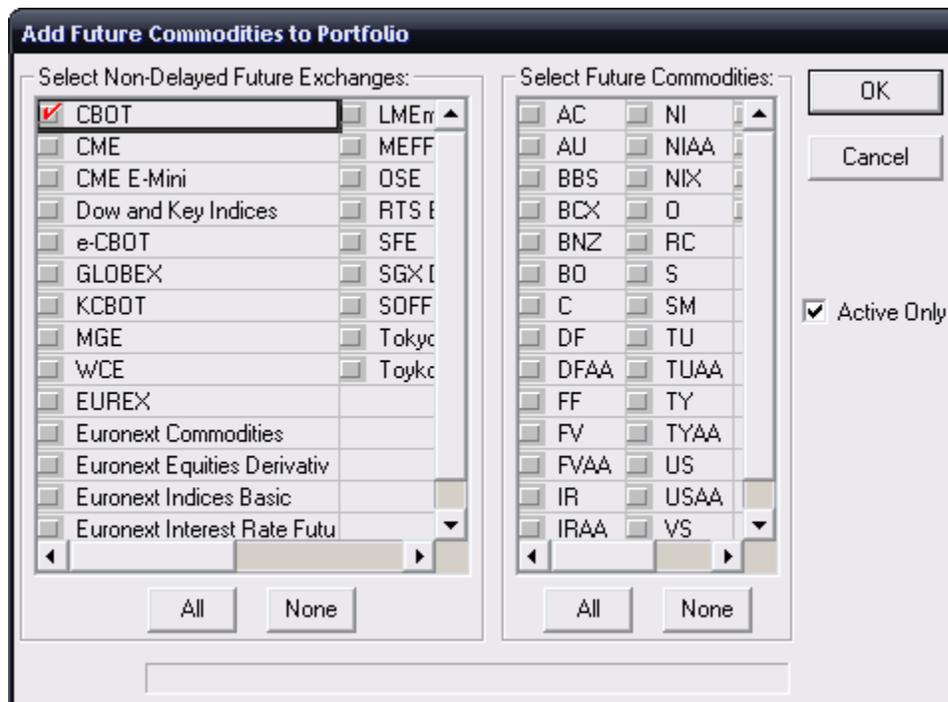
The **Portfolio Contents** list contains the symbols for the **Futures**, **Stocks**, and **Cash** instruments that are scanned when the particular portfolio is selected.

The **Portfolio Contents** section is empty when a new portfolio name is initially selected. The selector buttons provide a quick mechanism for populating the portfolio with multiple issues.

Adding Futures Exchanges and Contracts

- To add a futures exchange, click the exchange name. The symbols for that exchange are displayed.
- To add all futures exchanges, click the **All** button.
- To select the commodities to be included, click the commodity symbols.
- To select all the commodities for the selected exchange(s), click the **All** button.

Selecting the **Active Only** checkbox causes only the most active contract of the selected commodities to be included in the scan. Otherwise, all months for the selected commodities are included.

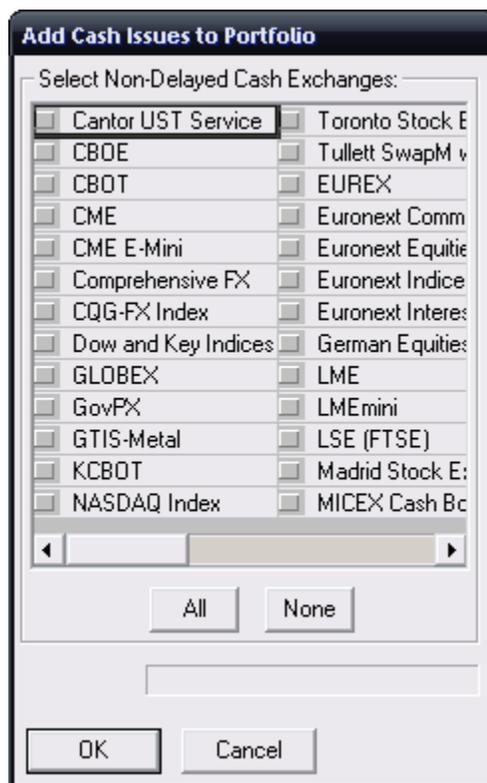


Individual, not-most-active months, may also be added to the portfolio:

1. Click the **Portfolio** button.
2. Click the **Insert** button.
3. Enter the issue symbol.
4. Click the **OK** button.
5. Click the **None** button to clear all previously selected commodities.
6. Select **OK** to include the selected contracts in the **Market Scan** portfolio and close the **Add Future Commodities to Portfolio** window

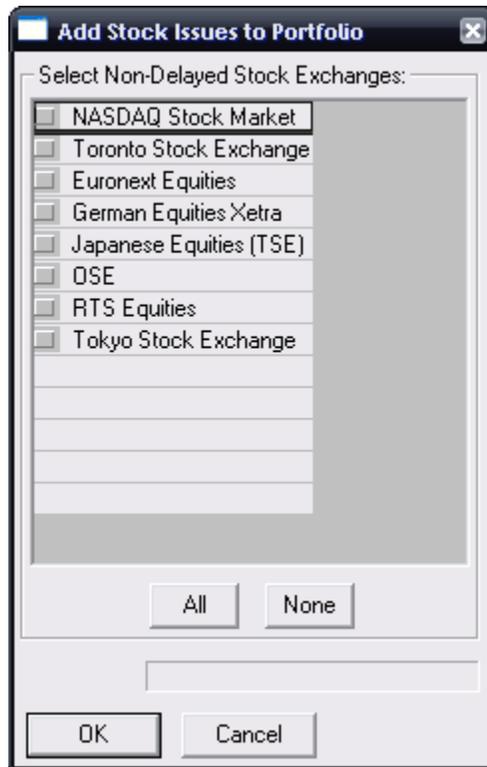
Adding Cash Contracts

- To add a cash exchange/data provider, click the exchange name.
- To add all cash exchanges, click the **All** button.



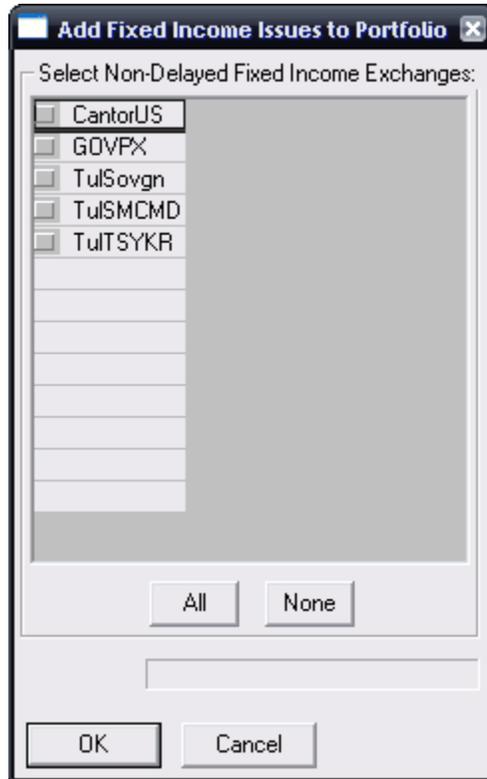
Adding Stocks

- To add a stock exchange, click the exchange name.
- To add all stock exchanges, click the **All** button.



Adding Fixed Income

- To add a Fixed Income exchange, click the exchange name.
- To add all Fixed Income exchanges, click the **All** button.

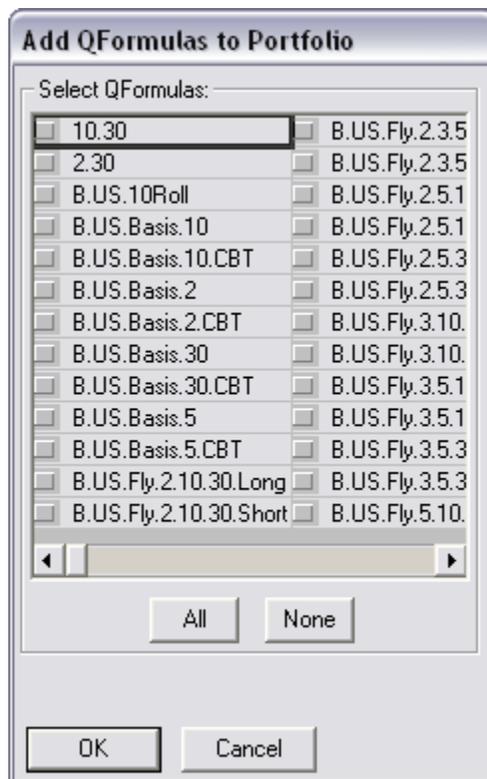


Adding QFormulas to a Portfolio

By adding **QFormulas** to a portfolio, you are able to run market scans on your own spread equations as well as on pre-defined **QFormulas**.

To use the QFormulas button

1. Open a **Market Scan** window.
2. Click the **Portfolio** button. The **Select/Define Portfolio** window opens.
3. Click the **QFormulas** button. It is disabled if the **Exchanges Only** check box is selected. The **Add QFormulas to Portfolio** window opens.

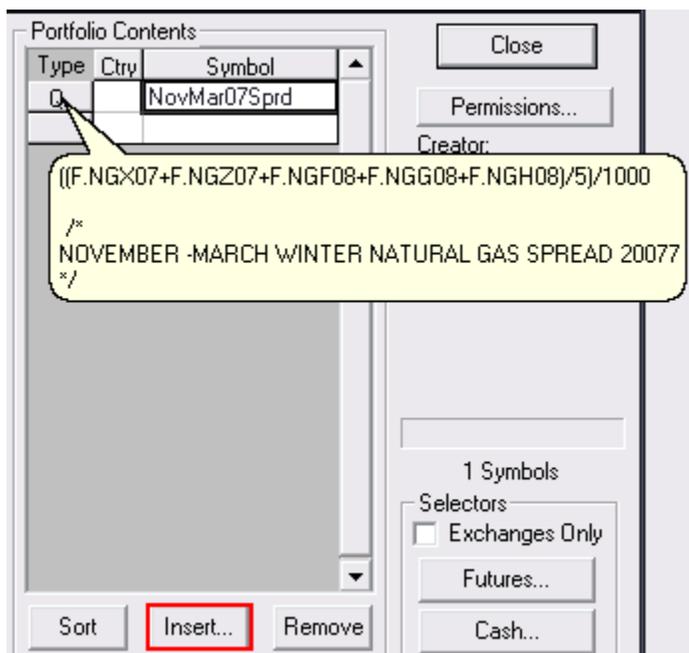


4. Click each of the **QFormulas** that you would like to include in the scan. Click the **All** button to add all of the **QFormulas**.
5. Click **OK**.

To use the Insert button

1. Open a **Market Scan** window.
2. Click the **Portfolio** button.
3. Click the **Insert** button. The **Insert an Issue** window opens.
4. Type a **Q** followed by a period and the name of your QFormula, like this:
Q.NovMar07Sprd.
5. Click **OK**. The QFormula is displayed on the **Select/Define Portfolio** window in the Portfolio Contents. The **Type** cell will contain a **Q**. The **Ctry** cell will be empty. The **Symbol** cell contains the **QFormula** name.
6. Hovering over the entry displays a tool tip.

After inserting a **QFormula**, it is displayed like this:



Working with Portfolios

Futures symbols must be preceded by an F., stocks must be preceded by an S., cash symbols must be preceded by an X., treasury issues must be preceded by a T. and options symbols must be preceded by either a P. for put or a C. for call.

When you omit F., S., X. or T. a default type appears. Only those issues that are available on each system, as determined by your current enablements, can be added to the **Portfolio Contents** list.

Individual contract symbols can be explicitly stated (with specific months and years) or they can be entered in their generic form, so that they always use an active contract. For example: **F.SPH8** is an explicit contract symbol and **F.SP** is a generic symbol. The most active contract is used when the generic symbol is processed.

You can edit issues by clicking in a symbol cell and entering the required changes. Expired contracts are not automatically removed from a **Portfolio Contents** list.

To manually insert an issue into a portfolio

1. Enter the symbol for the instrument on the last line of the **Portfolio Contents** section in the **Define Portfolios** window or select the current issue just below where the new issue is to be placed.
2. Click the **Insert** button.
3. Enter the symbol for the instrument to be added to the portfolio.
The default country code for the symbol also appears. Users can change the country to include an entity with the same symbol, which trades on a different exchange.
4. Click **OK**.

To add all issues from one or several exchanges

Click the **Exchanges only** checkbox to include all the symbols from one more exchanges in the scan.

Exchange Only portfolios are resolved into issues only at Market Scan runtime. Thus, selecting Exchange Only portfolios prevents scanning invalid or expired symbols. Additionally, Exchange Only portfolios are useful for compiling statistics on an exchange-wide basis.

Keep in mind the following points relating to exchange only portfolios:

- Exchanges Only portfolios are accessible solely from Market Scan. They do not appear in the **Select/Define Portfolios** window, unless the window is opened from a **Market Scan** window.
- The **Portfolios Contents** section on the **Define Portfolios** window includes only exchanges, not individual symbols. This section includes all exchanges the user is enabled for. Additionally, all symbols (futures, cash, stocks, and treasuries) from the selected exchanges are included in the Scan.

To edit issues in a portfolio

1. Selecting the issue.
2. Hitting the **[F2]** key.
3. Re-inputting the issue symbol.

To delete issues from a portfolio

1. Select the issues to be deleted.
2. Click the **Remove** button.

To sort issues in a portfolio

Click the **Sort** button.

This sorts the issues in the portfolio in alphabetical order, intermixing stocks, futures and cash instruments.

To use operators with portfolio elements

Rather than simply adding individual elements to a portfolio, you can combine elements using mathematical operators, +, -, x and /. The form for these expressions would be:

AOL * 2.

Note: You cannot start an expression with a mathematical operator. For example: 2* AOL does not run correctly in Market Scan. However, AOL*2 runs fine.

To add security elements to conditions and portfolios

To ensure that user-created conditions and portfolios are not used in an unauthorized way by others, various protections can be established.

To use a previously defined portfolio

1. Click the **Portfolio** button.
2. Select the desired portfolio from the **Portfolio Names** list.
3. Click the **OK** button.

To import an Excel spreadsheet into a portfolio

Your Excel spreadsheet must be one column only.

1. In Excel, select the column you wish to import.
2. On your keyboard, select **Ctrl-C**.
3. In CQGIC, select **More** on the top menu bar.
4. Select **Market Scan**. A market scan window opens.
5. Select **Portfolio** on the left menu bar.
6. Select **New**.
7. Enter a name for the new portfolio.
8. Select **OK**. This portfolio is added to the list on the left of the window.
9. Click in the first field in **Portfolio Contents**.
10. On your keyboard, select **Ctrl+V**. The portfolio is populated with the symbols from your Excel spreadsheet.

To delete a previously defined portfolio

1. Select the portfolio.
2. Click the **Delete** button. This displays the **Confirm Deletion of Component** window.
3. Click the **Delete Component** button.

To enter a portfolio note

The Portfolio Note section (optional) can contain any comments you want to enter. The comments usually describe the contents or intended use of the selected portfolio.

1. Click the Portfolio you wish to enter a note for.
2. Click the **Portfolio Note**.
3. Enter the text for the note or click a different section of the **Define Portfolios** window to define the portfolio further.

To remove a portfolio

You can remove portfolios that are no longer useful.

1. Select the portfolio from the **Portfolio Names** section of the **Define Portfolios** window.
2. Click the **Delete** button.
3. Click **OK** when the **Remove Portfolio** window appears, confirming that the indicated portfolio should be deleted.

Defining User Formulas

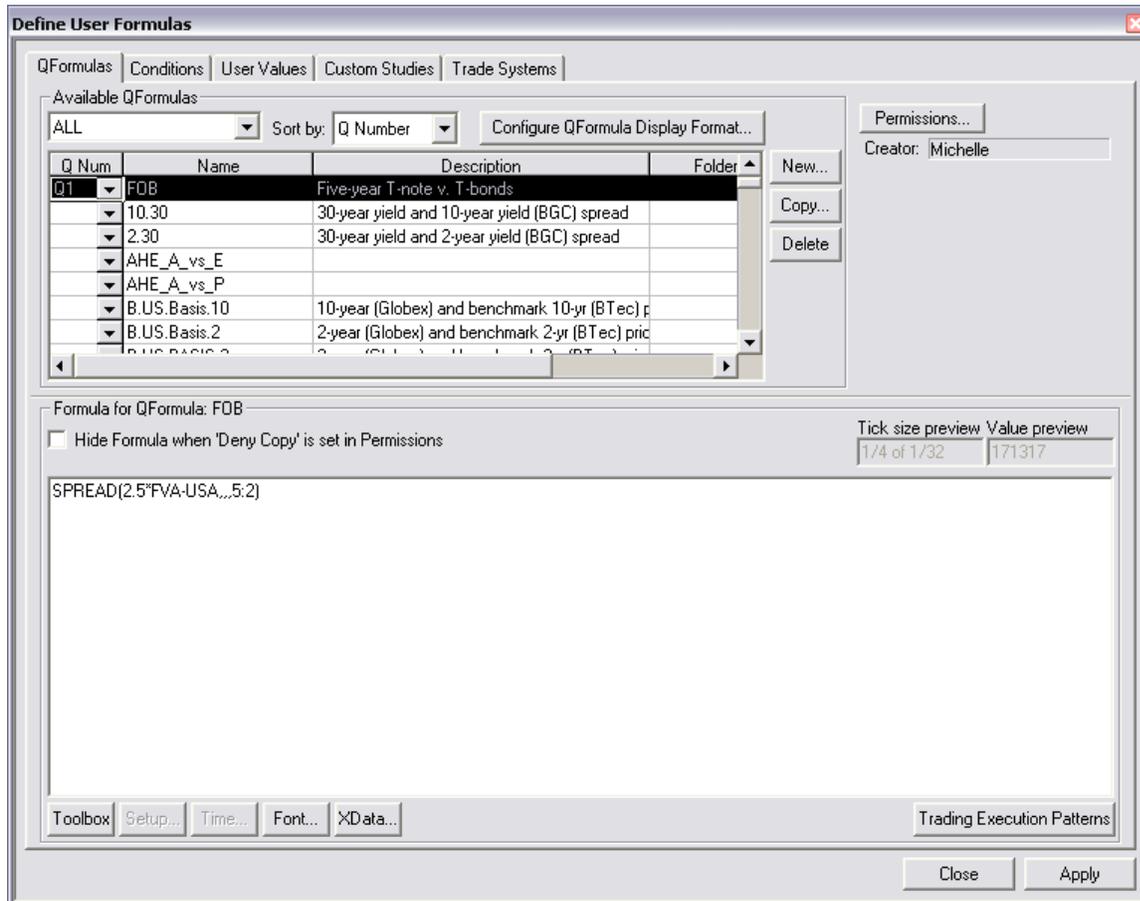
The **Define User Formulas** window is your one-stop location to create your own QFormulas, Conditions, User Values, Custom Studies, and Trade Systems.

This section describes the components of the window and how to use them. Following sections describe each type of formula in detail.

QFormulas	<p>Enables you to define specific market spreads, such as crack or crush, or custom indices.</p> <p>The formula may contain multiple symbols, constants, and coefficients. It may also contain values for bars, studies, and functions. Conditions or user-entered values for QFormulas can be used in a quote or chart window by entering the QNumber in the Command Entry Box.</p>
Conditions	<p>Enables you to define a specific event or condition.</p> <p>Conditions are available for use with MarkIt Conditional Coloring, Market Scan, Condition Alerts, and Functions. Each of these tools indicates when the condition is true.</p>
User Values	<p>Similar to conditions, but user values return a value when the condition occurs instead of a when there's a true or false result. User values are used within other user formulas and functions.</p>
Custom Studies	<p>Specific measurements of market action that you can define, chart, and analyze.</p>
Trade Systems	<p>Allows you to set up a trading strategy and test it using past data.</p>

Opening the Define User Formulas Window

Click the **Formula** button, or click the **System** button and then click **Define User Formulas**. The focus is on the window that you last used.



Define User Formulas Window Components

Each tab contains the same areas: the Formula List, Permissions, and the Formula Editor. Within those areas, components vary.

Formula List

The formula list offers folder and sorting options and buttons to create, copy, delete, and define formulas. Additionally, the **QFormulas** tab has a **Q Num** column, and the **Custom Studies** tab has a **MarkIt** column. The **Custom Studies** tab adds abbreviation, overlay, and toolbar button options.

Available QFormulas

Spreads

Q Num	Name	Description	
Q1	FOB	Five-year T-note v. T-bonds	<input type="button" value="New..."/>
Q2	CLE_ET	Physical v. Financial	<input type="button" value="Copy..."/>
Q3	NOB_UA	10 Yr T Notes v T Bonds	<input type="button" value="Delete"/>
Q4	FYT	5 Yr T Notes v. 10 Yr T Notes	
Q5	HOE_CLE	Heat Crack (barrel to barrel)	

Available Custom Studies

ALL

Name	MarkIt	Description	Folder	
cqg.PivotPts	<input type="checkbox"/>	Pivot Points		<input type="button" value="New..."/>
cqg.RSI w/ MA	<input type="checkbox"/>	Relative Strength Index (R		<input type="button" value="Copy..."/>
cqg.VolSpread	<input type="checkbox"/>	Implied volatility versus his		<input type="button" value="Delete"/>
MATLAB	<input type="checkbox"/>			<input type="button" value="Parms..."/>
OBV_TB1	<input type="checkbox"/>			
TBTF1	<input type="checkbox"/>			

Abbrev: Overlaid
 Toolbar button

Configure QFormula Display Format button: Opens symbol preferences, so that you can select the preferred display format for QFormulas (name, number, or formula).

New button: Opens the **Create a New [Formula]** window to add a new QFormula, Condition, User Value, Custom Study, or Trade System.

Copy button: Opens the **Copy a [Formula]** window to copy a QFormula, Condition, User Value, Custom Study, or Trade System. This function is helpful when you want to create a new formula that shares elements with an existing formula.

Delete button: Opens the **Confirm Deletion of Component** window to deletes a QFormula, Condition, User Value, Custom Study, or Trade System.

Parms button: Opens the **Parameters for [Formula]** window to change, add, and delete parameters. This button is not on the QFormulas window.

To sort the list by name, friendly name, creator, or QNumber and to sort ascending or descending, use the **Sort by** menu.

Drag the column boundary to resize columns.

Permissions

Permissions define component information. For formulas that you create, only a **Permissions** button is displayed. For CQG-provided formulas, there's also an **Unlock** button.

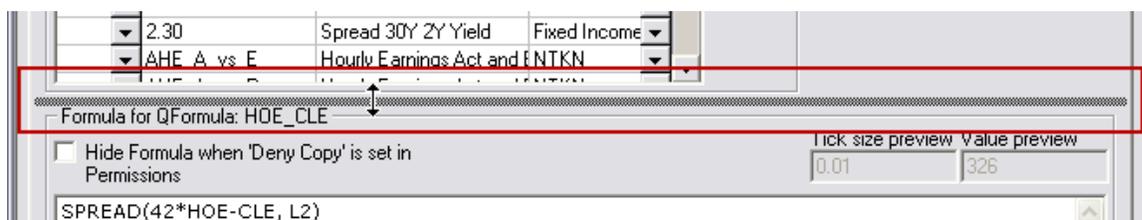


Click the **Permissions** button to open the **View Component Information** window. From that window, you can change component information.

Click the **Unlock** button to open the **Unlock: Add to Known Component Passwords** window. Type the component password to unlock it. Note that all components with that password are unlocked.

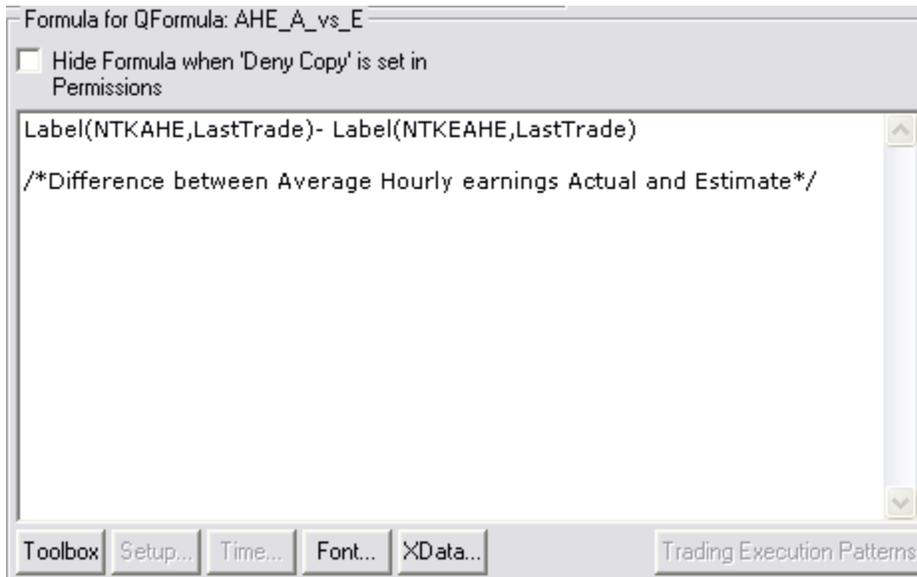
Window splitter

You can resize the formula list and formula editor, making one larger and the other smaller. Hover your mouse over the splitter line between the two until the cursor changes to a double arrow. Click and drag the line to the desired position.

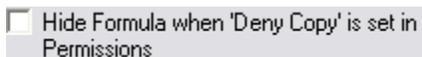


Formula Editor

The **Formula Editor** displays the formula or expression associated with the selected QFormula, Condition, User Value, or Custom Study. This area is empty when a new formula is defined. Formulas may be edited directly in this area.



If you want to hide a formula that is not allowed to be copied, select the Hide Formula check box above the Formula Editor:



Set in **System > Components > View/Change Components > Change Component Info > Passworded**.

To learn how to use the editor, see "[Entering Formulas](#)" on page 32.

Tick size and value previews

When a [spread](#) is entered in the editor, the **Tick size preview** and **Value preview** fields are displayed:

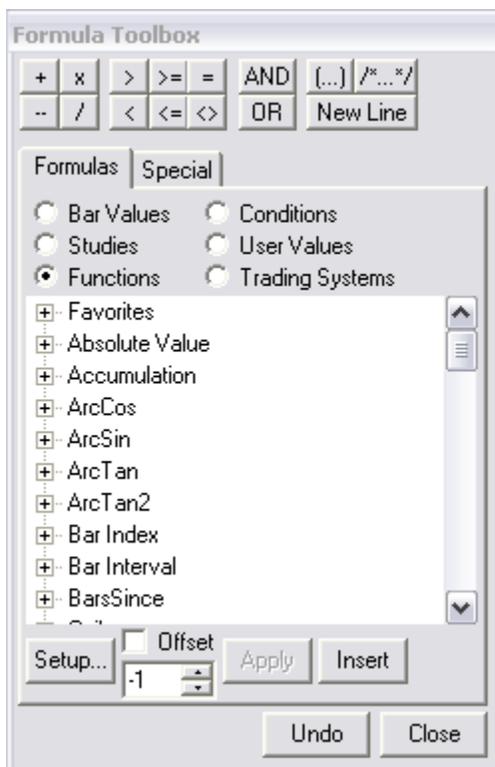


These fields provide a preview of the selected tick size and the value. If the tick size in this example were changed from Auto to 10, the **Tick size preview** would change to 10. **Value preview** shows the best ask.

The value preview is displayed for non-spread formulas.

Toolbox button

This button opens the Formula Toolbox.



For details about using the toolbox, see ["Using the Formula Toolbox \(Toolbox Button\)"](#) on page 39.

Setup button

This button opens the Setup Study Parameters window for the study selected in the Formula Editor. The **Setup** button is active only when a study expression or part of a study expression is highlighted in the Formula Editor.

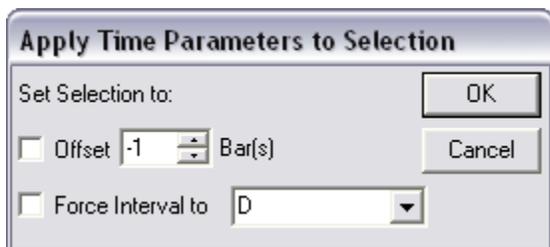


To learn how to use this window, see "[Changing Study Parameters \(Setup Button\)](#)" on page 49.

Time button

This button displays the **Apply Time Parameters to Selection** window, from which you can specify an offset in the selected expression, either backward or forward in time.

The **Time** button is active whenever an expression is highlighted in the Formula Editor.



To learn how to use this window, see "[Setting Time Parameters \(Time Button\)](#)" on page 50.

Font button

This button opens the standard font window, so that you can change the font in the Formula Editor.

XData button

This button, which is on the QFormulas tab only, opens the **Setup XData** window.



To learn more about XData, see "[To create an XData QFormula](#)" on page 55.

Trading Execution Patterns button

This button opens the Set Up Trading Parameters window:

	CLEM1	CLEN1	CLEQ1
▼ Spread Properties			
Color			<input checked="" type="checkbox"/>
Overfill Management			<input checked="" type="checkbox"/>
Auto Hedge Overfills			<input checked="" type="radio"/>
Avoid Overfills			<input type="radio"/>
Ignore partial fills in price discovery			<input type="checkbox"/>
▼ How to Work			
Size	1	2	1
▼ Order Types			
Work	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LMT	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
LMT with offset	<input type="radio"/>	<input type="radio"/>	
Offset	0	0	
MKT	<input type="radio"/>	<input type="radio"/>	
▼ Messaging			
Volume Multiplier	1	1	
Work Threshold	0	0	
Min Size Increment			1
Lots			<input checked="" type="radio"/>
%			<input type="radio"/>
▼ Proportional Execution			
Trigger leaning leg when first leg is partially filled	100	100	
%	<input checked="" type="radio"/>	<input checked="" type="radio"/>	

Entering Formulas

Symbols must be entered in capital letters. Lowercase symbols display the inverse contract value. The system automatically defaults to all capital letters.

Generic contract month codes (?) may be used in QFormulas to allow formulas to calculate using the most active month.

Generic symbol codes (@) are inserted using the Formula Toolbox. All '@' characters must be replaced with an issue before the formula can be used.

The Trade System tab has Entry, Exits, and Costs formula areas with Signal, Price, and Size sub-tabs.

Tick Size

Tick size can be entered in binary or decimal format. These tick sizes are allowed:

1/2

1/4

1/8

1/16

1/32

1/64

1/128

1/256

1/512

1/1024

1/2048

1/2 1/64

1/8 1/32

1/4 1/32

1/2 1/32

For example, SPREAD (USA*2 - ENQ,, 1/4 1/32). Note that if you use the parameters window to set tick size, not all of these values are available.

Using Variables in User Formulas

You can define a variable to use as a shorthand reference to a value or a formula or to nest a named formula inside another formula. Formula variables are used mainly to avoid retyping information that is used frequently and to make it easy to keep track of what a number represents in a formula.

If you have a variable called "LowerThanClose," and it's currently defined as $0.5 * \text{Close}(@)$, it's more meaningful than "2" would be in a formula. To change the value of the variable, which may be used more than once, you only need to change its definition one place.

Each variable can only have one assigned value at a time, and variables in User Formulas are consistently local. This means that unlike user values, the variable exists only within the scope it is declared in, such as the individual trade system, so you should take care in naming your variables. Variables with the same name in two trading systems are defined separately and may have different values. In addition, if you change the variable in one trade system, it will not change the variable with the same name in another.

The `:=` operator is used to assign (store) a value to a variable. (This is not the same as the Boolean operator, the `=` sign.)

Syntax:

```
Variable := Value;
```

The assignment statement must end in a semicolon.

Value can simply be a number, as in the example:

```
NumVar := 5.123;
```

Or a formula,

```
FormVar := 0.5* Close(@);
```

Or a named formula (FormVar in this example) inside a formula:

```
NamedVar := FormVar+5;
```

Naming Formulas

There are two textual identifiers for formulas, **Name** and **Description**.

Q Num	Name	Description
Q1	EP_ENQ	EMini SP 500 v. EMini NDAQ 100
Q2	CLE_ET	Physical v. Financial
Q3	NOB_UA	10 Yr TNotes v. TBonds
Q4	FYT	5 Yr TNotes v. 10Yr TNotes
Q5	FOB	5 Yr TNote v. TBonds
Q6	HOE_CLE	Heat Crack (barrel to barrel)
	10.30	CUS NOB
	2.30	Spread 30Yr 2YR Yield
	AHE_A_vs_E	Hourly Earnings Act and Est
	AHE_A_vs_P	Hourly Earnings Act and Prev

The **Name** is a unique identifier for each formula. The **Description** does not have to be unique, and so it provides a way for you to organize and categorize formulas. The **Description** is especially helpful when you have many formulas and conditions to keep track of.

For CQG-defined formulas, the **Description** provides a way for you to name the formula that is best for your use, as you cannot change the **Name** of these formulas. CQG has pre-populated descriptions for you.

You can change the **Name** of your own formulas, and in that case **Description** can be used as a variant of **Name** or even as a description of the formula. You can customize the use of the field to meet your needs.

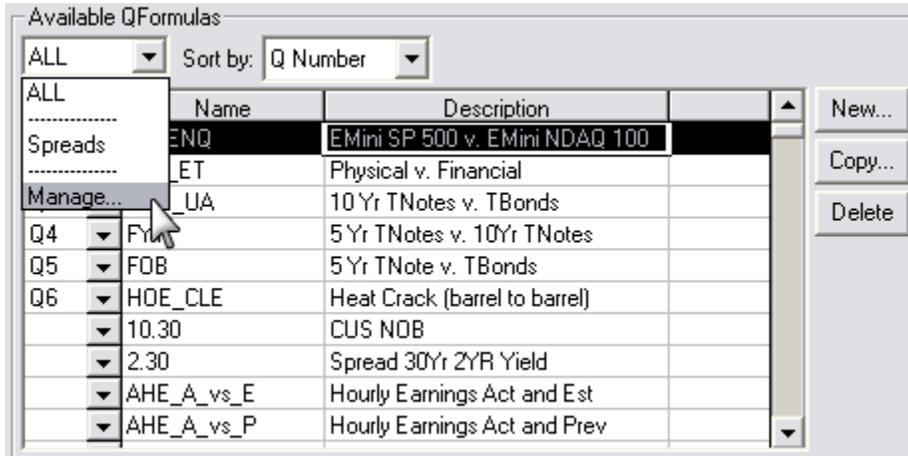
To enter or change a name

1. Double-click the name field.
2. Type a new name.

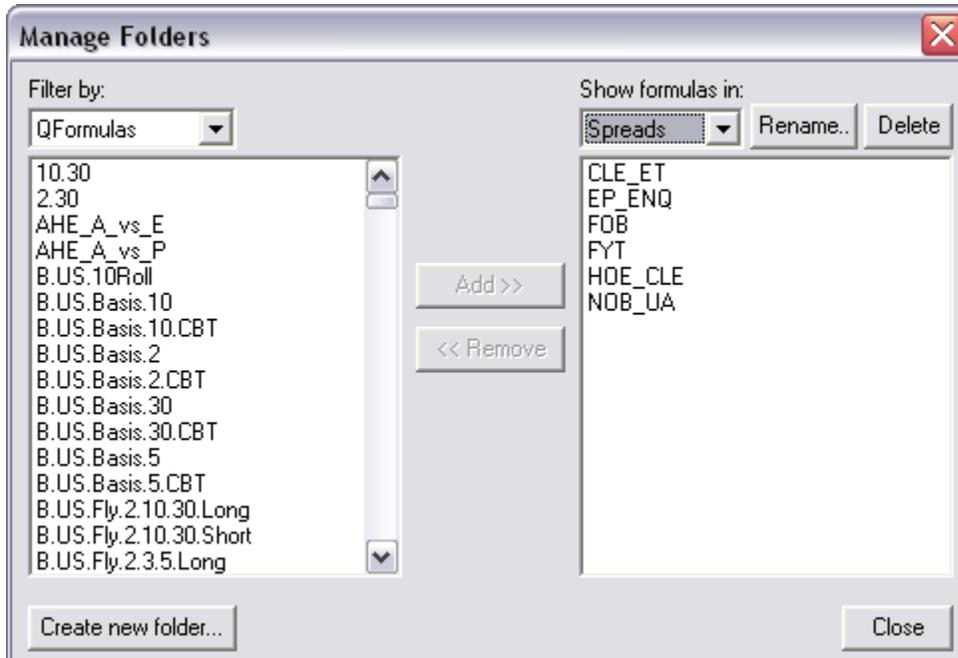
Managing Folders

COG offers the ability to organize your formulas in folders. Doing so allows you to select a folder to export into a pac instead of having to choose each formula individually.

You can create, rename, and delete folders and add formulas to folders. Access folders using the menu under **Available Formulas**:



Add formulas to folders, rename folders, and delete folders on the **Manage Folders** window.



To create a folder

1. Click the folder drop down arrow.
2. Click **Manage**.
3. Click the **Create new folder** button.
4. Type a name for the folder.
5. Click **OK**.

To add a formula to a folder

1. Click the folder drop down arrow.
2. Click **Manage**.
3. From the **Show formulas in** menu, select a folder.
4. To change the formulas displayed, select a different formula type from the **Filter by** menu.
5. From the list on the left, click a formula.
6. Click **Add** to add that formula to the selected folder.
7. When you are finished adding formulas to folders, click **Close**.

To rename a folder

1. Click the folder drop down arrow.
2. Click **Manage**.
3. From the **Show formulas in** menu, select a folder.
4. Click **Rename**.
5. Type the new name.
6. Click **Close**.

To delete a folder

1. Click the folder drop down arrow.
2. Click **Manage**.
3. From the **Show formulas in** menu, select a folder.
4. Click **Delete**.
5. Click **Yes** to confirm the deletion.

Defining Formula Parameters (Parms Button)

The Parameters window allows you to save specific, often-used values to be easily inserted into a condition, user value, custom study. Parameters are listed on the **Special** tab of the Formula Toolbox.

Parameters for Condition: UA_ADX_High

Name: Name of the parameter.
 Int: Specifies if the parameter is an Integer or a Floating point number.
 Def Value: The Default Value for the parameter.
 Col Header: The Column Header shown when modifying the parameters value. <Optional>
 Row Header: The Row Header shown when modifying the parameters value. <Optional>
 Note: The User Note for the parameter.

Name	Int	Def Value	Col Header	Row Header	Note
Period	<input checked="" type="checkbox"/>	10	Period	ADX	
Threshold	<input checked="" type="checkbox"/>	20	Threshold	ADX	

Buttons: OK, Cancel, New, Delete

To open this window, click the **Parms** button associated with the condition, user value, and custom study or trading system.

To view and edit parameters used

1. Select the Condition, User Value, Custom Study, or Trade System for which you want to view parameters.
2. Click the **Parms** button. The standard parameters associated with the study are displayed.
3. Make desired changes to the parameters, including adding a column or row header.
4. Click **OK**.

To add a parameter

1. Click the **Parms** button.
2. Click the **New** button.
3. Enter a name for the parameter.
4. Select the **Int** check box if the parameter is going to be an integer. Leave the box unchecked if the parameter is going to be a floating-point decimal number.
5. Enter a default value.
6. Enter column and row header names if desired.
7. Enter a note if desired.
8. Click **OK**.

To delete a parameter

1. Select the Condition, User Value, Custom Study, or Trade System that contains the parameter you want to delete.
2. Click the **Parms** button.
3. Select the parameter you want to delete.
4. Click the **Delete** button.

To insert a parameter

After customizing and adding parameters, they can be inserted into a formula.

1. Click in the location you want to add the parameter in the Formula Editor.
2. Click the **Toolbox** button.
3. Go to the **Special** tab.
4. Click the parameter you want to add.
5. Click the **Insert** button.
6. Click **Close**.

Note: Each parameter can be inserted only into the condition for which it was defined. To re-use the same parameter for more than one condition, you must redefine the parameter.

Using the Formula Toolbox (Toolbox Button)

The **Formula Toolbox** facilitates defining **Q Formulas**, **Conditions**, **User Values**, **Custom Studies** and **Trading Systems**. Items selected from the **Formula Toolbox** can be inserted into the expression at the cursor point (using the **Insert** button) or can replace a highlighted formula element in the Formula section of the **Define User Formulas** window (using the **Replace** button).

Click the **Toolbox** button on the **Define User Formulas** window to access the **Formula Toolbox**.

To insert a Value (Bar Values, Studies, Functions, Conditions, User Values and Trading Systems are all values) into your Formula:

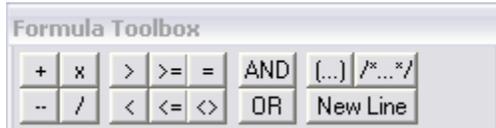
1. Place the cursor in the formula where you want the value inserted.
2. Click the **Toolbox** button.
3. On the **Formulas** tab, select a value type.
4. Select the specific value from the list that is displayed.
5. Click the **Insert** button.
6. The formula is updated with the selected value inserted into the formula at the cursor's location.

The **Formulas** section of the **Formula Toolbox** lists 6 types of values that can be inserted into formulas: Bar Values, Studies, Functions, Conditions, User Values, and Trading Systems. Within these 6 categories, the Formula Toolbox lists different specific values. Additionally, each listing of values contains a Favorites section that lists the most recently used items for each type of value.

To input a comment into a formula

1. Type in a comment.
 2. Select the comment.
 3. Click the **Comment** button.
- Or
1. Click the **Comment** button.
 2. Type a comment.
 3. Right-click the **Comment** button.

Operators



These buttons allow you to insert operators in your formulas.

Operator	Description
+	Adds two numbers or expressions.
-	Subtracts one number or expression from another.
*	Multiplies two numbers or expressions.
/	Divides one number or expression into another.
>	Inserts a relational operator that evaluates as true when the value on the left side is larger than the value on the right side.
<	Inserts a relational operator that evaluates as true when the value on the left side is smaller than the value on the right side.
>=	Inserts a relational operator that evaluates as true when the value on the left side is larger than or equal to the value on the right side.
<=	Inserts a relational operator that evaluates as true when the value on the left side is smaller than or equal to the value on the right side.
=	Inserts a relational operator that evaluates as true when the value on the left side is equal to the value on the right side.
<>	Inserts a relational operator that evaluates as true when the value on the left side is not equal to the value on the right side.
AND	Inserts a logical operator that returns True if the value on both sides evaluate as True.
OR	Inserts a logical operator that returns True when the values on either side evaluate as True.
(...)	Adds parentheses around the selected elements, so those mathematical operations are done first.
...\	Designates the selected section as a comment that will not be used in the calculations.
New Line	Inserts a line feed character at the cursor to start a new line, and continues the formula on the new line.

Bar Values

Select **Bar Values** on the **Formulas** tab to display the list of eleven types of Bar Values. They are:

Bar Value	Description
Bar	The time-based classic open-high-low-close bar.
Bar External Data	<p>Allows you to take sub-minute (millisecond) external data and plot a bar chart. These charts can be viewed as historical (static) or in a snap-shot/live mode (dynamic) depending on the data source.</p> <p>Markets with good trade activity that will give the granularity needed for millisecond analytical decision making are best for this study.</p> <p>This study is used with an external data source that is sub-minute and either an historic ASCII data set or a continuously appended ASCII data set.</p>
Constant Volume Bar	The bars are built based on volume, tick or actual volume when available. Time is not a factor.
CVB External Data	<p>Allows you to take sub-minute (millisecond) external data and plot a CVB chart. These charts can be viewed as historical (static) or in a snap-shot/live mode (dynamic) depending on the data source.</p> <p>Markets with good trade activity that will give the granularity needed for millisecond analytical decision making are best for this study.</p> <p>This study is used with an external data source that is sub-minute and either an historic ASCII data set or a continuously appended ASCII data set.</p>
Equalize Sessions	The data is adjusted backwards so there is no gap in prices between closes and opening prices between sessions.
Fill Gap	Any gaps in the charts are filled in with the last traded price.
No Gap	Any gaps in the chart are removed and time is compressed.
Percent Bar	Set a start date or index value and the prices are plotted as a percentage change from the start point.
Point & Figure	The classic X & O chart style where the prices are filtered based on a minimum price movement and minimum reversal size. The X indicates a rising price and O is a declining price. Time is not a factor.
Spread Bar	The price difference between two instruments is calculated on a one-minute basis or higher and the bars, candlesticks or a line chart is built on these values.

Bar Value	Description
TFlow	The high and low of each bar is the best ask and best bid price respectively. The bars are color-coded to indicate trades at the bid (red) or at the ask (green) price. The size and width of the bar is relative to the amount of executed volume. Please note that as of version 8.5, you must replace @ with a symbol. Also, note that this value returns regular DOM data as represented by the DOM function.
TFlow External Data	Allows you to take sub-minute (millisecond) external data and plot a TFlow chart. These charts can be viewed as historical (static) or in a snap-shot/live mode (dynamic) depending on the data source. Markets with good trade activity that will give the granularity needed for millisecond analytical decision making are best for this study. This study is used with an external data source that is sub-minute and either an historic ASCII data set or a continuously appended ASCII data set.
Tick Chart	The last traded price is plotted as a line.
Yield	For the fixed income markets. A bar chart is plotted based on the yield of the fixed income instrument. Six yield models are available. Annual or semiannual compound rates are available.

For each type, there is a list of available data points. For example, Bar:

Bar Data	Description
AskTradeVol	Executed volume at the ask price
Avg	$(\text{Open} + \text{High} + \text{Low} + \text{Close})/4$
BestAsk	Inside market ask price
BestAskVol	Inside market ask size
BestBid	Inside market bid price
BestBidVol	Inside market ask size
BidTradeVol	Executed volume at the bid
Close	Closing price
High	High price of bar
HLC3	$(\text{High} + \text{Low} + \text{Close})/3$
Last	Most recent price

Bar Data	Description
Low	Low price of bar
Mid	$(\text{High} + \text{Low})/2$
Open	Opening price
Range	High – Low
TrueHigh	Whichever is greater: high or previous close
TrueLow	The lesser of low and previous close
TrueRange	TrueHigh – TrueLow

About Current Values

Current values include CurrentBestAsk, CurrentBestAskVol, CurrentBestBid, CurrentBestBidVol, CurrentHigh, CurrentLow, CurrentOpen, CurrentTickVol, CurrentVol, and Last.

As outputs, both current and regular bar values are updated on every tick regardless of the recalculation setting (**Setup > Chart Preferences > Recalc**).

Current values were designed especially for building trading systems.

As input variables in trading systems, the current bar values recalculate on every tick within the trading system regardless of the recalculation settings, while the regular bar values follow the recalculation mode setting.

Studies

Select **Studies** on the **Formulas** tab to display the list of available studies and study outputs.

No display parameters can be changed when the **Setup Study Parameters** window is accessed from the **Formula Toolbox**.

Additionally, all study calculations which require a current bar value (open, high, low or close) will use the close of the previous bar to calculate values when the current bar is incomplete.

For details about a particular study: select it, click the **Setup** button, and then click the **Info** arrow.

Functions

Select **Functions** on the **Formulas** tab to display the list of available functions.

For details about a particular function: select it, click the **Setup** button, and then click the **Info** arrows.

Conditions

Select **Conditions** on the **Formulas** tab to display the list of available conditions.

To enable you to quickly identify inserted conditions in your formulas, CQG inserts the letter "B" in front of the condition name.

User Values

Select **User Values** on the **Formulas** tab to display the list of available User Values.

To enable you to quickly identify inserted User Values in your formulas, CQG inserts the letter "V" in front of the condition name.

Setup Button

The **Setup** button on the **Formulas** tab opens the parameters for the value, study, function, condition, user value, or trading system.

Offset Checkbox and Offset Box

The **Offset** checkbox on the **Formulas** tab determines whether an offset value will be applied. When the **Offset** checkbox is selected, the specified Offset value will be entered into an expression.

The offset value set in the **Offset** box determines which bar is examined when the expression is evaluated. An offset value of (-1) for a Bar Value CLOSE means the formula will examine the close of the bar that occurred 1 bar back in time from the current bar. Likewise, an offset of 1 means the formula would look at the next bar's close.

1. Select the expression to apply the offset.
2. Select the **Offset** checkbox.
3. Indicate the amount of the offset in the **Offset** box by either using the arrow keys or typing a number.
4. Click the **Apply** button.

Apply Button

Click the **Apply** button on the **Formulas** tab to insert the specified Toolbox item into the selected expression in the **Formula Editor** and to apply the specified Toolbox item to any text that is selected in the **Formula Editor**.

Example: When the expression `RSI(@,9)` is selected in the Editor and the Toolbox Item `MA(Sim,21)` is applied to this expression using the Apply button, the Editor displays `MA(RSI(@,9),Sim,21)`. When evaluated, the modified expression produces a 21-period Simple Moving Average of a 9-period Relative Strength Index of the issue substituted for the "@".

The **Apply** button is disabled if nothing is selected in the Formula Editor or if the selected element cannot have a sub-element.

Insert/Replace Button

The **Insert** button on the **Formulas** tab allows the user to insert the selected bar value, study, function, condition or user value into the formula. These elements are inserted immediately, either at the point of the cursor if it is positioned in the **Edit Formula** area, or at the end of the **Edit Formula** area if the cursor is not in the Edit Formula area.

The **Insert** button changes to a **Replace** button when a section in the **Edit Formula** area is selected. The **Replace** button allows an expression in the **Formula** Toolbox to be inserted into, and replace a selection in, the **Define User Formulas** window.

Special Components



Button	Description
XABOVE	Inserts a relational operator that evaluates as true when the Study Operator, Bar Value, or other item on the left side was smaller (one bar ago) and is now larger than the Study Operator, Bar Value, or other item on the right side. This would be true when the value on the left "crosses above" the value on the right.
XBELOW	Inserts a relational operator that evaluates as true when the Study Operator, Bar Value, or other item on the left side was larger (one bar ago) and is now smaller than the Study Operator, Bar Value, or other item on the right side. This would be true when the value on the left "crosses below" the value on the right.
GOINGUP	Inserts a relational operator that evaluates as true when the Study Operator, Bar Value, or other item was smaller one bar ago.
GOINGDN	Inserts a relational operator that evaluates as true when the Study Operator, Bar Value, or other item was larger one bar ago.
TURNSUP	The TURNSUP button inserts a relational operator that evaluates as true when the Study Operator, Bar Value, or other item was larger one bar earlier and one bar later.
TURNSDN	Inserts a relational operator that evaluates as true when the Study Operator, Bar Value, or other item was smaller one bar earlier and one bar later.
NOT	Inserts an operator that negates that value of the expression that follows

Button	Description
	it. The expression evaluates as true when the value on the right side evaluates as false.
WHEN	Inserts a conditional operator that evaluates as true when the expression that follows the WHEN operator evaluates as true.
IF(, ,)	<p>Inserts a conditional operator that changes the value used in the Formula, depending on the evaluation of an expression in the IF(, ,) operator.</p> <p>After the IF(, ,) operator has been inserted into a Formula expression, the expression must be edited to include three parameters:</p> <p>The first parameter, entered between the open parenthesis and the first comma, should contain the expression that will be evaluated for the IF(, ,) operator. The expression must result in either a True or False value.</p> <p>The second parameter, entered between the first and second commas, should contain the value or expression used in the Formula expression if the IF(, ,) expression (first parameter) evaluates as True.</p> <p>The third parameter, entered between the second comma and the close parenthesis, should contain the value or expression to be used in the Formula expression if the IF(, ,) expression (first parameter) evaluates as False.</p>

Parameters

The **Parameters** section lists the parameters that have been defined for the selected Condition, User Value, or Custom Study.

Insert/Replace Button

When the **Insert** button is visible, the **Replace** button is hidden, and vice versa. The **Insert** button allows you to insert the selected parameter into the formula. The parameter is inserted at the point of the cursor.

The **Replace** button allows you to replace a chosen section of the formula with a parameter. It is only visible when a section in the Formula area has been selected.

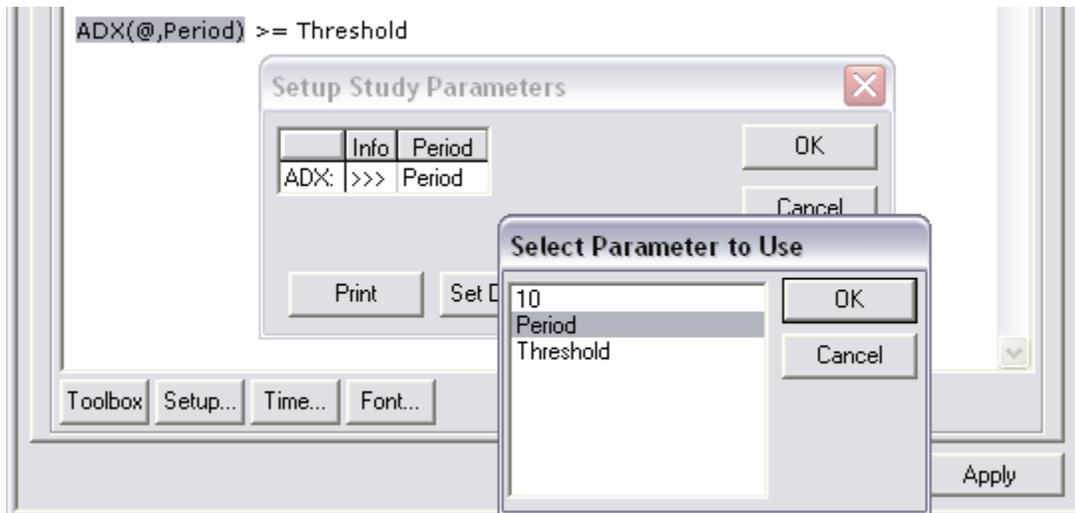
1. Select the section of the formula to be replaced in the **Define User Formulas** window.
2. Select the desired parameter from the **Parameters** section under the **Special** tab in the **Formula Toolbox**.
3. Click the **Insert** button.

Undo Button

The **Undo** button reverses the last action or deletes the last entry you made. Only the immediately preceding action can be undone.

Changing Study Parameters (Setup Button)

The Setup Study Parameters window allows you to select various calculation-related characteristics of the study display.



To open this window, click the **Setup** button.

The **Setup** button is available for QFormulas, Conditions, User Values, and Custom Studies. It is active only when a study in the Formula Editor is selected.

Aesthetic parameters are changed by accessing study parameters on the chart.

If you click this button with a spread formula highlighted, the **Setup Synthetic Spread Calculation Parameters** window opens.

To change parameters

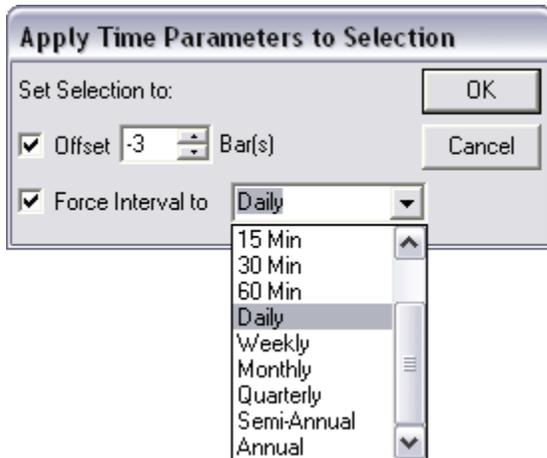
1. Select a study in the Formula Editor.
2. Click the **Setup** button.
3. Click or right-click a parameter to change the setting for that element.
4. Click **OK**.

Click the **Print** button to print the current parameters selections.

Click the **Set Defaults** button to make the current selections the default. In other words, those selections will come up whenever that study is selected.

Setting Time Parameters (Time Button)

You can apply offsets and select the bar interval for the items selected in the Define User Formulas window using the Apply Time Parameters to Selection window.



To open the window, click the **Time** button. Like the **Setup** button, the **Time** button is available for QFormulas, Conditions, User Values, and Custom Studies. It is active only when an item in the Formula Editor is selected.

To apply a time offset

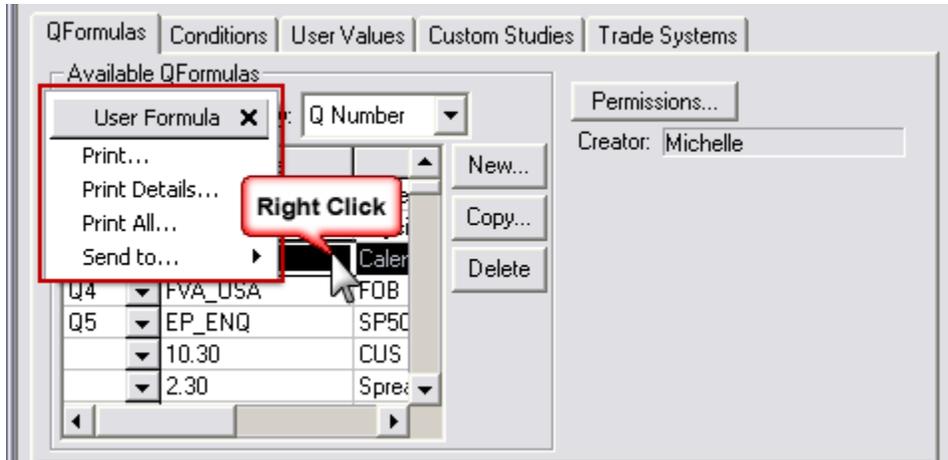
1. Select the expression to apply the offset to.
2. Click the **Time** button.
3. Click the **Offset** checkbox.
4. Enter the amount of the offset. Positive offsets refer to future bars, and negative offsets refer to past bars. For example, an offset of -1 is used for one bar ago.

To apply a chart interval

1. Select the expression to apply the offset to.
2. Click the **Time** button.
3. Click the **Force Interval to** checkbox.
4. Click the dropdown arrow to select a bar interval from the list. Choices include both intraday and historical intervals: 1-min, 5-min, 10-min, 15-min, 30-min, 60-min, daily, weekly, monthly, quarterly, semi-annual, and annual.

Printing Formulas

Right-clicking on a formula opens the print menu:



- **Print:** Prints the formula as it is displayed in the editor (display string).
- **Print Details:** Prints the display string and adds the parameter details (study string).
- **Print All:** Prints all the formulas in the list as display strings.
- **Send to File:** Allows you to save the formula on your PC. If **Details** is checked, the study string is printed.
- **Send to Clipboard:** Saves the formula to the clipboard to paste elsewhere. If **Details** is checked, the study string is printed.

Defining QFormulas

QFormulas (Quote Formulas) generally establish relationships between quoted values. These values are often used to determine spreads. For example, QFormulas can quickly determine the value of a soybean crush spread in the agricultural markets, a crude oil crack spread in the petroleum markets, or a treasury spread in the financial market. QFormulas can also define custom indices.

QFormulas can be used for:

- Weighting spreads between markets to normalize different contract specifications (for example, heating oil is quoted in gallons while crude oil is quoted in barrels).
- Monitoring the basis between the cash and futures or two futures contracts of different months. Arbitrageurs find these spreads particularly interesting.
- Monitoring and charting the daily equity gain or loss in a distinct portfolio.
- Tracking custom securities indices. Q Formulas can provide a 'shortcut' if you track an inter-security relationship.

Please see "[Defining Spread QFormulas](#)" on page 60 to learn about QFormulas as they apply to spreads.

Creating QFormulas

You can create entirely new formulas, or you can choose a pre-defined Q Formula from the list that appears when a Q Number is selected. You can rename and edit previously defined formulas, facilitating the creation of new formulas.

CQG provides templates of commonly defined spread formulas. When a template is selected, the formula appears in the Formula Editor. The displayed symbols do not specify the contract month, implying the use of the most active contracts.

The QFormula may contain multiple symbols, constants, or coefficients as well as specific conditions, bar values, study values, user values, and function values.

QFormulas may be used in quote and chart windows by entering the QNumber in the command entry box, for example, enter **q5**.

In addition, QFormulas has the XData feature where you can bring in external data to be charted and to which you may apply studies.

To create a new QFormula

1. Click the **QFormulas** tab on the **Define User Formulas** window.
2. Click the **New** button.
3. Type the name of the formula.
4. Click **OK**. The system automatically assigns the next available QNumber. You change it using the drop down arrow or by typing a new value.
5. Enter the formula in the Formula Editor.
6. Click **Close** when you're finished.

To copy a previously defined QFormula

1. Select the formula you want to modify.
2. Click the **Copy** button.
3. Enter the name of the new formula.
4. Click **OK**.
5. Make the necessary changes in the Formula Editor.
6. Click **Close** when you're finished.

To create an XData QFormula

XData allows you to import your proprietary, external minute or higher time-frame data into CQG Integrated Client for charting and analytical needs. XData is associated with a QFormula.

1. Click the Formula button to open the **Define User Formulas** window.
2. On the **QFormulas** window, click the **New** button.
3. Type a name for the QFormula, and click **OK**. The new QFormula is displayed in the list with the next QNumber in the series assigned to it. Click the drop down arrow to change the QNumber or type a new number.
4. Click the **XData** button (at the bottom of the Formula Editor).
5. Enter a CQG symbol in the **Issue** field. The symbol you choose reflects the same holiday schedule, session information, and price format as your external data.
6. Browse to find the data file to use in the formula.
7. Select the date format that you used in the data file. If you select OldFormat, then the date format must be YYMMDD in the data file.
8. If you would like the system to check for changes in the ASCII file and automatically import the data into CQG, then set the **Update Rate** in seconds.
9. Click **OK**.

Data file format

The ASCII file must be tab-delimited (.txt file) or space-delimited (.prn file). File type .csv (comma-delimited) cannot be used. Data must be ascending.

For XData study, the columns should contain this bar data:

- Column A = Date

If you select OldFormat as the date type when you set up the QFormula, then the date format must be YYYYMMDD. Otherwise, the date format can be any combination of DD, YY, and MM with any non-digit delimiter. For example, YYaDDbMM is valid date format.

- Column B = Time

Format HH:MM or HHMM. For daily or higher time-framed data, you do not need this column.

- Column C = Open
- Column D = High
- Column E = Low
- Column F = Close

CQG automatically assigns OHLC to four columns of data following the time, HLC for three columns, HL for two columns, and C for one column.

For BarXData, CVBXData, and TFXData studies, the columns should contain this tick data:

- Column A = Date

Format MM.DD.YY

- Column B = Time

Format hh:mm:ss.iii

- Column C = Bid
- Column D = BidVolume
- Column E = Ask
- Column F = AskVolume
- Column G = Trade
- Column H = TradeVolume

You can also create a file using CQG data by copying and pasting data from a Tabular Display chart.

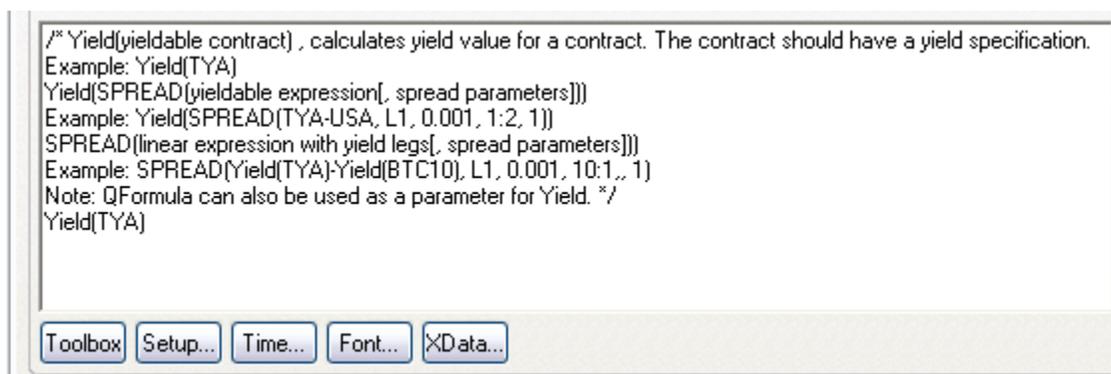
To create a yield QFormula

COG provides a way to calculate the yield of a futures contract based on the treasury delivered against it. The calculation uses the invoice price, which is the conversion factor multiplied by the futures price.

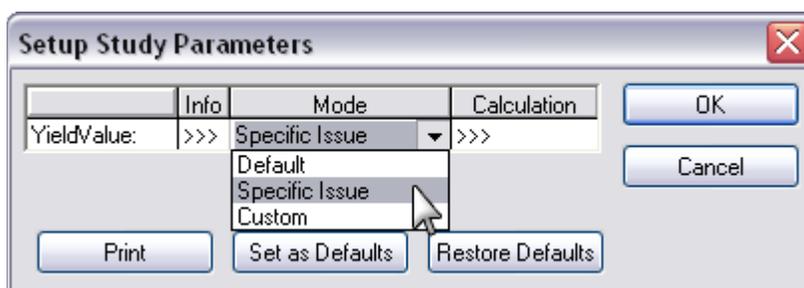
You create a QFormula and then set the treasury and the calculation parameters. For example, if you know the cheapest-to-deliver (CTD), then you can use that treasury's maturity and coupon to calculate the futures contract yield.

Apply the QFormula as you would any QFormula: on a chart, on a trading application, or on a quote application.

1. On the **Define User Formulas** window, click the **QFormulas** tab.
2. Click the **New** button.
3. Type a name for the QFormula.
4. Click **OK**.
5. Type **Yield(** and the system displays the yield formula and an example to assist you. Replace the @ in **Yield(@)** with a symbol. Alternatively, you can enter the symbol, and then apply the Yield function.



6. Click the **Setup** button.
7. Choose one of three modes:



Default = Calculates yield based on futures standard contract maturity and coupon. For example, TYA coupon is 6% and a 10-year maturity from today. In addition, you can use a cash treasury issue such as Yield(BTC10) for a QFormula for a tradable spread, such as SPREAD(Yield(TYA)-Yield(BTC10), L1, 0.001, 10: 1,, 1). Selecting **Default** for Yield(BTC10) uses the maturity, coupon, and price for the benchmark 10-year treasury.

Specific Issue (only with futures) = Calculates yield of the futures contract based on the entered treasury maturity, coupon, and invoice price (futures price * conversion factor for that cash treasury).

Custom = Calculates yield based on a treasury.

8. Choose calculation parameters for a specific or custom issue:

Specific Issue = Type a treasury symbol (e.g. B033P1119) or its alias. The convention, maturity, coupon rate, coupon frequency, and day count are provided automatically.

Info	Symbol	Convention	Maturity	CPN Rate	CPN Freq	Day Count
>>>	B033P1119	Simple Bond	11/15/2019	0.03375	SemiAnnual	Actual/Actual

Custom = Convention, maturity, coupon rate, coupon frequency, day count, and settlement are editable. This mode allows you to use a non-standard settlement date, such as delivery date, in the calculation.

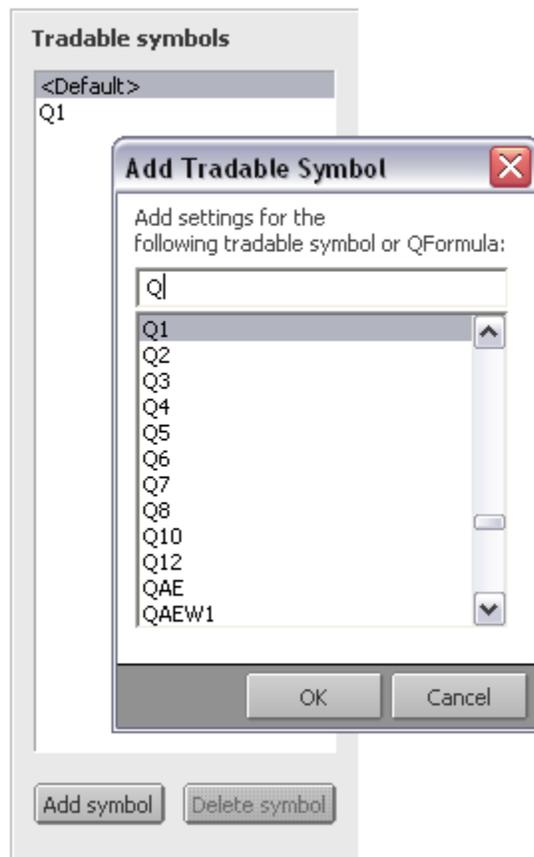
Info	Convention	Maturity	CPN Rate	CPN Freq	Day Count	Settlement
>>>	Simple Bond	11/15/2019	0.0337	SemiAnnual	Actual/Actual	6/30/2011

QFormulas and Trading Preferences

You can assign a set of trading parameters specific to a particular QFormula on these parameters windows:

- **Trading Preferences > Risk**
- **Trading Preferences > Limits & Stops**
- **Trading Preferences > Smart Orders > Iceberg Strategies**

Follow the same steps you would for assigning values to a specific symbol, but select the QFormula instead:



Defining Spread QFormulas

The first step in setting up spreads, prior to setting calculation parameters and trading preferences, is understanding how to write a spread formula.

You can use either common or extended notation, which are [explained later in this section](#). You can also add [net change and yield](#) operators to the spread formula.

While spreads can be set up and traded directly on CQG's trading applications, it's best to create a spread QFormula.

Complex spreads are more easily entered on trading applications by typing a QNumber than by typing a complicated formula. They are also easily entered on a chart of Quote SpreadSheet.

QFormulas are easily copied, so that you can apply different parameters to the same spread expression.

Create descriptions for your QFormulas and group them in folders to better organize and manage them.

QFormulas are created on the Define User Formulas window.

Common and Extended Notation

Spreads can be written in either extended or common notation. For example:

- common notation: EP-ENQ
- extended notation: SPREAD(EP-ENQ,L1)
- common notation: EP-ENQ*2
- extended notation: SPREAD(EP-ENQ*2, CUR, 2.5)

Both formats can be used for QFormulas.

Extended notation spread formula:

SPREAD (<CQG expression>, <calculation mode>, <tick size>, <trading ratio>, <BAT filter>, <rollover>, <rounding>)

For example: SPREAD(HOE-CLE, L1, 0.01, 1:2.5, T:BA, 1, MATH)

For options, the CQG expression includes a spread formula where both sides are formatted as: <C or P>.<commodity prefix><instrument symbol><month code><two-digit year code><strike price>

For example: SPREAD(C.EU6Z113000-P.EU6Z113000)

Parentheses should include everything in the spread equation that follows SPREAD.

Each component should be separated by a comma. If a component is not included in your spread equation, but the following component is, you should include a comma for the first component. Spaces are optional.

For a comprehensive discussion of spread formulas, please see [Additive and Multiplicative Formulas](#).

Component	Description
CQG expression	Names the symbols and the optional multipliers for the spread. Each element of the expression can consist of one symbol and one multiplier. For example: 0.5*EP-0.2*ENQ, 42*HOE-CLE, 1.6*FVA-USA, CLE-ET
Calculation mode	Identifies how you would like the spread calculated, by legs or currency. Allowed values: L1, L2, L3, etc. = Displays price based on tick value of leg selected. CUR = Displays the price based on the full currency values of the legs. Consider E-Mini S&P versus E-Mini NASDAQ 100 using a one contract leg-to-leg ratio. The dollar value of the E-Mini S&P is the price multiplied by \$50. If the price of the futures contract is 1097.25, then the value of the contract is \$54,862.50 (1097.25 * \$50). The dollar value of the E-Mini NASDAQ 100 is the price multiplied by \$20. If the price is of the futures contract is 1798.00, then the value of the

Component	Description
	<p>contract is \$18,902.50 (1798.00 * \$20). If you calculate EP-ENQ with CUR selected, the price displayed is \$18,902.50 (\$54,862.50-\$18,902.50).</p> <p>In the case of a spread where two legs trade in different currencies, adjust the expression to the appropriate currency using a conversion ratio, such as today's exchange rate, as currency is calculated as a raw number and not as a monetary value in a base currency. For example, consider the Dax Index that trades in Euros versus the E-Mini S&P that trades in dollars. To adjust for Euro: SPREAD(DD-EP/1.5,CUR). For USD: SPREAD(1.5*DD-EP,CUR).</p> <p>Default = L1.</p>
Tick size	<p>Specifies the spread tick size. If all legs either have an equal tick size or are for the same contract, then the tick size is the spread tick size. If the tick size is not specified, then the spread tick size for leg mode is equal to the leg tick size.</p> <p>Specify tick size in binary format as well as decimal format. Allowed values:</p> <p>1/2, 1/4, 1/8, 1/16, 1/32, 1/64, 1/128, 1/256, 1/512, 1/1024, 1/2048, 1/2 1/64, 1/8 1/32, 1/4 1/32, 1/2 1/32</p> <p>For example, SPREAD (USA*2 - ENQ,, 1/4 1/32). Some of the smallest tick sizes must be entered manually, as they are not available in the tick size menu.</p> <p>For currency mode, the tick size represents the greatest common denominator (GCD) of leg tick values or the minimum tick value if the GCD is not applicable. For example: SPREAD (ZSE-ZME, CUR). GCD (12.5, 10) = 2.5. 2.5 is the largest number both 12.5 and 10 are divisible by.</p>
Trading ratio	<p>Specifies the order quantity for each leg in this format: leg one:leg two:leg three. Values can be fractional. Fractional values can have six integers (0-9) both before and after the decimal, <i>nnnnnn.nnnnnn</i>.</p> <p>For example:</p> <p>SPREAD (EP*2-ENQ,,,2:1)</p> <p>SPREAD (1.6*TYA-USA,,,5:3)</p> <p>SPREAD (EP - ENQ, , , 1 : 0)</p> <p>SPREAD (EP - ENQ, , , 1.5 : 2.999999)</p> <p>Default = 1:1</p>
BAT Filter	<p>Each leg has a BAT (Bid/Ask and Trade) filter. Separate the filter for each leg with a colon. For example:</p> <p>SPREAD (EP * 2 - ENQ , , , , BA : T)</p> <p>SPREAD (EP - ENQ + TYA , , , , T : BA : BA)</p>

Component	Description
	<p>Allowed values:</p> <p>BA = If leg side is buy, leg ask price is used for spread ask price calculation and leg bid price is used for spread bid price calculation. If leg side is sell, leg ask price is used for spread bid price calculation and leg bid price is used for spread ask price calculation.</p> <p>T = Trades of the given leg are used for both synthetic spread ask and bid prices calculation.</p> <p>B = Leg ask price is used for spread ask price calculation and leg bid price is used for spread bid price calculation.</p> <p>Default = BA</p>
Rollover	<p>If turned on, when one leg expires, all legs roll over to the same month. Allowed values:</p> <p>0 = Same month rollover is turned off.</p> <p>1 = Same month rollover is turned on.</p> <p>Default = 0.</p>
Rounding	<p>Using a fractional trade ratio may result in fractional lots. If so, the number of lots has to be rounded. This parameters indicates how to round: up, down, or mathematically.</p> <p>Rounding applies only to complex strategies with fractional trade ratios. Rounding applies to positive numbers. If used with a negative value, then rounding is applied to the absolute value and then the sign is changed.</p> <p>Please note that rounding impacts spread BBA volume, aggregation DOM volume, and aggregation trade volume.</p> <p>Allowed values:</p> <p>DOWN = always round down</p> <p>UP = always round up</p> <p>MATH = round up when fractional part is 5 or greater; round down when fractional part is less than 5</p>

Additive and Multiplicative Formulas

For our purposes, “additive” formulas contain only addition and subtraction between legs.

“Multiplicative” formulas contain multiplication and division between legs. Multiplicative formulas can be used with additive formulas. For example:

$$\text{SPREAD}(A - \text{SPREAD}(B/C))$$

These formulas have several useful applications, especially when trading arbitrage strategies and ratio of prices instead of difference.

They can be used with:

- Alerts
- Charts
- DOMTrader
- Monitors
- Order Ticket
- Orders & Positions
- Quotes
- Simple Order Ticket
- SnapTrader

Multiplicative formulas can be used in conjunction with aggregation but not with yield and net change.

Additive formulas

Only addition and subtraction operations can be used between spread legs in additive formulas. Formulas can include offsets. For example:

$$EP * 2 - ENQ$$

$$SMA * 0.022 + ZLE * 11 - ZSE$$

$$EP - ENQ + 100.0$$

These additional rules apply:

- Every leg of the expression must include only one contract symbol and one constant multiplier.

Incorrect: $EP * DD - ENQ$

- Multipliers are positive or negative values.

Correct: $2 * ENQ - 4 * DD - EP$

- Multipliers can be used in divisor form.

Correct: $EP - ENQ * 0.5$ or $EP - ENQ / 2$

See also: [Net Change and Yield Spreads](#)

Multiplicative formulas

Only multiplication and division operations can be used between spread legs in multiplicative formulas.

A leg multiplier must be a positive value. For example:

`SPREAD(3.42 * A / (21 * B))`

`SPREAD(A / (5 * B) / C)`

A multiplicative formula should include only those parentheses that contain one leg with its multiplier. The system removes all other parentheses. If the formula cannot be preserved without changing the order of legs, then the formula is rejected. For example:

`SPREAD(A * B / (C * D))` becomes `SPREAD(A * B / C / D)`

`SPREAD(A * B / (C / D))` becomes `SPREAD(A * B / C * D)`

Traders should explicitly nest strategies. For example:

`SPREAD(EP * (TUA - TYA))` should be `SPREAD(EP * SPREAD(TUA - TYA))`

`SPREAD(A * B / (C * D))` should be `SPREAD(A * B / SPREAD(C * D))`

Please note that nested strategies cannot be expressed in simple notation. For example:

Correct: `A * B / C * D`

Correct: `EP * ENQ`

Correct: `RBE / CLE`

Incorrect: `A * B / (C * D)`

Incorrect: `EP * (TUA - USA)`

For buy spreads, legs used as multipliers are bought, and legs used as divisors are sold. Consider these examples from the buying perspective:

`SPREAD(A / B)` buy A, sell B

`SPREAD(A * B)` buy A, buy B

`SPREAD(A * B / C)` buy A, buy B, sell C

`SPREAD(A * B * C * D)` buy A, buy B, buy C, buy D

`SPREAD(A / B / C / D)` buy A, sell B, sell C, sell D

With parameters

Calculation mode, tick size, trade ratio, BAT filter, and roll-over parameters can be used with multiplicative formulas. For example:

`SPREAD (EP * 2 - ENQ)`

`SPREAD (SMA * 0.022 + ZLE * 11 - ZSE, L3)`

`SPREAD (SMA * 0.022 + ZLE * 11 - ZSE, L3, , 10:11:9)`

Tick size is not calculated automatically for spread formulas. If a spread tick size is specified explicitly, it is used regardless of leg tick sizes. When tick size is not specified:

- For both additive and multiplicative formulas in currency calculation mode, tick size of the first leg converted to the currency is used as spread tick size.
- For both additive and multiplicative formulas in leg calculation mode (L1, L2, etc.), tick size of the specified leg is used.

With aggregation

The AGGR() expression can be used with any leg of a multiplicative formula. For example:

`SPREAD(A * AGGR(2 * B & C) / D`

Also, multiplicative formulas can be used as any leg of aggregation expression. For example:

`AGGR(A & SPREAD(B / C / D))`

As applied to arbitrage

To spread two similar commodities quoted in different currencies, traders can convert those commodities to one currency. For example, consider FSUGR and SBE. FSUGR, traded on RTS, is quoted in rubles. SBE, same spec traded on ICE, is quoted in dollars.

You can use FUS, which is futures on USD quoted in rubles (USD/RUR), to convert the sugar price in dollars to rubles. This spread expression is sugar quoted in rubles (2.2046 ratio used to convert pounds to tons):

`SPREAD(2.2046 / 100 * SBE * FUS / 1000).`

Now, you can arbitrage these two sugar contracts:

`SPREAD(FSUGR - SPREAD(2.2046 / 100 * SBE * FUS / 1000))`

Or use aggregation to buy sugar on both exchanges:

`AGGR(FSUGR & SPREAD(2.2046 / 100 * SBE * FUS / 1000))`

As applied to trading using ratio instead of difference

You can trade Gasoline/Crude Oil, Gold/Silver, Gold/Crude as well as other well-known ratios. For example:

SPREAD(RBE/CLE)

Buying this gasoline-crude spread enables you to buy RBE and sell CLE.

According to bid/ask calculation rules, bid/ask quotes are calculated as RBE divided by CLE.

Net Change and Yield Spreads

Net change and yield are calculated as if all of the legs are wrapped in Yield operator, so that these calculations are identical:

$$\text{YIELD}(\text{SPREAD}(\text{leg1}-\text{leg2}+5))$$
$$\text{SPREAD}(\text{YIELD}(\text{leg1})-\text{YIELD}(\text{leg2})+5)$$

And these calculations are identical:

$$\text{NC}(\text{SPREAD}(\text{leg1}-\text{leg2}+5))$$
$$\text{SPREAD}(\text{NC}(\text{leg1})-\text{NC}(\text{leg2})+5)$$

Offsets are calculated as is.

Net Change

You can trade spreads based on net change, the difference between today's current price and the settlement price. Order duration is limited to DAY, but all order types are supported.

Symbology:

By QFormula: NC(Q1)

By spread: NC(EP-ENQ), which is the same as NC(EP)-NC(ENQ)

By leg: NC(EP)-ENQ

The screenshot displays three overlapping windows from a trading platform:

- Left Window:** Titled "PS070410 - SPREAD(.5* NC(EP) - .2* NC(ENQ)), OTE: 12.50". It shows a grid of order sizes (Buy 225, 200, 175, 150, 125, 100, 75, 50, 25, 0, -25, -50, -75, -100) and a net change of $\Delta +150$.
- Middle Window:** Titled "PS070410 - Net change for: E-mini NASDAQ 100, Dec 11, OTE: (50.00)". It shows a grid of order sizes (Buy 1610, 1372, 1168, 2051, 2765, 3268, 3003, 2349, 2154, 1734, 1643, 1345) and a net change of $\Delta +25$.
- Right Window:** Titled "PS070410 - Net change for: E-Mini S&P 500, Dec 11, OTE: 62.50". It shows a grid of order sizes (Buy 14K, 13K, 12K, 15K, 11K, 7963, 11K, 11K, 14K, 16K, 22K, 14K) and a net change of $\Delta +175$. Below the grid is a DOM ladder with buy and sell orders (e.g., Buy 1 175 LMT DAY, Sell 1 175 LMT DAY) and a "No Working orders" message.

Net change formulas are identified on the tabs. Note the net change quotes on the DOM ladder for each leg.

You can apply net change to a spread using the [Setup Synthetic Spread Calculation Parameters](#) window.

Yield

You can trade spreads based on yield for cash symbols. You can trade any order type. Outrights can be traded with any duration. For spreads, only day orders are accepted.

Symbology:

By QFormula: YIELD(Q1)

By spread: YIELD(CUS10-CUS30) which is the same as YIELD(CUS10)-YIELD(CUS30)

By leg: YIELD(CUS10)-CUS30



Yield formulas are identified on the tabs. Instead of price in the price column, the difference in yield is displayed. Yields for the legs are displayed in the right-most column of the DOM ladder. You can change the location of the column in Trading Preferences.

You can apply yield to a spread using the [Setup Synthetic Spread Calculation Parameters](#) window.

Working with the Define User Formulas Window

Formulas are created in the Formula Editor on the **Define User Formulas** window. You can:

- Type complete formulas ([extended notation](#)) directly into the editor using system-provided tips for guidance.
- Apply the **Spread** function found in the **Toolbox** to a simple expression.
- Use synthetic spread calculation parameters to add parameters to common notation.

Define User Formulas

QFormulas | Conditions | User Values | Custom Studies | Trade Systems

Available QFormulas

ALL | Sort by: Q Number

Q Num	Name	Description	Folder
Q1	UA_EP_ENQ	SP 500 v NDAQ 100 Minis	Spreads
Q2	UA_CLE_ET	Physical v Financial	Spreads
Q3	UA_NOB	10Yr TNotes v TBonds	Spreads
Q4	UA_FYT	5Yr TNotes v 10Yr TNotes	Spreads
Q5	UA_FDB	5Yr TNote v TBonds	Spreads
Q6	UA_HQE_CLE	Heat Crack (barrel to barrel)	Spreads
Q7	UA_CLE_FLY	Crude Butterfly	Spreads
Q8	UA_CLE	CLEN, M, Q	Spreads
Q9	UA_DSX_DD_16442	DJ Euro STOXX v DAX	Eur_Spread
Q10	UA_DSX_DD	DJ Euro STOXX v DAX	Eur_Spread
Q11	UA_DB_DG_DL	Bund 10 v Bobl 5 v Schatz 2	Eur_Spread
Q12	UA_DSX_PIL	DJ Euro STOXX v CAC40	Eur_Spread
Q13	UA_QP_QO	Gas Oil v Brent	Eur_Spread
Q14	UA_TYA_USA	Spread of Yield	Yield Spreads
Q15	UA_TYA_BTC	Spread of Yield	Yield Spreads
Q16	UA_TYA_ZNE_BTC_CUS	Aggregated Treasury v Cash	Aggregated
Q17	UA_TYA_ZNR	Aggregated	Aggregated
Q18	UA_BTC_CUS	Treasury v Cash	Aggregated
Q19	UA_CUS10_30	Spread of Yield	Yield Spreads
Q20	NC_EP_ENQ	SP 500 v NDAQ 100 Minis	Net Change Spreads
Q21	UA_Crude_Butterfly	synthetic spread	Spreads
Q22	UA_Crude_Butterfly_2	native spread	Spreads

Permissions...
Creator: michelle

New...
Copy...
Delete

Create a QFormula

Choose display format

List of QFormulas

Configure QFormula Display Format...

Formula for QFormula: UA_EP_ENQ

Hide Formula when 'Deny Copy' is set in Permissions

Tick size preview Value preview
0.25 15425

Formula Editor

SPREAD(0.5*EP-0.2*ENQ)

Toolbox Setup... Time... Font... XData... Trading Execution Patterns

Close Apply

Toolbox

Calculation parameters

Tick size and best ask

Trading parameters

Creating Spread QFormulas

To create a spread formula:

1. Click the **Formula** button to open the **Define User Formulas** window.
2. Click the **QFormulas** tab.
3. Click the **New** button.
4. Type a name for the QFormula.
5. Click **OK**. The new QFormula is displayed in the list, and the next QNumber in the series is automatically assigned to it. Click the arrow to change the QNumber, or type a new number.
6. Enter your spread strategy in the Formula Editor. As soon as you have typed **SPREAD(** the system displays the spread formula and an example to assist you. Replace the **@** in **SPREAD(@)** with your strategy.

Alternatively, you can enter the common notation (e.g. CLE-ET), and then apply the [Spread function](#).

7. If you prefer to select calculation settings using a parameters window instead of typing them into the formula editor, click the **Setup** button. This button is active when the spread formula is selected.

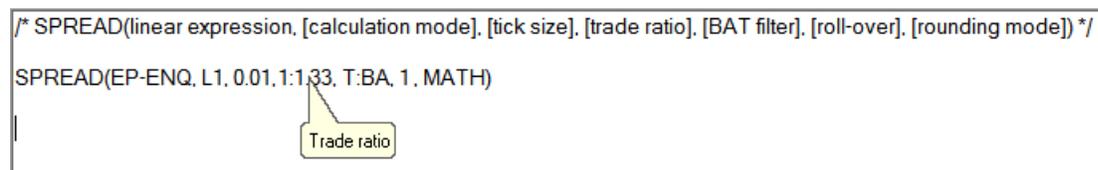
The [Setup Synthetic Spread Calculation Parameters window](#) opens. Make your selections, and then close the window.

This is also the way to apply net change and yield to the spread formula.

8. Click the **Trading Execution Patterns** button to set trading parameters. Choose which legs to work, the order type, volume ratio, stacked orders parameters, and incomplete order behavior.
9. Close the **Define User Formulas** window. Now, you're able to enter the QFormula number directly on the DOMTrader and Order Ticket.

It will be displayed as a number, name, or formula depending on your display format setting.

In the Formula Editor, when you hover your mouse over a part of the strategy, a tooltip is displayed. That tooltip identifies the element of the formula you're pointing to. For example, in this image, the mouse is pointing to the trade ratio.



Setting Synthetic Spread Calculation Parameters (Setup Button)

Click the **Setup** button to open the calculation parameters window. If the **Setup** button is not active, make sure the spread formula is selected in the Formula Editor.

	Info	Calc Mode	Rollover	Tick Size	Trade Strategy	Rounding	BAT filter	NC	Yield
Spread	>>>	L1	ON	0.01	>>>	MATH	By legs		
Leg							Trade	No	No
Leg							Bid/Ask	No	No

Buttons: OK, Cancel, Print, Reset

Changes entered here are reflected in the spread formula in the editor. For example, **SPREAD(CLEH2-CLEJ2,L1)** becomes **SPREAD(CLEH2-CLEJ2,CUR)** if you change the calculation mode to currency.

By selecting **Yes** for **Yield**, **SPREAD(1.6*TYA-USA, , , 5:3)** becomes **SPREAD(1.6*YIELD(TYA)-YIELD(USA), , , 5:3)**.

Field definitions

Field	Description
Calc Mode	<p>Identifies how you would like the spread calculated, by legs or currency.</p> <p>Auto = Displays difference in price between symbols.</p> <p>L1, L2, L3, etc. = Displays price based on tick value of leg selected.</p> <p>CUR = Displays the price based on the full currency values of the legs.</p> <p>Consider E-Mini S&P versus E-Mini NASDAQ 100 using a one contract leg-to-leg ratio. The dollar value of the E-Mini S&P is the price multiplied by \$50. If the price of the futures contract is 1097.25, then the value of the contract is \$54,862.50 (1097.25 * \$50). The dollar value of the E-Mini NASDAQ 100 is the price multiplied by \$20. If the price is of the futures contract is 1798.00, then the value of the contract is \$18,902.50 (1798.00 * \$20). If you calculate EP-ENQ with CUR selected, the price displayed is \$18,902.50 (\$54,862.50 - \$18,902.50).</p> <p>In the case of a spread where two legs trade in different currencies, adjust the expression to the appropriate currency using a conversion ratio, such as today's exchange rate, as currency is calculated as a raw number and not as a monetary value in a base currency. For example, consider the DAX Index that trades in Euros versus the E-Mini S&P that trades in dollars. To adjust for Euro: SPREAD(DD-EP/1.5,CUR). For USD: SPREAD(1.5*DD-EP,CUR).</p>

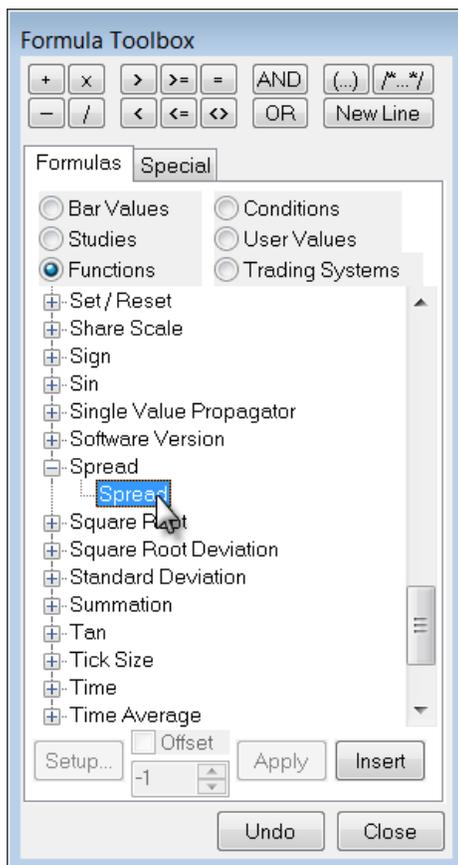
Field	Description
	<p>Price for spreads that include cash instruments inherit their formatting from the leg that is used for tick size calculation. For example, SPREAD(BUS02-TUA) is formatted in the same way as BUS02. If the calculation mode is changed to L2, then spread price is formatted in the same way as TUA. If you define the tick size, then the price is formatted as a rounded decimal. Applies to Order Ticket and DOMTrader only.</p> <p>Default = Auto.</p>
Rollover	<p>If turned on, when one leg expires, all legs roll over to the same month. Allowed values:</p> <p>OFF = Same month rollover is turned off.</p> <p>ON = Same month rollover is turned on.</p> <p>Default = OFF.</p>
Tick Size	<p>Use Auto or enter a tick size value.</p> <p>Auto = Uses L1 tick size for spread tick size.</p> <p>5 = Uses 5 as the tick increment.</p> <p>10 = Uses 10 as the tick increment.</p> <p>Default = Auto.</p>
Trade Strategy	<p>Opens the trading parameters window.</p>
BAT filter	<p>You can have the system select bid/ask or trades or you can make the selections yourself for each leg.</p> <p>Spread</p> <p>Auto = Tells the system to use bid/ask data if available, otherwise trade data. Default.</p> <p>By Legs = Indicates that you will make the data selection for each leg.</p> <p>Leg</p> <p>Bid/Ask = If leg side is buy, leg ask price is used for spread ask price calculation and leg bid price is used for spread bid price calculation. If leg side is sell, leg ask price is used for spread bid price calculation and leg bid price is used for spread ask price calculation. Default.</p> <p>Bid/Bid = Leg ask price is used for spread ask price calculation and leg bid price is used for spread bid price calculation.</p> <p>Trade = Trades of the given leg are used for both synthetic spread ask and bid prices calculation.</p>
NC	<p>Select Yes to quote by net change instead of price.</p>
Yield	<p>Select Yes to quote by yield instead of price.</p>

Using the Spread Function (Toolbox Button)

This function can be used as a starting point to create a spread formula (insert) or as a way to change an existing formula to a spread (apply) in the Formula Editor. See [Common and Extended Notation and Net Change and Yield Spreads](#), for the definitions of parameters.

To insert this function

1. Click the **Toolbox** button
2. Navigate to the **Spread** function.



3. Click the **Insert** button.
4. Close the window. The formula looks like this in the Formula Editor:

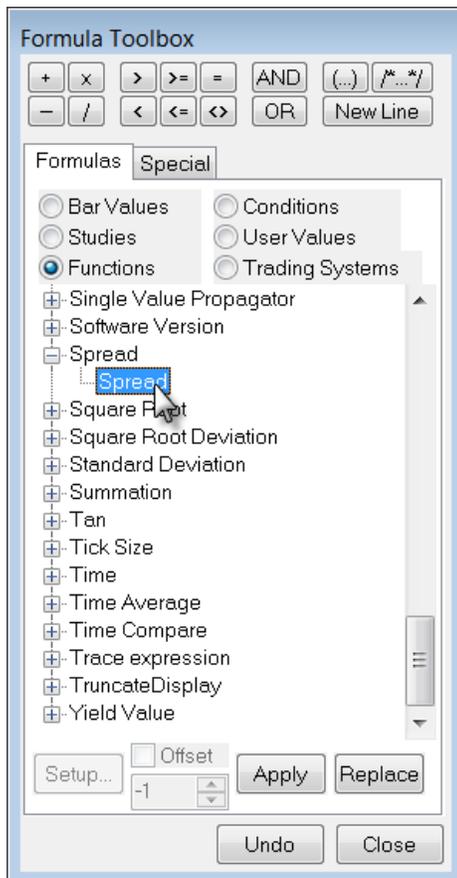
```
/* SPREAD(linear expression, [calculation mode], [tick size], [trade ratio], [BAT filter], [roll-over], [rounding mode])
Examples:
  SPREAD(42*HOE-CLE, L1, 0.01, 1:2, T:BA, 1)
  SPREAD(EP-ENQ, L1, 0.01, 1:1.33, T:BA, 1, MATH)
  SPREAD(EP/ENQ)*/
SPREAD(@)
```

The text between /* and */ is the comment area.

5. Replace the @ with the formula, like you see in the example.

To apply this function

1. Highlight the expression in the Formula Editor (HOE-CLE, for example).
2. Click the **Toolbox** button.
3. Navigate to the **Spread** function.

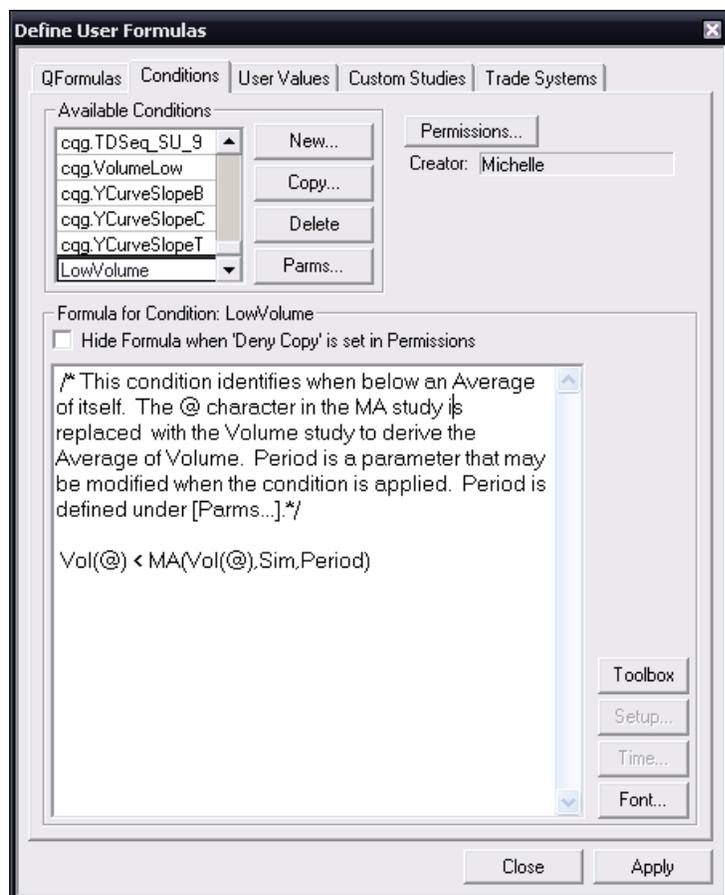


4. Click **Apply**.
5. Close the window. The formula looks like this in the Formula Editor:

```
/* SPREAD(linear expression, [calculation mode], [tick size], [trade ratio], [BAT filter], [roll-over], [rounding mode])  
Examples:  
    SPREAD(42*HOE-CLE, L1, 0.01, 1:2, T:BA, 1)  
    SPREAD(EP-ENQ, L1, 0.01, 1:1.33, T:BA, 1, MATH)  
    SPREAD(EP/ENQ)*/  
    SPREAD(HOE-CLE, L1, ., 1:1)
```

Defining Conditions and User Values

CQG conditions define a specific event or a persistent state. Examples of conditions include reversal days, a price crossing a moving average, the stochastic %K crossing %D, etc. Whereas conditions are either true or false, user values refer to a specific number.



CQG provides the user with four tools to signal the occurrence of a defined condition:

- **MarkIt** changes the color of a chart study (chart studies include Bar Charts and most Technical Studies --except Candlesticks) when the selected condition occurs.
- **Condition alerts** show a selected signal display or play a designated sound when a specified condition has occurred.
- **CQG Market Scan** searches a portfolio for a specified condition or a set of conditions.

- **Function-type studies** rely on the use of a condition as a parameter. When these studies are plotted on a chart, the values returned depend on the occurrence of the defined condition, as well as the other parameters used.

User Values yield definite numbers and appear in the Formula Toolbox. They can be used to define conditions, Q Formulas or Custom Studies. Additionally, User Values appear as one of the choices in any study where price is a parameter.

The Conditions tab and the User Values tab contain the same elements.

Creating Conditions and User Values

To define a new condition or user value

1. Click the **New** button on the **Conditions or User Values** tab from the **Define User Formulas** window.
2. This displays the **Create a New Condition (or User Value)** window.
3. Enter a condition (user value) name in the **Create a New...** window. User values cannot be named the same as a bar value, for example, **Open**, **Close**, and so forth.
4. Click **OK** to open the **Define User Formulas** window.
5. Click the **Toolbox** button to define the new condition (user value).
6. Select the elements from the **Formula Toolbox** to insert into the new condition (user value).

To change the name of a condition

1. Click the **Conditions (User Value)** tab in the **Define User Formulas** window.
2. Double click the **Condition Name** to edit the name.

To copy a condition or user value

You can modify an existing condition or user value to use it as the basis for a new user value or formula.

1. Click a **Condition** or **User Value** from the **Available....** section on the relevant tab in the **Define User Formulas** window.
2. Click the **Copy** button.
This displays the **Copy a User Value** window.
3. Enter a different name for the **Condition** or **User Value**.
4. Click **OK** to close the **Copy a ...** window.

The newly named formula appears in the **Formula for...** section and can be modified either directly or by selecting and inserting items from the **Formula** Toolbox.

To delete a condition or user value

In the **Define User Values** window, select the **Conditions** tab or the **User Values** tab.

1. Click the **Delete** button. This displays the **Confirm Deletion of Component** window.
2. Click the **Delete Component** button. The Component is removed from the **Available Conditions** or **Available User Values** list.

Defining Custom Studies

The custom study feature allows you to define and display customized studies. Once a custom study has been defined, it can be displayed like any other CQG study.

Creating Custom Studies

Define Custom Studies using the **Define User Formulas** window. Defining a custom study involves entering the following:

- A Study Name
- A Study Name Abbreviation (if desired)
- Study Curve Names (instead of the c1 ,c2, c3, and so forth, default names)
- Study Curve Formulas

To enter a custom study name and abbreviation

1. Click the **New** button in the **Study Names** group on the **Custom Studies** tab in the **Define User Formulas** window.
2. Enter a study name. The system automatically enters an abbreviation, but you can Enter a study abbreviation, if you want to.
3. Click in the **New Study Abbrev and Curve Name** box and enter no more than 7 characters. The custom study abbreviation must start with a letter rather than a number or symbol. CQG uses the abbreviation name when you use one custom study as the basis for another custom study.
4. Click the **OK** button.

To establish curves for a custom study

Establishing curves for a custom study involves assigning names and defining the curve characteristics.

If the selected custom study does not already have curves defined, the Curves For: [study name] information is not displayed.

1. On the **Custom Studies** tab of the **Define User Formulas** window, left click the **Show Curves** button.
The **Curves for: [Study Name]** information appears under the **Permissions** button.
2. Click the **New** button under **Curves for: [Study Name]**.
3. Enter a name for the new curve.
4. Click the **OK** button to close the **Create a Study Curve** window.

To enter a curve formula

The **Curve Formula Editor** displays the formula or expression associated with the study curve selected in the Curves for section. It is empty when a new curve name is initially selected.

The editor consists of the editor area, where the selected study curve's formula is shown, and several **Editor** buttons. The expressions can be modified directly in the Editor, or they can be modified using the **Editor** buttons.

1. If the **Curves for: [study name]** information is not already displayed, left click the **Show Curves** button.
2. Click the study name in the **Study Names** list.
3. Click the **New** button in the **Curves for** section.
4. Enter a name for the new study curve.
5. Enter the desired **Curve Formula** directly in the **Formula for Curve** section.

You can also click the **Toolbox** button to display the **Formula Toolbox** window and use the Toolbox to define the curve formula.

Custom Studies use scales that are unique to that study. However, an operator can be added to a Custom Study curve formula to force the Custom Study to share the scale of the underlying chart.

Currently, the **ShareScale** operator is added in the **Custom Study curve formula**. The **ShareScale** operator has two parameters separated by a comma. The first parameter is the Custom Study curve formula itself. The second parameter identifies whether the Custom Study curve shares a scale.

Example: `ShareScale(custom study formula, @)` forces the curve to share the scale with the bar scale, identified by @.

Study Outputs cannot be changed within the **Curve Editor**. However, you can modify them by selecting the **Study Output** and then by selecting the **Setup** button to display the parameters.

When the cursor is placed on a **Study Output** or one of its parameters, the entire **Study Output** expression is selected. All or none of the **Study Output** expression must be removed at one time. Individual parts of a Study Output expression cannot be removed.

The clipboard can be used to cut and paste text into the **Curve Editor**.

To add a custom study to a chart with the Study button

1. Click the **Study** button in the **Chart** toolbar to display a list of available studies including Custom studies.
2. Click the desired **Custom Study Names** to select those studies. Custom study names appear with the symbol “^” following the abbreviated study name.
3. Click the **Add** button to add the selected studies to the **Chart** window.

To place a custom study button on the Chart toolbar

Individual **Custom Study** buttons can be placed on the **Chart** toolbar to access frequently used studies. After a study button is placed in the **Chart** toolbar, the button can be used to add/remove the associated study to/from the active chart window.

1. Click the **Study** button in the Chart toolbar to display a list of available studies.
2. This displays the Tabbed version of the **Add Study** window.
3. Click the **Custom Studies** tab.
4. Click the Custom Study Abbreviation to the left of the custom study name to add the corresponding **Custom Study** button to the Chart toolbar. Custom study names appear with an ^ following the abbreviated study name.
5. Click the study name itself and the **Add** button to display the study on the active chart without adding a button to the toolbar.
6. Click the study abbreviation name and the **Add** button to add the custom study button to the toolbar and the study curves to the current chart.

Once a custom study button has been placed on the Chart toolbar, it can display the associated custom study.

1. Click the button with the desired study name to display the associated custom study.
2. Right-click the button of the desired Custom Study to remove the associated study if it is currently displayed.

To change the parameters of a Custom Study

1. Move the mouse pointer to a custom study line. When the mouse text appears:
2. Right-click the custom study line to display a menu.
3. Click **Modify ...** to display the **Setup Study Parameters** window for the custom study.
4. Click the parameter setting to change.
5. Enter a new parameter value, or
6. Select the **Drop Down List** button, where available.
7. Click the **OK** button to apply the changes to the custom study and close the Setup Study Parameters window.

While display parameters for the custom study can be modified in the Setup Study Parameters window, study curve formulas must be modified in the Define Study window.

To remove a custom study

1. Move the mouse pointer so that it points to a custom study line and the mouse text appears.
2. Right-click to display a menu.
3. Click **Remove Custom Study Name**

You can also right-click the associated custom study button to remove the study.

To use a MATLAB[®] function in a custom study

CQG, in conjunction with The MathWorks™, has integrated CQG IC and MATLAB by developing a communication channel between the applications using CQG's API. MATLAB functions are used within CQG custom studies. You can incorporate an existing MATLAB function or create your own.

You call the MATLAB function through CQG IC, MATLAB serves as the calculation engine, MATLAB returns the results to CQG IC, where you can view them and integrate them into your conditions, trade systems, charts, etc.

In CQG IC, add the MATLAB function to your custom study, using this syntax:

MatLab(@, <array>, <MATLAB function>, <data sources>, <numeric input>)

For example: **MatLab(@, 100, my_matlab_function, Close(@), Open(@), High(DD), 1.5, 3.2)**

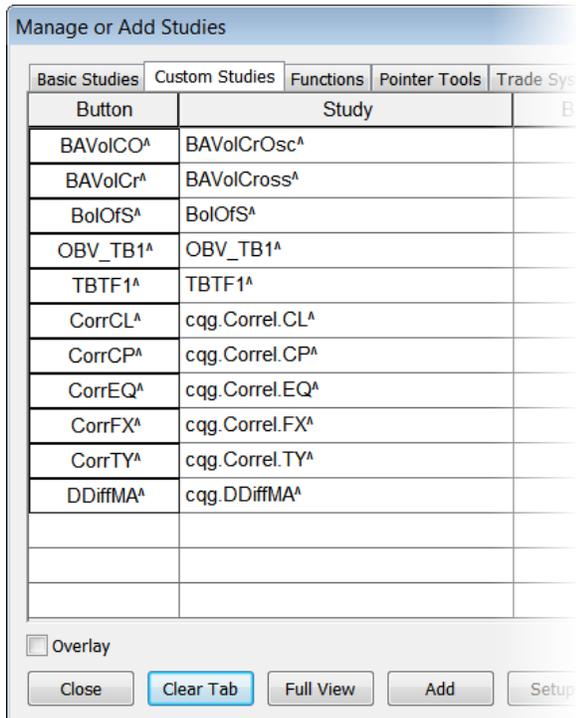
That is, for my_matlab_function, return an array of 100 closes of the source chart, an array of 100 opens of the source chart, and an array of 100 highs of DD using numeric inputs 1.5 and 3.2.

Parameter	Description
MatLab(@	Constant way that all MATLAB-associated formulas must begin.
Array	Size of the data array. Must be at least 1. For example, if you want 100 bars of the moving average returned, then this value would be 100.
MATLAB function	Name of MATLAB function to call.
Data Sources	Data sources to collect data from. All inputs after function and before first numeric input are treated as inputs to populate data array.
Numeric Input	All numeric inputs after data sources are considered parameters to be passed to MATLAB function.
)	Constant closing parenthesis.

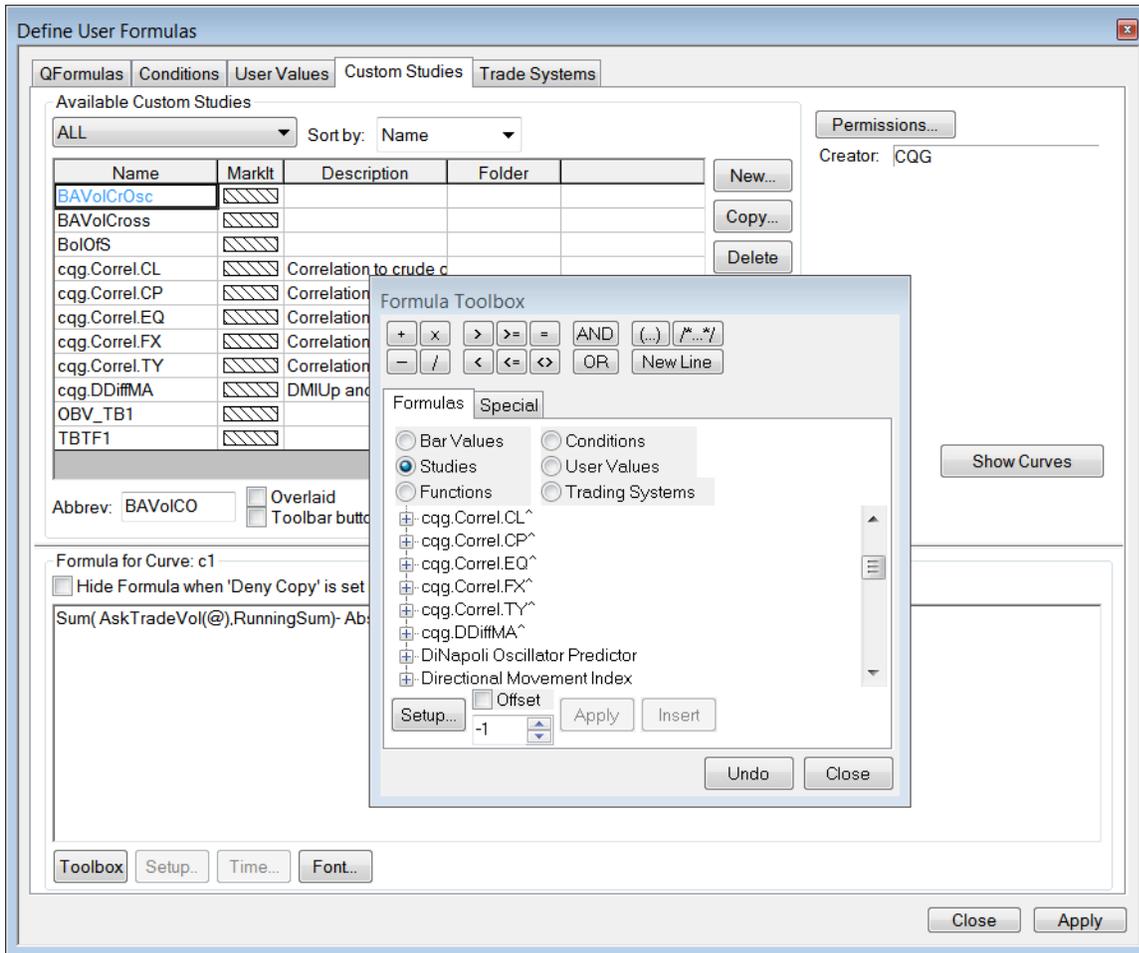
Custom Studies

CQG provides several custom studies that you can use as a basis for your own custom studies.

Find preset custom studies on the **Add Studies** window (click the **Studies** button on the chart toolbar):



Find them on the **Define User Formulas** window and in the Toolbox:



BAVolCross (BAVolCr)

The Bid Ask Volume Cross custom study is available on the **Add Studies** window, on the **Custom Studies** window (Define User Formulas), and in the Toolbox.

The BAVolCross study displays two lines: the rolling 5-bar sum of traded volume at the ask price (buying) and rolling 5-bar sum of traded volume into the bid (selling).

Formula of curves:

AskVolume curve: $\text{Buy} := \text{Sum}(\text{AskTradeVol}(@), \text{RunningSum})$

BidVolume curve: $\text{Abs}(\text{Sum}(\text{BidTradeVol}(@), \text{RunningSum}))$



Setup parameters:

- [Display](#)
- [OB/OS](#)
- **Running Sum:** The used for the calculations of sum.

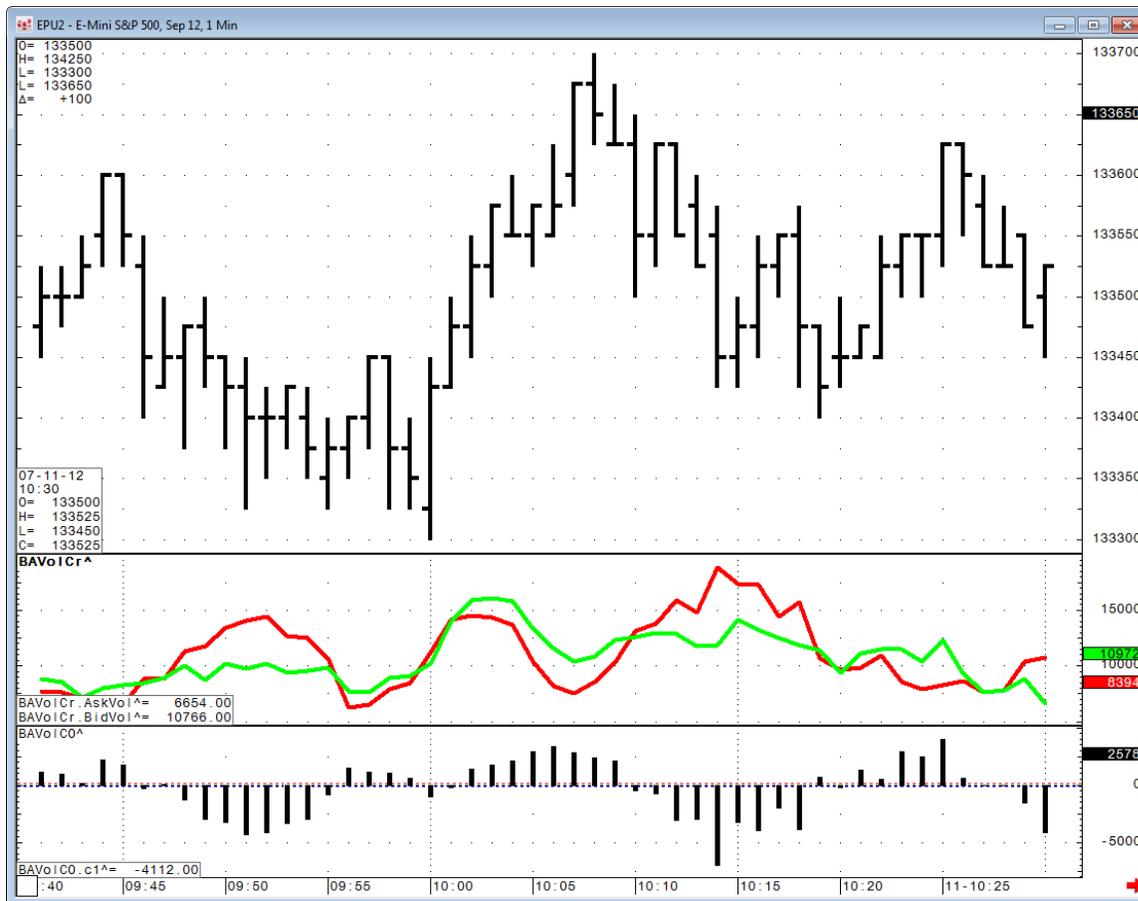
BAVolCrOsc (BAVolCO)

The Bid Ask Volume Cross Oscillator custom study is available on the **Add Studies** window, on the **Custom Studies** window (Define User Formulas), and in the Toolbox.

The BAVolCrOsc study displays the difference between two lines of the Bid Ask Volume Cross.

Formula of curves:

$\text{Sum}(\text{AskTradeVol}(@), \text{RunningSum}) - \text{Abs}(\text{Sum}(\text{BidTradeVol}(@), \text{RunningSum}))$



Setup parameters:

- [Display](#)
- [OB/OS](#)
- **Running Sum:** The used for the calculations of sum.

BoIOFS (BoIOFS)

The Fixed Bollinger Bands study is available on the **Add Studies** window, on the **Custom Studies** window (Define User Formulas), and in the Toolbox.

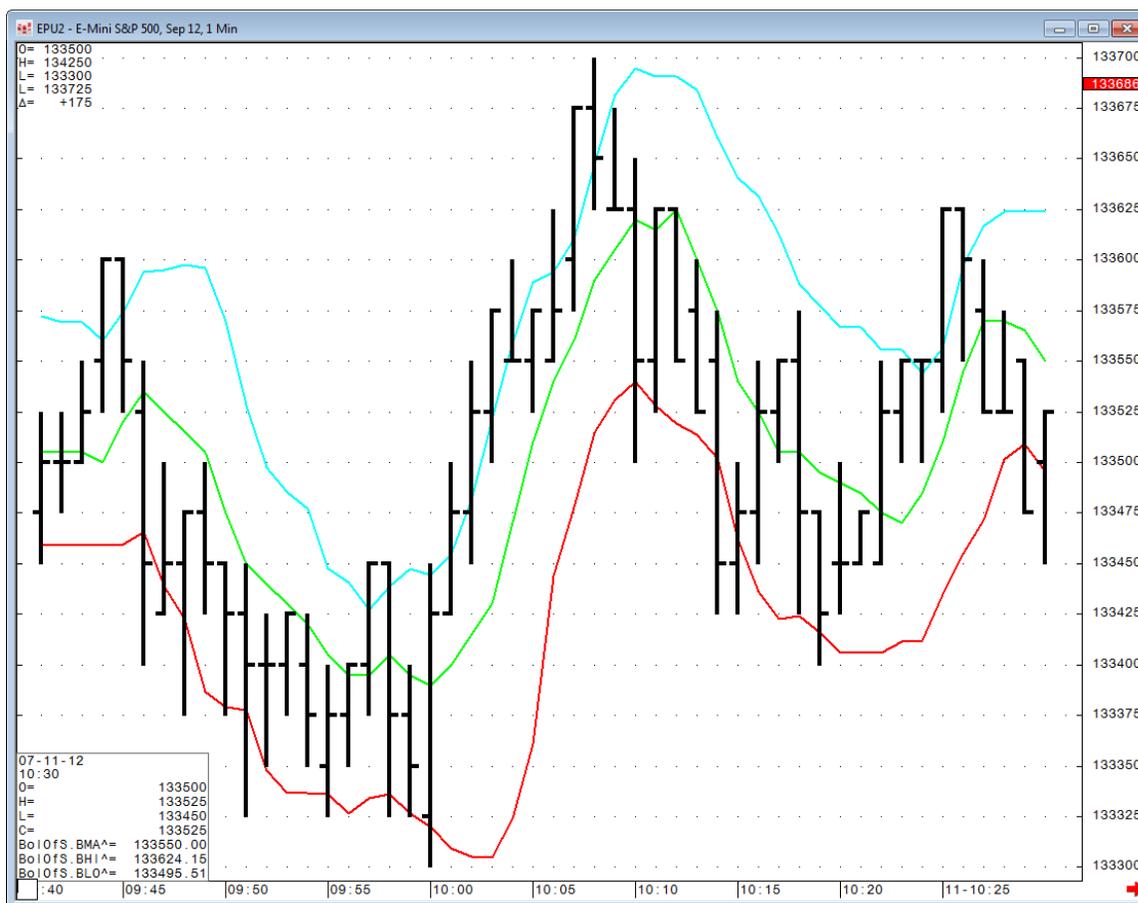
Formula of curves:

BMA curve: `BMA(@,Sim,5)[-1]`

BHI curve: `BHI(@,Sim,5,1)[-1]`

BLO curve: `BLO(@,Sim,5,1)[-1]`

In this example, the fixed Bollinger Bands plot one standard deviation away from a simple moving average of 5 bars. The standard Bollinger Bands setup uses the current live price. Consequently, Bollinger Bands are expanding and contracting around the current bar. Here we use the previous value of the Bollinger Bands. Now, you have a fixed frame of reference on the chart. This gives you precise price levels that do not fluctuate. In addition, you can display the Bollinger Bands' values on the DOMTrader® "



Setup parameters:

- [Display](#)
- [OB/OS](#)

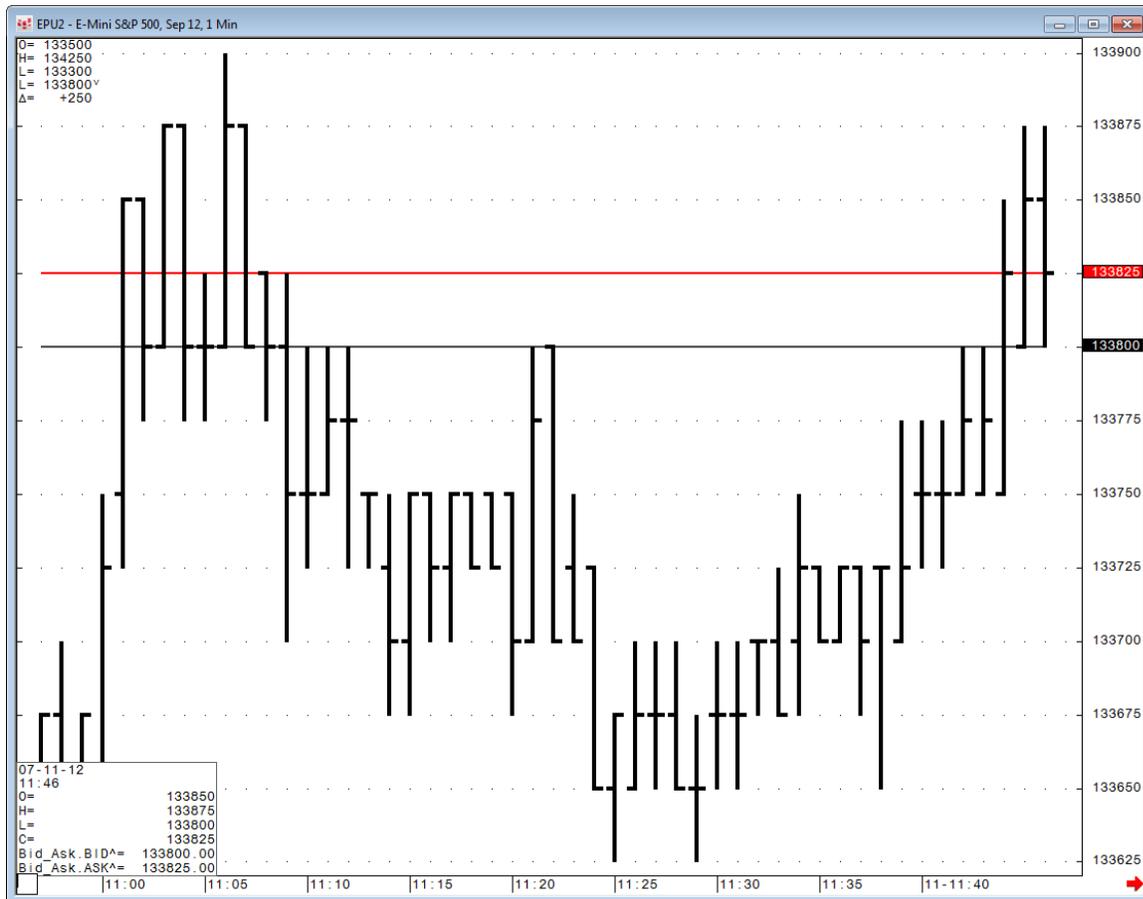
cqg.Bid_Ask (Bid_Ask)

The Bid Ask study displays two lines: price of the last ask and price of the last bid.

Formula of curves:

Bid curve: `Label(@,LastBid)`

Ask curve: `Label(@,LastAsk)`



Setup parameters:

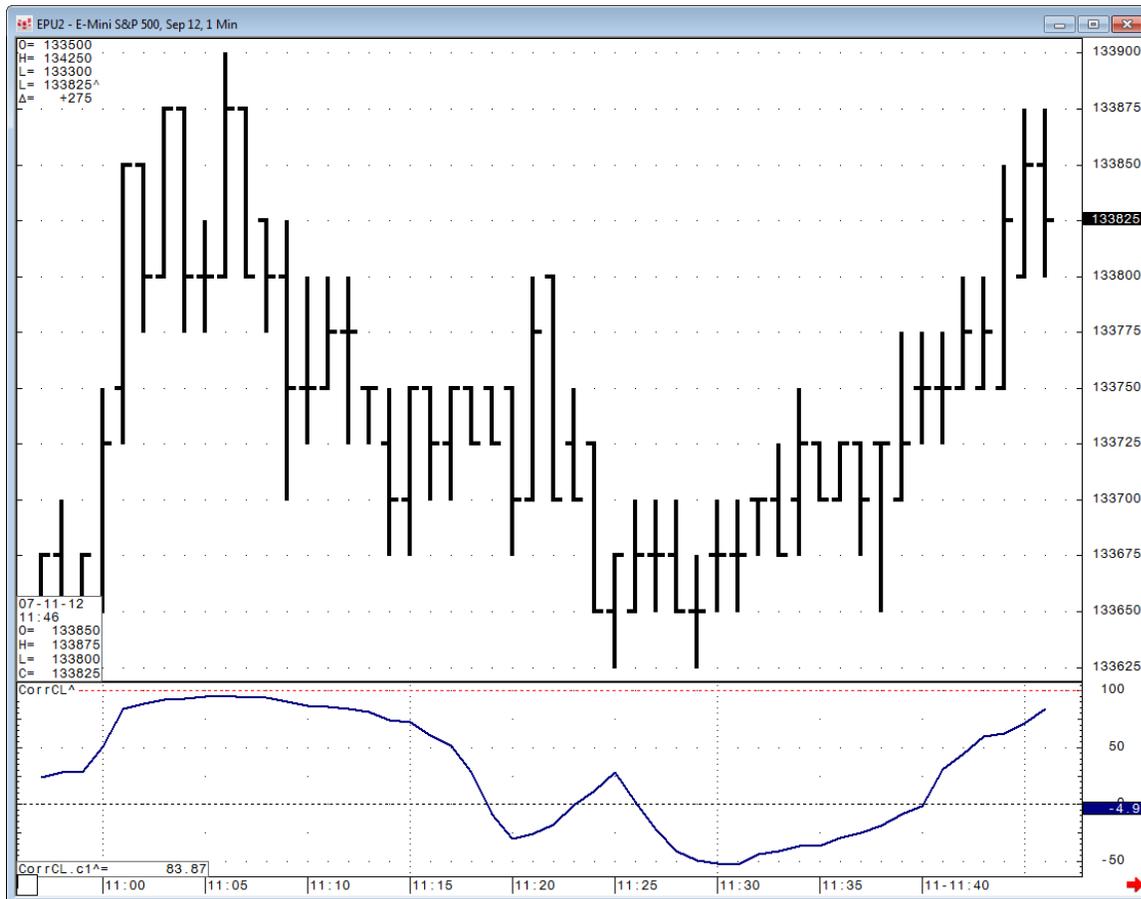
- [Display](#)
- [OB/OS](#)

cqg.CorrCL (CorrCL)

This custom study is the correlation between the active instrument and Crude Light Settlement Futures over a user specified period. It is available on the **Add Studies** window, on the **Custom Studies** window (Define User Formulas), and in the Toolbox.

Formula of curve:

Correlation(@,F.CL,Period)



Setup parameters:

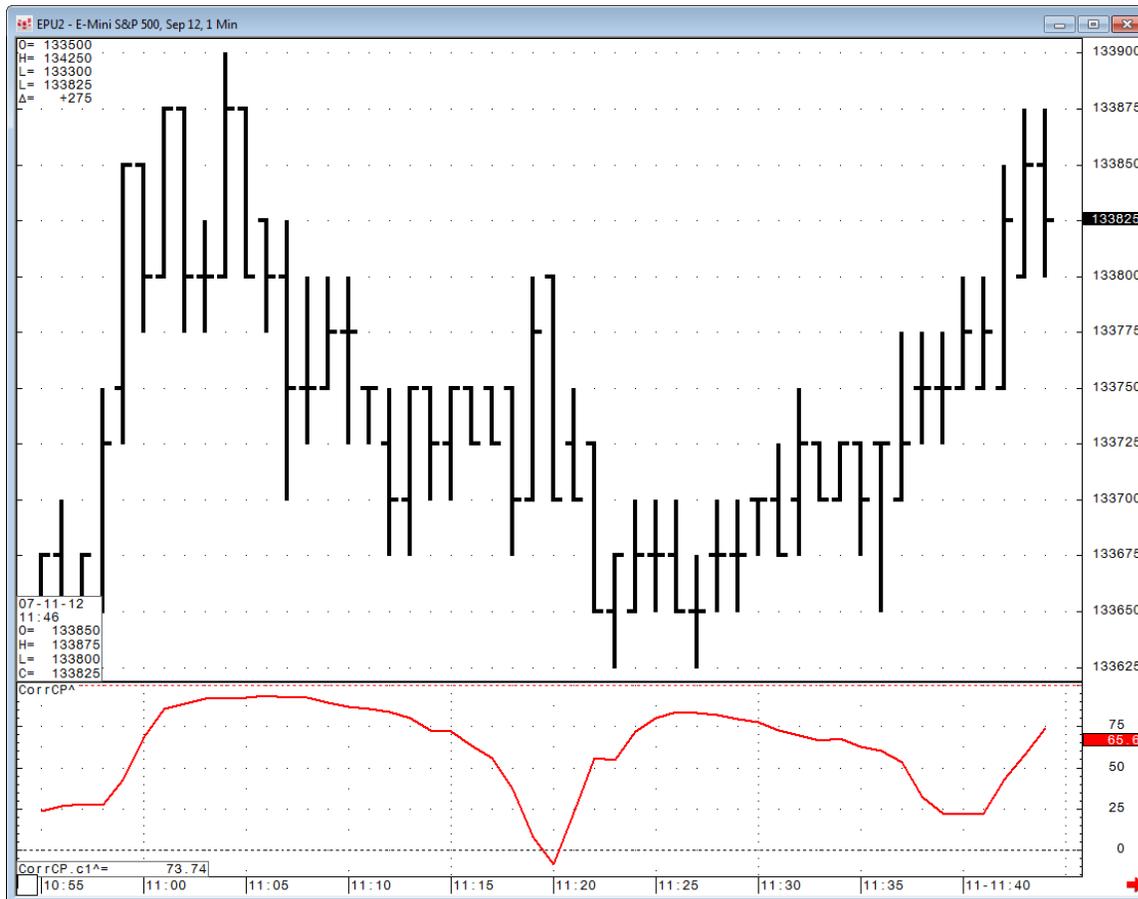
- [Display](#)
- [OB/OS](#)
- **Period:** The period used for the calculations of correlation.

cqg.CorrCP (CorrCP)

This custom study is the correlation between the active instrument and Copper Settlement Futures over a user specified period. It is available on the **Add Studies** window, on the **Custom Studies** window (Define User Formulas), and in the Toolbox.

Formula of curve:

Correlation(@,F.CP,Period)



Setup parameters:

- [Display](#)
- [OB/OS](#)
- **Period:** The period used for the calculations of correlation.

cqg.CorrEQ (CorrEQ)

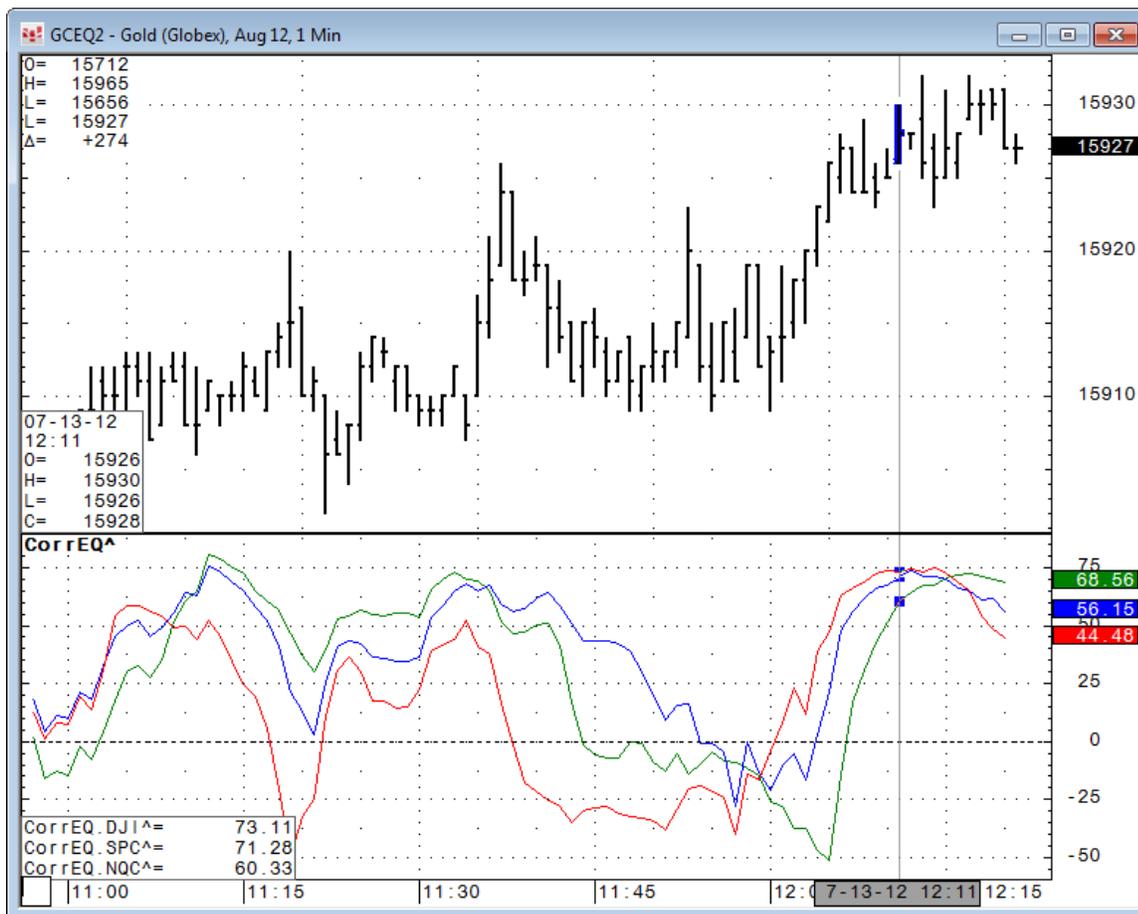
This custom study is the correlation between the active instrument and three equity indexes over a user specified period. It is available on the **Add Studies** window, on the **Custom Studies** window (Define User Formulas), and in the Toolbox.

Formula of curves:

Dow Jones Index: $\text{Correlation}(@, X.DJI, \text{Period})$

S&P 500 Index: $\text{Correlation}(@, X.SPC, \text{Period})$

NASDAQ Composite Index: $\text{Correlation}(@, X.NQC, \text{Period})$



Setup parameters:

- [Display](#)
- [OB/OS](#)
- **Period:** The period used for the calculations of correlation.

cqg.CorrFX (CorrFX)

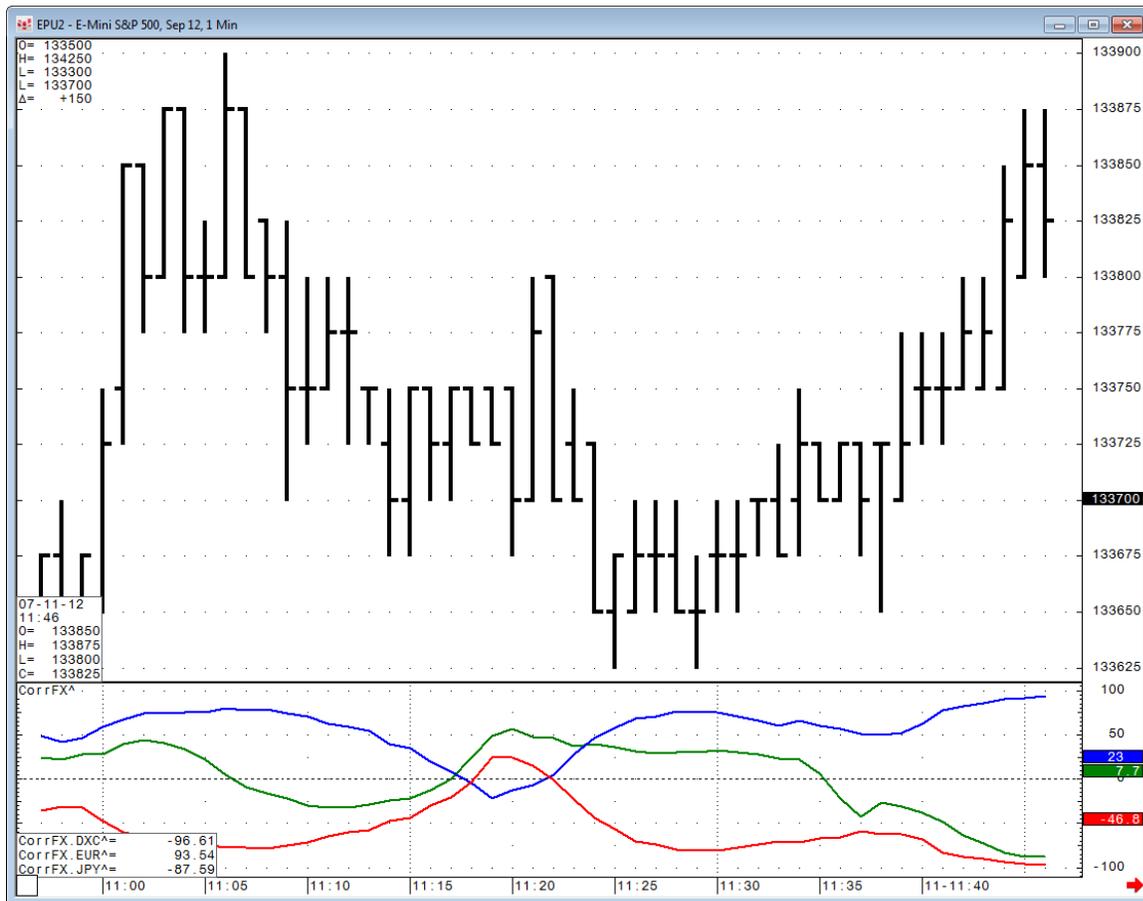
This custom study is the correlation between the active instrument and three FX indexes (DXC, EUR and JPY) over a user specified period. It is available on the **Add Studies** window, on the **Custom Studies** window (Define User Formulas), and in the Toolbox.

Formula of curves:

Dollar Index: $\text{Correlation}(@, X.DXC5, \text{PERIOD})$

DM-Euro / United States Index: $\text{Correlation}(@, X.IEURUSD, \text{PERIOD})$

Japan (Yen) Index: $\text{Correlation}(@, X.IUSDJPY, \text{PERIOD})$



Setup parameters:

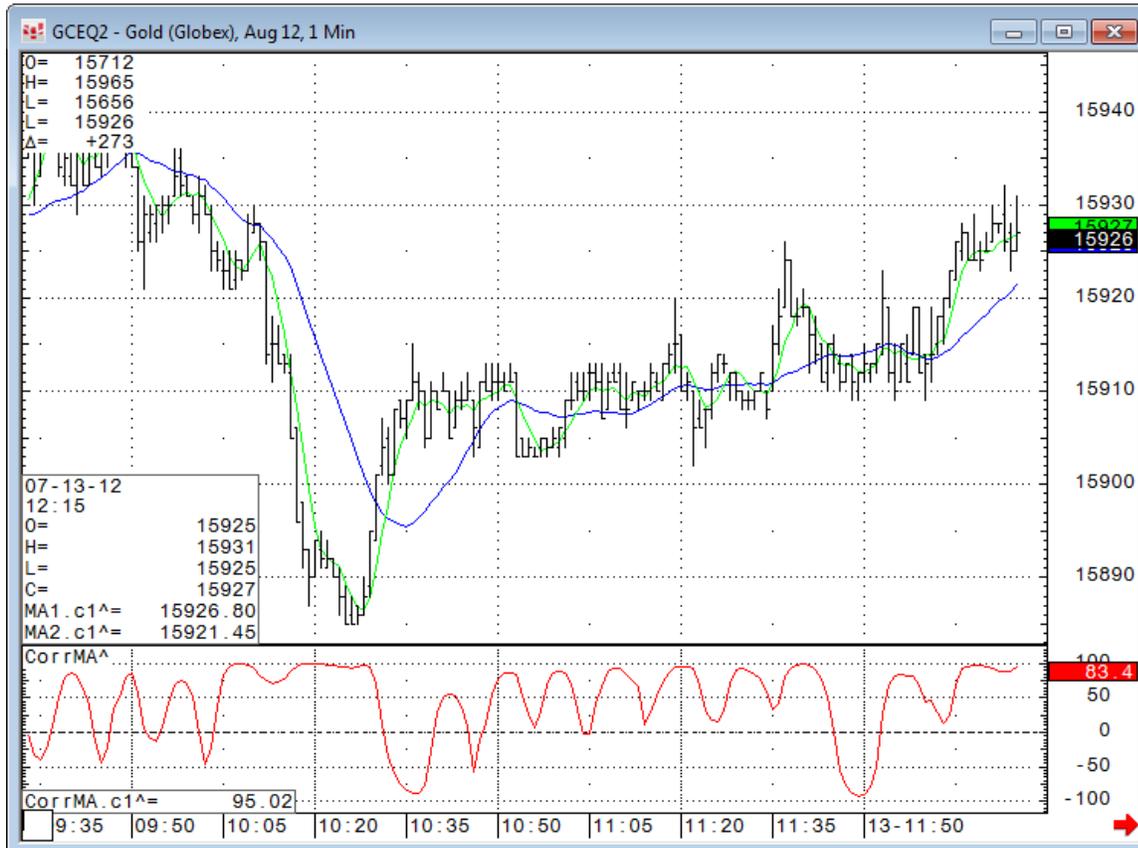
- [Display](#)
- [OB/OS](#)
- **Period:** The period used for the calculations of correlation.

cqg.CorrMA (CorrMA)

This custom study is the correlation between two moving averages over a user specified period.

Formula of curve:

Correlation(MAx1(@,Sim,MA1),MAx2(@,Sim,MA2),CorrPeriod)



Parameters used for this image:

Name	Type	Def Value	Col Header	Row Header
MA1	Float	5.000	<<Default>>	<<Default>>
MA2	Float	20.000	<<Default>>	<<Default>>
CorrPeriod	Integer	10	<<Default>>	<<Default>>

Setup parameters:

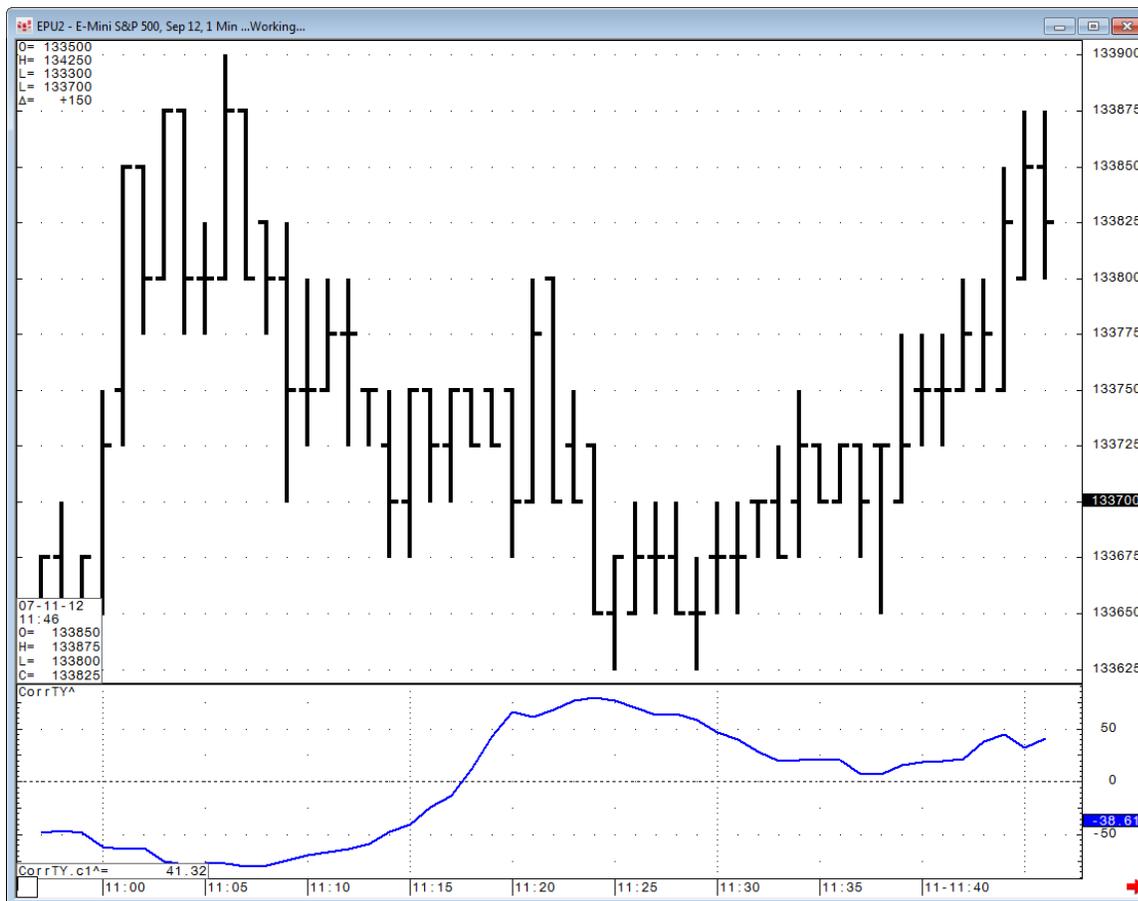
- [Display](#)
- [OB/OS](#)
- MA1: The short term moving average.
- MA2: The longer term moving average.
- CorrPeriod: The period used for the calculations of correlation.

cqg.Correl.TY (CorrTY)

This custom study is the correlation between the active instrument and 10-year Treasury Notes (Combined) Futures over a user specified period. It is available on the **Add Studies** window, on the **Custom Studies** window (Define User Formulas), and in the Toolbox.

Formula of curve:

Correlation(@,F.TYAA,Period)



Setup parameters:

- [Display](#)
- [OB/OS](#)
- **Period:** The period used for the calculations of correlation.

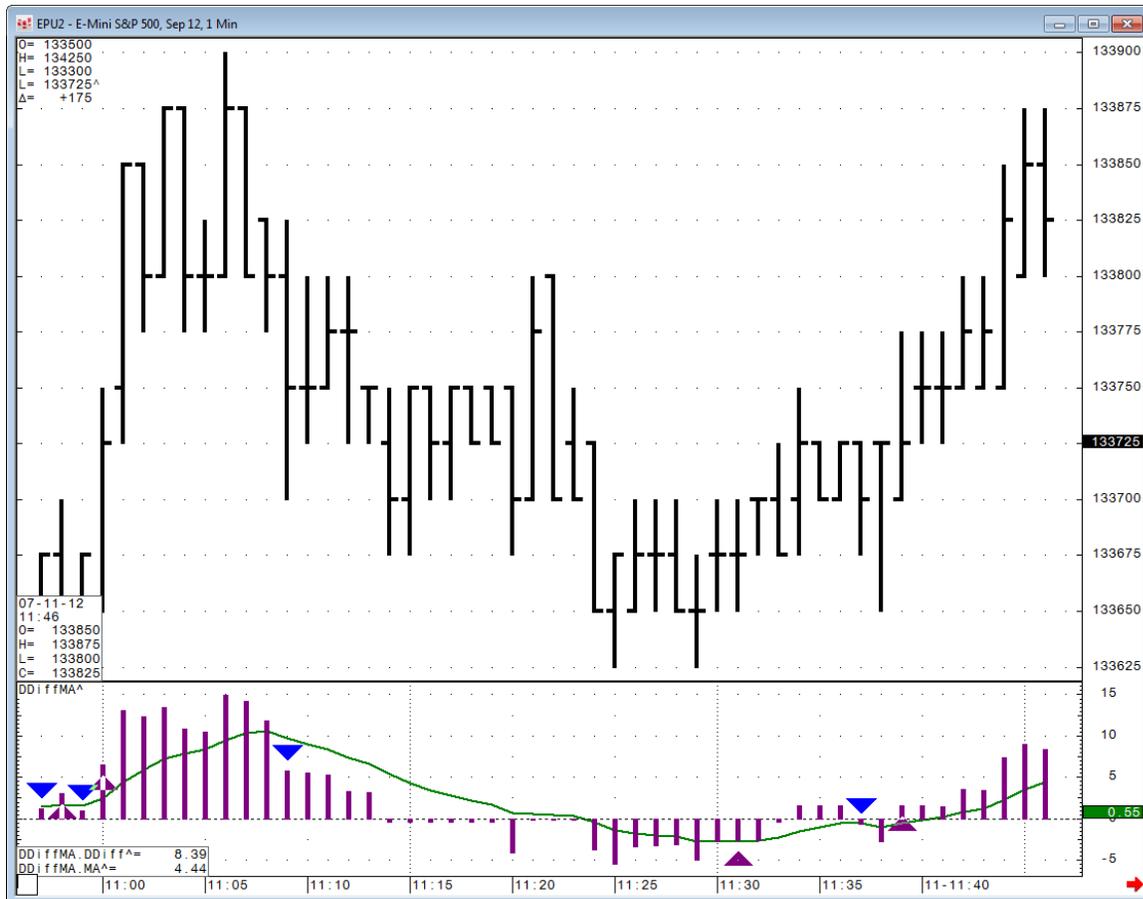
Cqg.DDiffMA (DDiffMA)

This custom study displays the difference of the DMIUp and DMIDn curves and its moving average. DMI is the Directional Movement Index. It is available on the **Add Studies** window, on the **Custom Studies** window (Define User Formulas), and in the Toolbox.

Formula of curves:

Difference of DMIUp and DMIDn: $\text{DIFF}(@, \text{DDif}, \text{Period})$

MA of difference of DMIUp and DMIDn: $\text{MA}(\text{DIFF}(@, \text{DDif}, \text{Period}), \text{Exp}, \text{MA.Period})$



Setup parameters:

- [Display](#)
- [OB/OS](#)
- **DDif Period and MA Period:** The period used for the calculations of difference of the DMIUp and DMIDn and its moving average.

cqg.DMI with ADX (DMIwADX)

This custom study displays DMIUp, DMIDn, the difference of the DMIUp and DMIDn and the Average Directional Movement Index.

This study combines the Directional Movement Indicators into one study by using multiple curves. All the curves share the user-defined period, which allows modification from the chart.

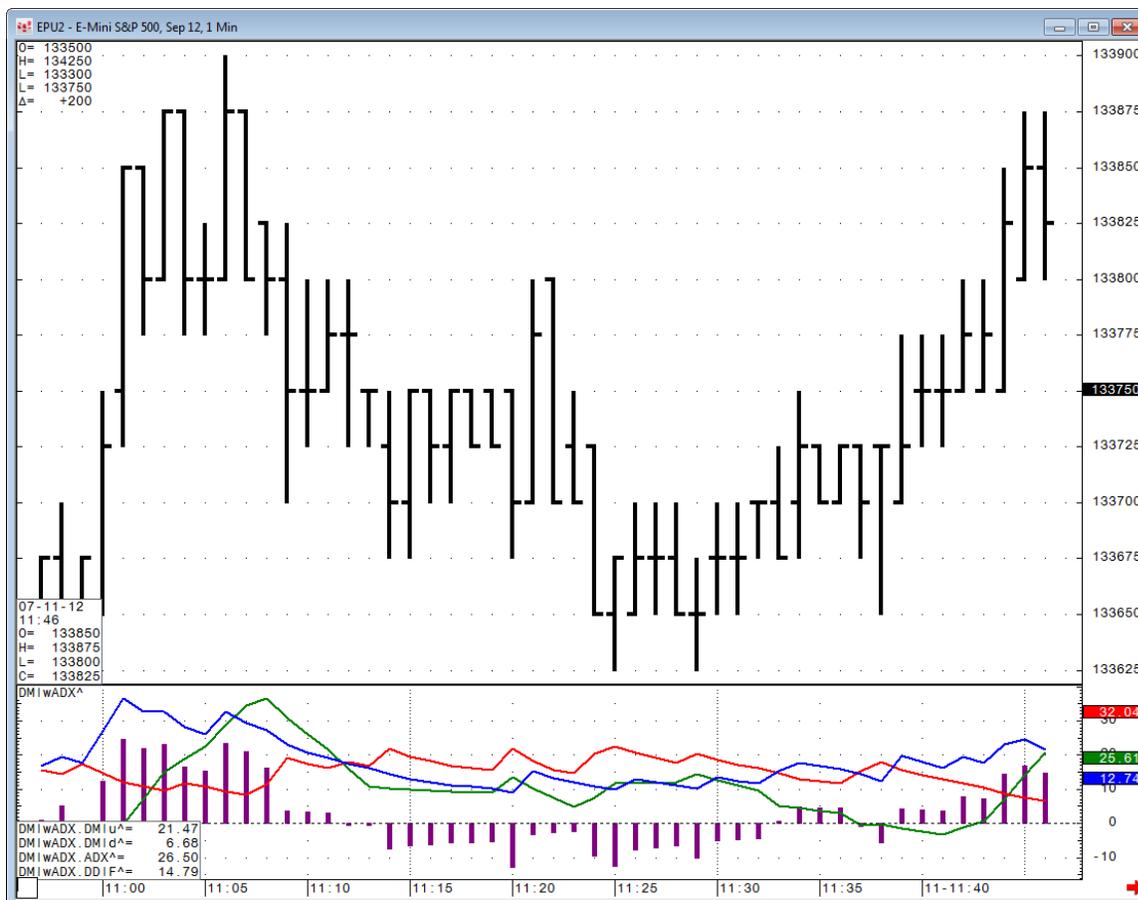
Formula of curves:

DMIu: DMIu(@,Period)

DMId: DMId(@,Period)

ADX: ADX(@,Period)

DIFF: DIFF(@,Period)



Setup parameters:

- [Display](#)
- [OB/OS](#)
- Period: The period used for the calculations of directional movement indicators.

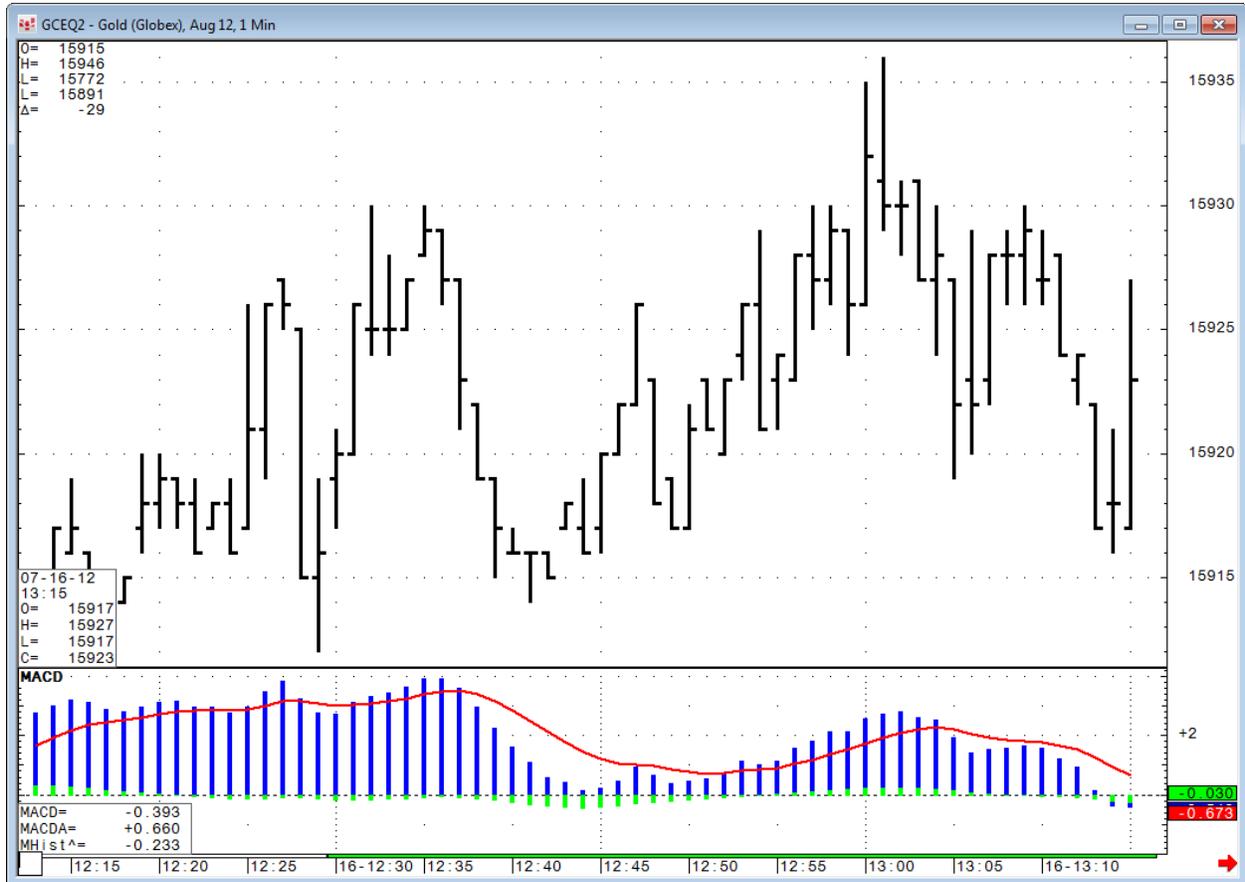
cqg.MACD Histogram (MHist)

This custom study is MACD Histogram, the difference between the MACD and the MACD signal line.

The MACD Histogram study displays three charts: MACD Histogram, MACD signal line, and MACD.

Formula of curve:

$\text{MACD}(@, 13.000, 26.000) - \text{MACDA}(@, 13.000, 26.000, 9.000)$



Setup parameters:

- [Display](#)
- [OB/OS](#)

cqg.MACD with Histogram (MACDwMH)

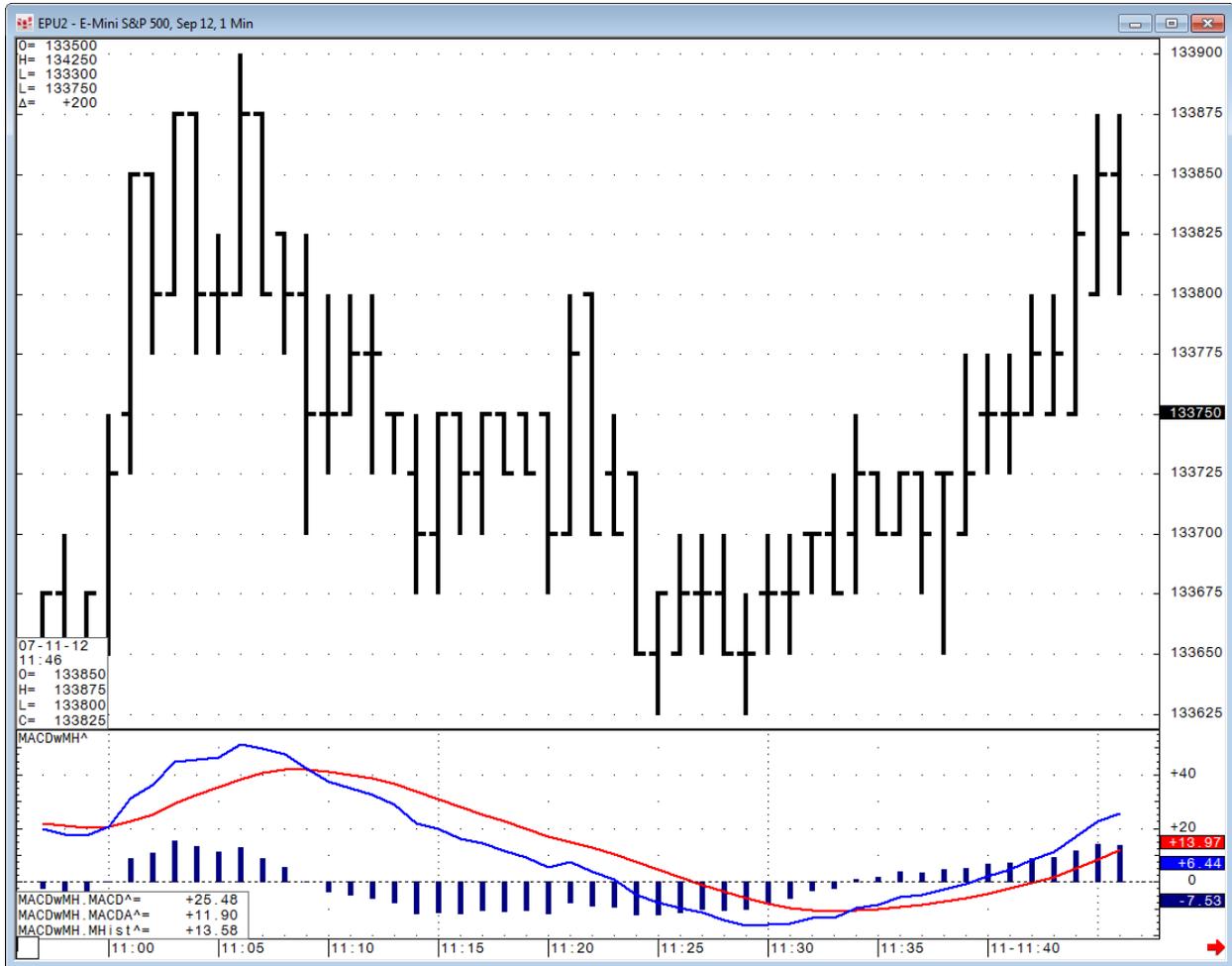
This custom study displays the MACD Histogram, MACD, and MACD signal line in a chart.

Formula of curves:

MACD: $\text{MACD}(@, \text{MA1}, \text{MA2})$

MACDA: $\text{MACDA}(@, \text{MA1}, \text{MA2}, \text{MA3})$

MHist: $\text{MACD}(@, \text{MA1}, \text{MA2}) - \text{MACDA}(@, \text{MA1}, \text{MA2}, \text{MA3})$



Setup parameters:

- [Display](#)
- [OB/OS](#)

cqg.Noon (Noon)

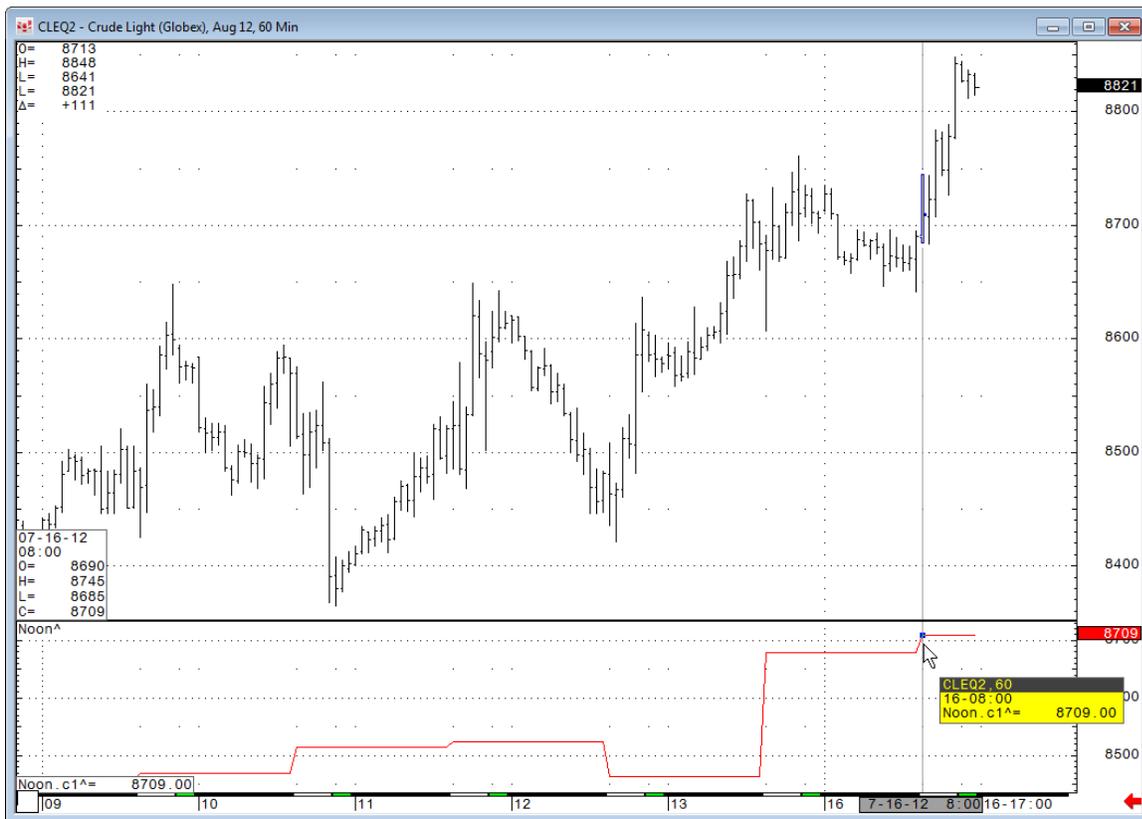
This custom study is the closing price of the active instrument at a user specified time.

HourX is used for calculating the closing price.

Formula of curve:

Close(@) WHEN Hour(@) = HourX

In this example, the study displays the movement of price in an hour in advance of 8 a.m. (the user specified time) and constant value equals to the closing price at 8 a.m. for the rest time of the day.



Setup parameters:

- [Display](#)
- [OB/OS](#)

cqg.PivotPts (PvtPts)

The pivot point is the arithmetic average of the high (H), low (L), and closing (C) prices of the active instrument, $P = (H + L + C) / 3$. This custom study uses the Pivot points for calculations of the curve. It plots 5 curves: the pivot point; 2 projected highs and 2 projected lows. Note that the Overlaid checkbox has been selected so that these curves will be plotted over the bars like a moving average. It is available on the Add Study window. The ,D after each term forces the system to use a daily bar. This method allows the user to apply daily values to an intraday chart.

Formula of curves:

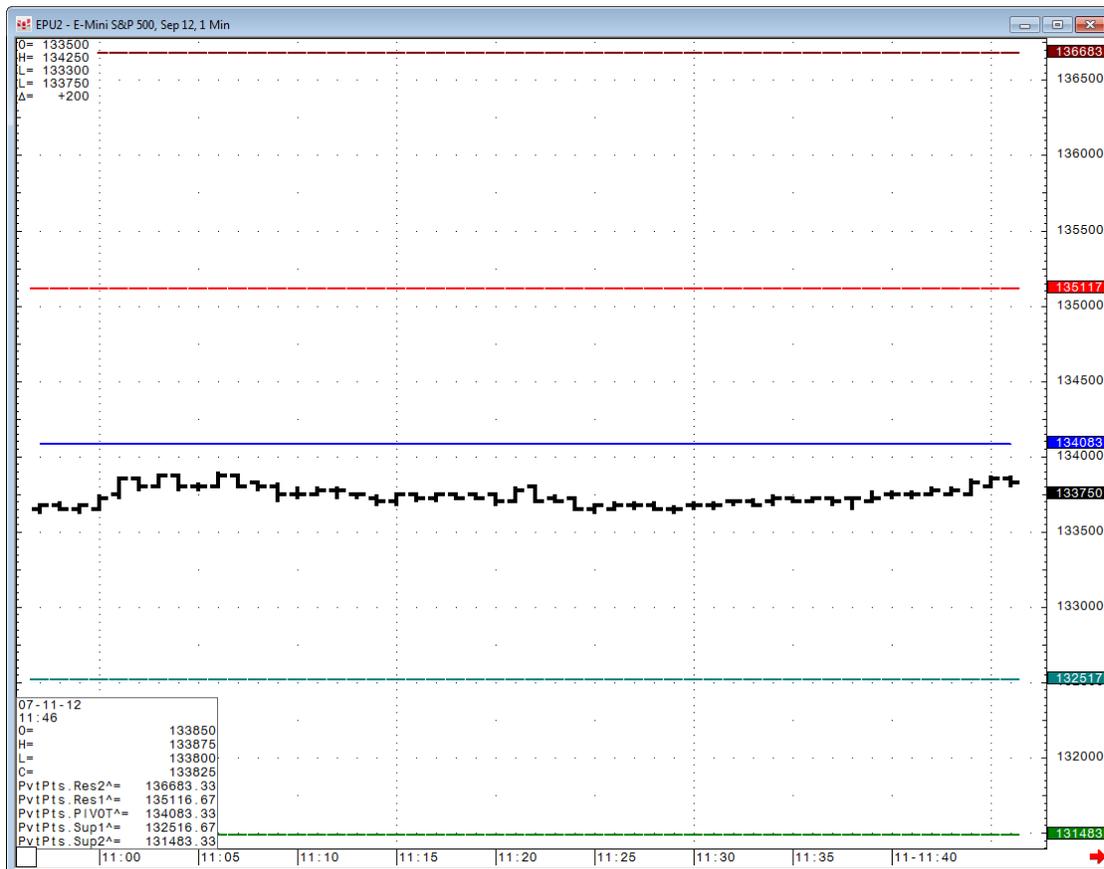
Res2: $(HLC3(@),D)[-1] + (Range(@),D)[-1]$

Res1: $(2 * (HLC3(@),D)[-1]) - (Low(@),D)[-1]$

PIVOT: $(HLC3(@),D)[-1]$

Sup1: $(2 * (HLC3(@),D)[-1]) - (High(@),D)[-1]$

Sup2: $(HLC3(@),D)[-1] - (Range(@),D)[-1]$



Setup parameters:

- [Display](#)
- [OB/OS](#)

cqg.RSI with MA (RSIma)

This custom study plots the RSI with a trailing moving average.

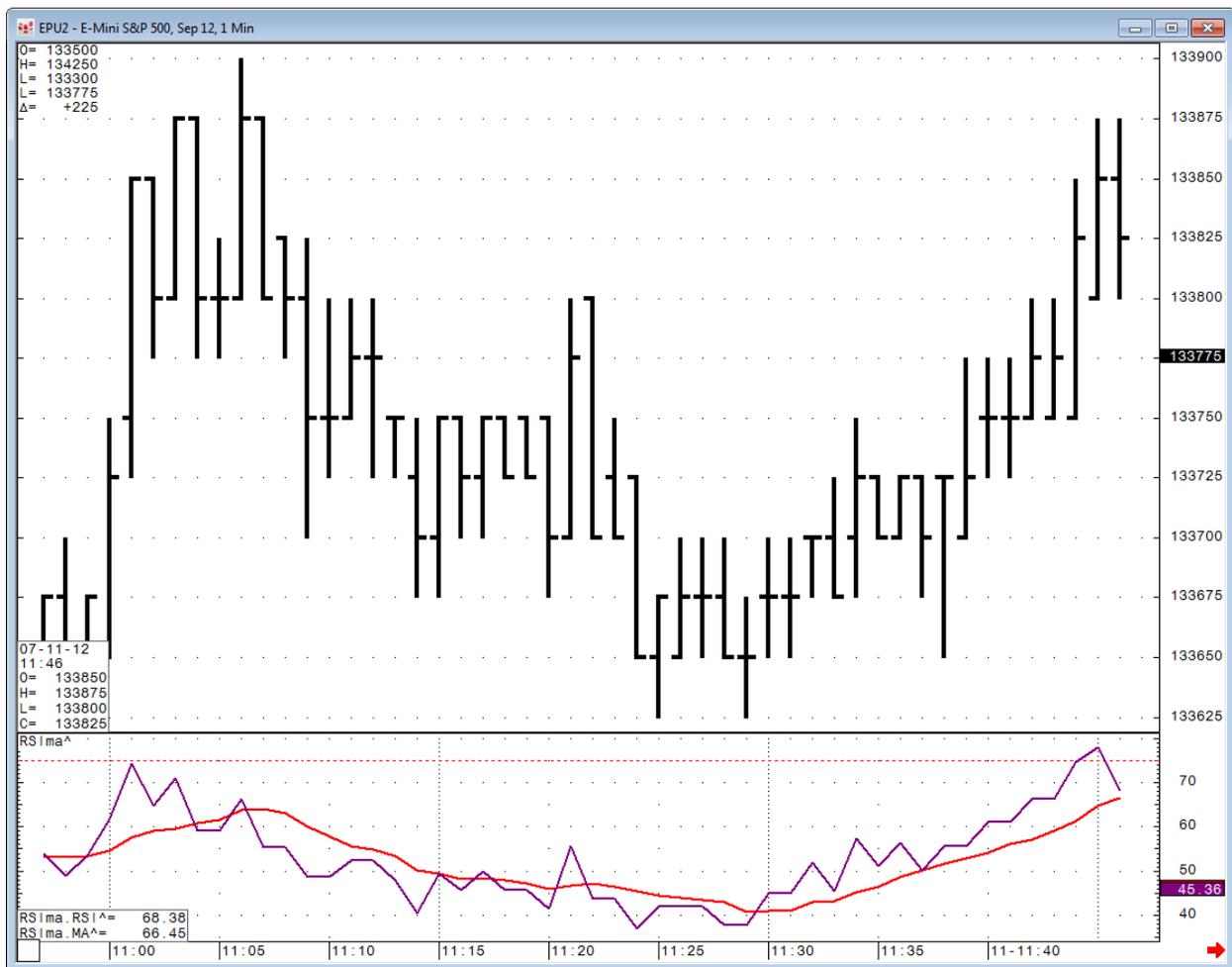
RSIPeriod is used for calculating the RSI.

MAPeriod is used for calculating the MA.

Formula of curves:

RSI: $RSI(@,RSIPeriod)$

MA: $MA(RSI(@,RSIPeriod),Sim,MAPeriod)$



Setup parameters:

- [Display](#)
- [OB/OS](#)

cqg.VolSpread (VolSprd)

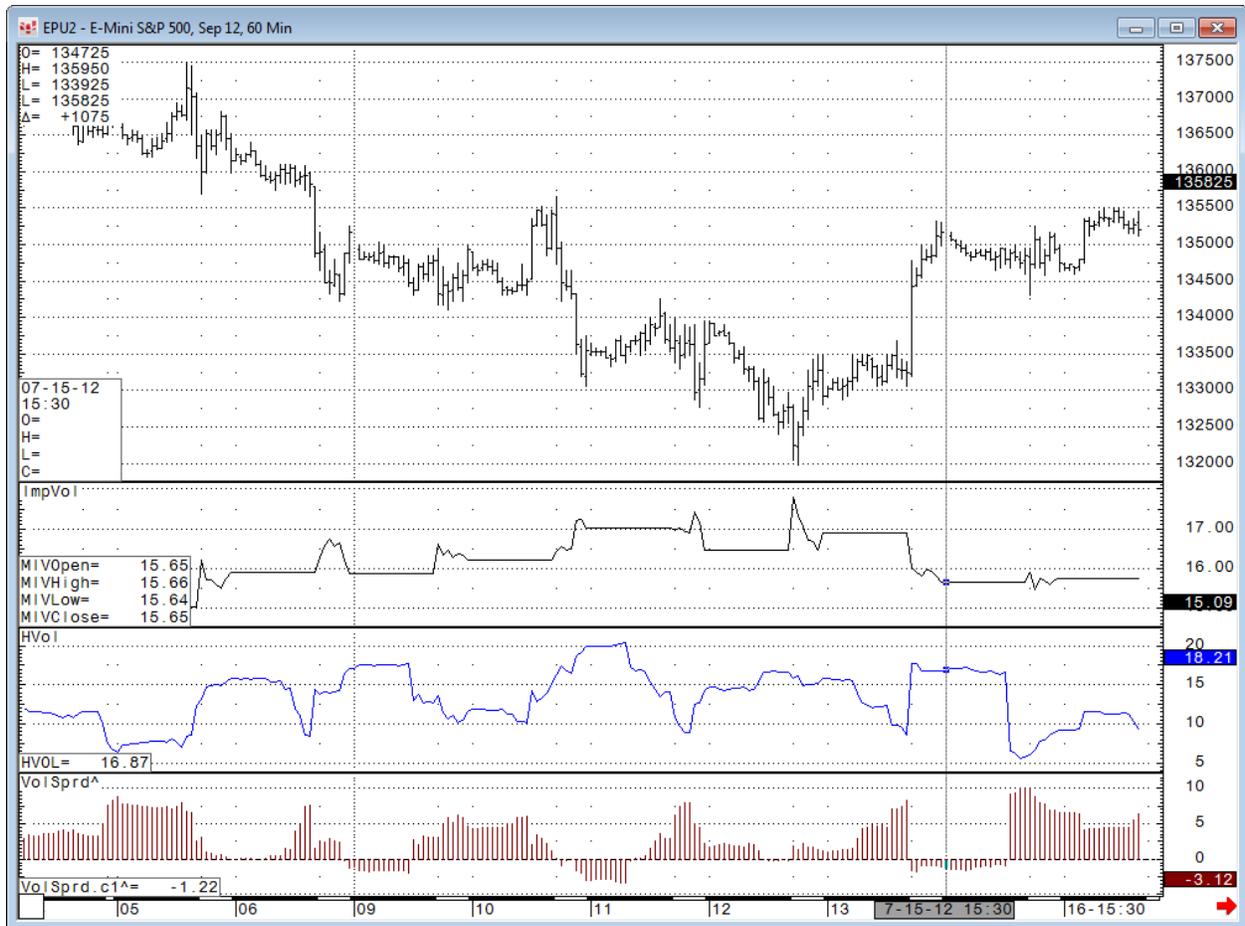
This custom study measures the spread between Implied Volatility and Historical Volatility.

HVolPeriod: Historical Volatility Period is used for calculating the Historical Volatility.

HVolAnnFctr: Historical Volatility Annualization is used for calculating the MA.

Formula of curve:

MIVClose(@) - HVOL(@,Percent,HVolPeriod,HVolAnnFctr)



Setup parameters:

- [Display](#)
- [OB/OS](#)

OBV_TB1 (OBV_TB1)

This custom study measures the On Balance Volume beginning at a user specified time. It is available on the **Add Studies** window, on the **Custom Studies** window (Define User Formulas), and in the Toolbox.

Formula of curves:

StartOfDay := Hour(@) = SHour AND Minute(@) = SMinute

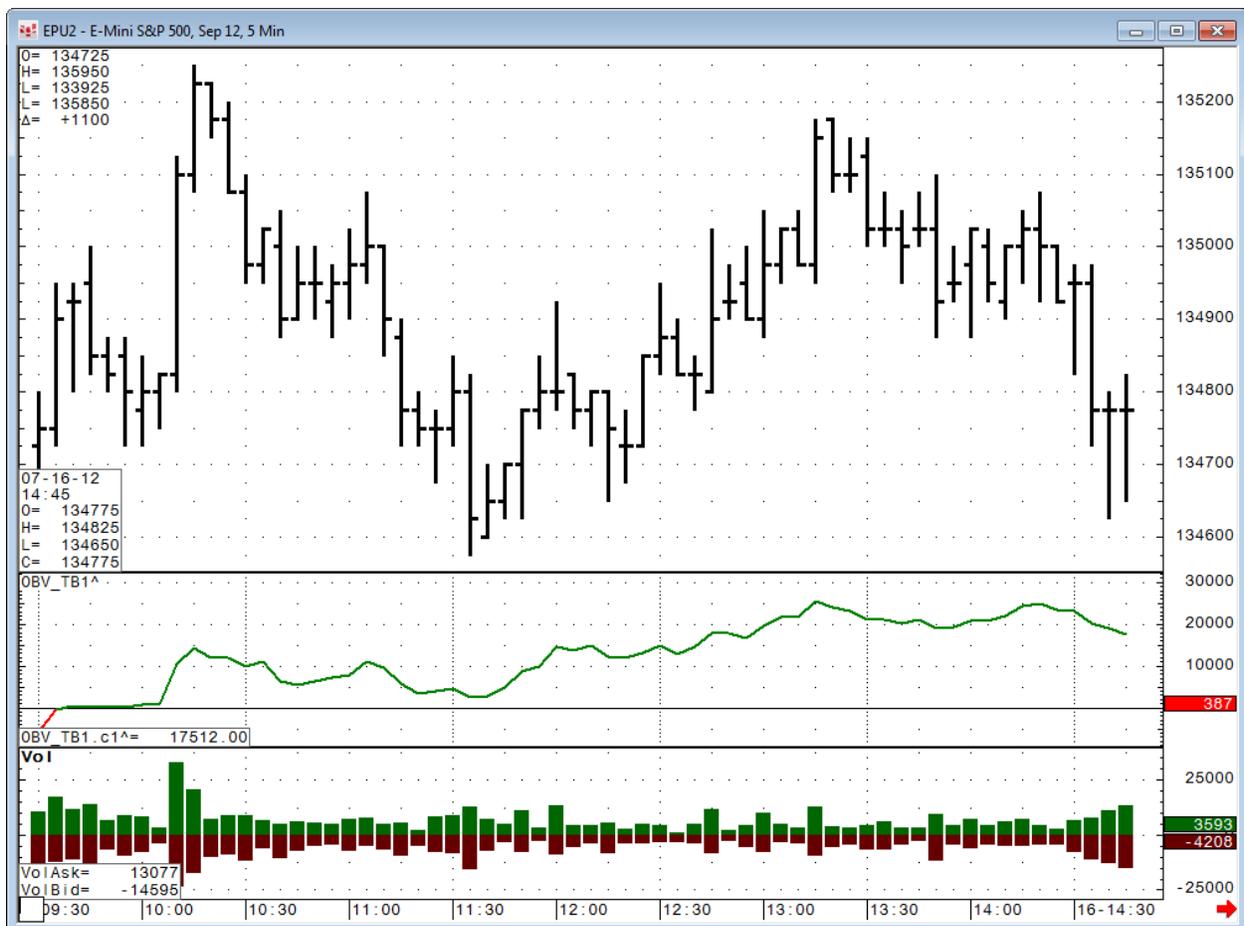
EndOfDay := Hour(@) = EHour AND Minute(@) = EMinute

TimeToCalculate := SetReset(StartOfDay ,EndOfDay) ;

myVol := IF(StartOfDay,0,

IF(TimeToCalculate,

Accum(TBTF1.NET^@,B.BeginOfDay(@,B.Hour:=7,B.Minute:=55)) ,0))



Setup parameters:

- SHour: Start Hour used for the calculation.
- SMinute: Start Minute used for the calculation.
- EHour: End Hour used for the calculation.
- EMinute: End Minute used for the calculation.
- BHour: Beginning Hour used for the calculation.
- BMinute: Beginning Minute used for the calculation.

TBTF1 (TBTF1)

This custom study plots four curves: Bid Trade Volume, Ask Trade Volume, Net Bid-Ask Trade Volume, and Net change in closing price. Formula of curves:

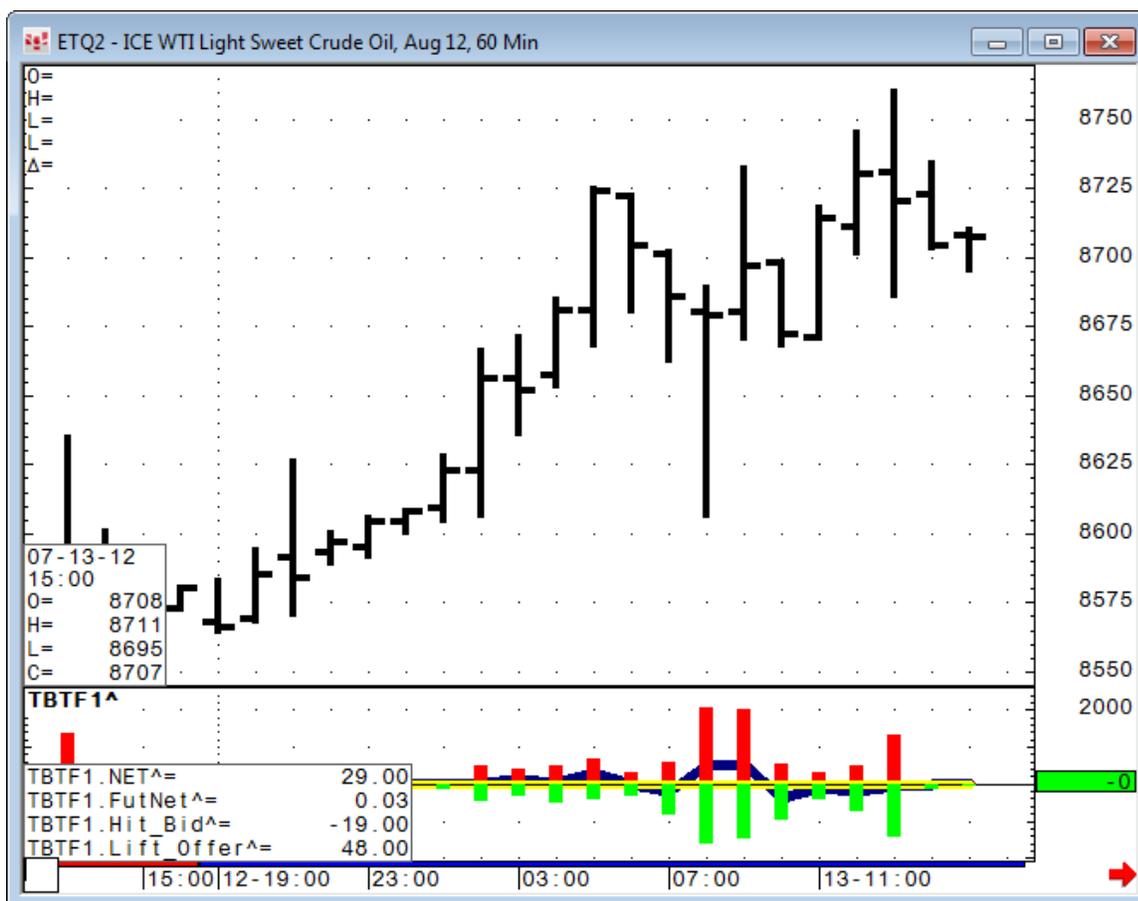
Hit_Bid: $-1 * \text{BidTradeVol}(@)$

Lift_Offer: $\text{AskTradeVol}(@)$

NET: $\text{AskTradeVol}(@) - \text{BidTradeVol}(@)$

FutNet: $(\text{Close}(@) - \text{Close}(@)[-1]) / 100$

In this image, the blue line is the net curve and the yellow line is the FutNet curve. The red histogram is the Ask Trade Volume and the green histogram is the Bid Trade Volume.



Setup parameters:

- [Display](#)
- [OB/OS](#)

Defining Trade Systems and Backtesting

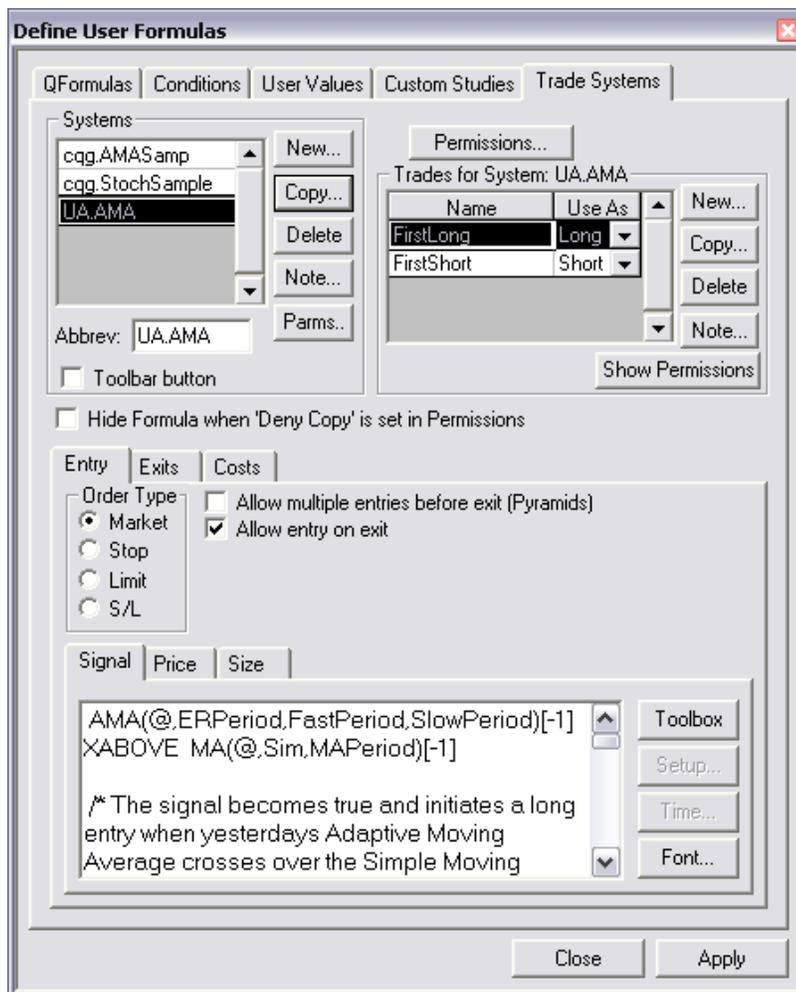
The Backtesting/Trading System feature allows you to create and graphically display the results of trading systems.

The Backtesting/Trading Systems feature is part of the **Define User Formulas** window.

Trading Systems

Trade Systems are part of the **Define User Formulas** window. To access them:

1. Click the **System** button.
2. Select **Define User Formulas**.
3. Click the **Trade Systems** tab.



CQG Trade System Samples

CQG provides two trade system samples for you: `cqg.AMASamp` and `cqg.StochSample`.

cqg.AMASamp Signal

`AMA(@,ERPeriod,FastPeriod,SlowPeriod)[-1] XABOVE MA(@,Sim,MAPeriod)[-1]`

The signal becomes true and initiates a long entry when yesterday's Adaptive Moving Average crosses over the Simple Moving Average from yesterday.

Parameters have been configured for the studies AMA (ERPeriod, FastPeriod, SlowPeriod) and MA (MAPeriod). The parameters make changing the associated periods easier from the chart window. These parameters are available for the entire trade system, so they may be used in both entries AND exits.

To change the values for these parameters, right-click on the trade system as it is displayed on the chart and select "Modify..." The parameter names will appear as column headers and the values will be found under those headers.

The Order type for this Entry is a Market Order. This means that the Trade will be executed at the Price specified in the Price tab when the Signal is true. The other order types include Stop, Limit and S/L (Stop/Limit).

The Allow multiple entries before exit (Pyramids) is fairly self-explanatory--it allows additional entry trades to be placed if the condition for that entry is hit before the exit condition is met.

The Allow entry on exit allows an entry to be placed on the same bar that is an exit for a previous trade(s). This is especially useful for Stop-and-Reverse systems.

cqg.AMASamp Price

Open(@): The price used for the trade is today's open as the signal happened yesterday.

cqg.AMASamp Size

In this sample, the trading system trades 7 contracts. This field could also be a formula evaluating the number of contracts based on market conditions.

cqg.StochSample Signal

`B.cqg.StochXAbove(@,XUpThreshold,SSKPeriod)`

This System relies on the condition `cqg.StochXAbove` and `cqg.StochXBelow`. It is a reverse type system. That is, when it exits a long it also enters a Short and vice-versa. The Threshold values and SSK Period are parameters that may be optimized.

The orders in this system are all signal based.

cqg.StochSample Price: `Close(@)`

cqg.StochSample Size: 1

Creating a Trading System

Creating a trading system involves 5 steps:

1. Naming the system.
2. Naming the long and/or short trades for the system.
3. Establishing entry characteristics for the long and/or short trades.
4. Establishing exit characteristics for the long and/or short trades.
5. Designating a commission amount and commissions scheme (either fixed or per contract).

The limit for total combined number of entries and exits per trading system is 140.

Note: You can have multiple entries and exits for the same trading system.

Naming the Trading System

1. Click the **New** button in the **Systems section** of the **Trade Systems** tab.

This displays the **Create a New Trade System** window.

2. Input a name and an abbreviation for the new trade system.

The abbreviation appears as the toolbar button name. Additionally, **CQG** uses the abbreviation name when you use one trading system as the basis for another trading system.

By default, CQG automatically uses the first seven characters of the system name as the abbreviation. However, you can change the abbreviation, if desired by:

1. Clicking in the **Abbrev:** box.
2. Entering the desired abbreviation name.
3. Select the **Toolbar button** checkbox to place a button on the application-specific toolbar, allowing users to display the trading system in a chart window with one click.
4. Click the **OK** button to save the new name and abbreviation and close the **Create a New Trade System** window.

Or,

5. Click the **Cancel** button to close the **Create a New Trade System** window without creating a new name or abbreviation.

Entering a Note

Users can easily enter a note about a trading system or trades within the trading system.

1. Click either the **Note** button associated with the trading system name or the **Note** button associated with the trades for the trading system.

This displays the **Note** window.

2. Enter the desired note text.

Naming the Trades Associated with the Trading System

The second step involved in defining a Trading System is to name the trades comprising the system.

1. Click the **New** button in the **Trades for System** section.
2. Enter a name for the new trade.
3. Click the **OK** button to record the new trade name and close the **Create a New Trade** window.
4. Select the type of trade from the dropdown list in the **Use As** section.

Choices include **Long**, **Short** or **Off**.

If **Off** is selected, the trade will still be part of the current trading system but will not be considered in the current evaluation.

Designating the Order Type

The first step in establishing the entry characteristics is designating an entry signal.

1. Click the **Entry** tab.
2. Select the **Order Type**.

Designating the Order Characteristics

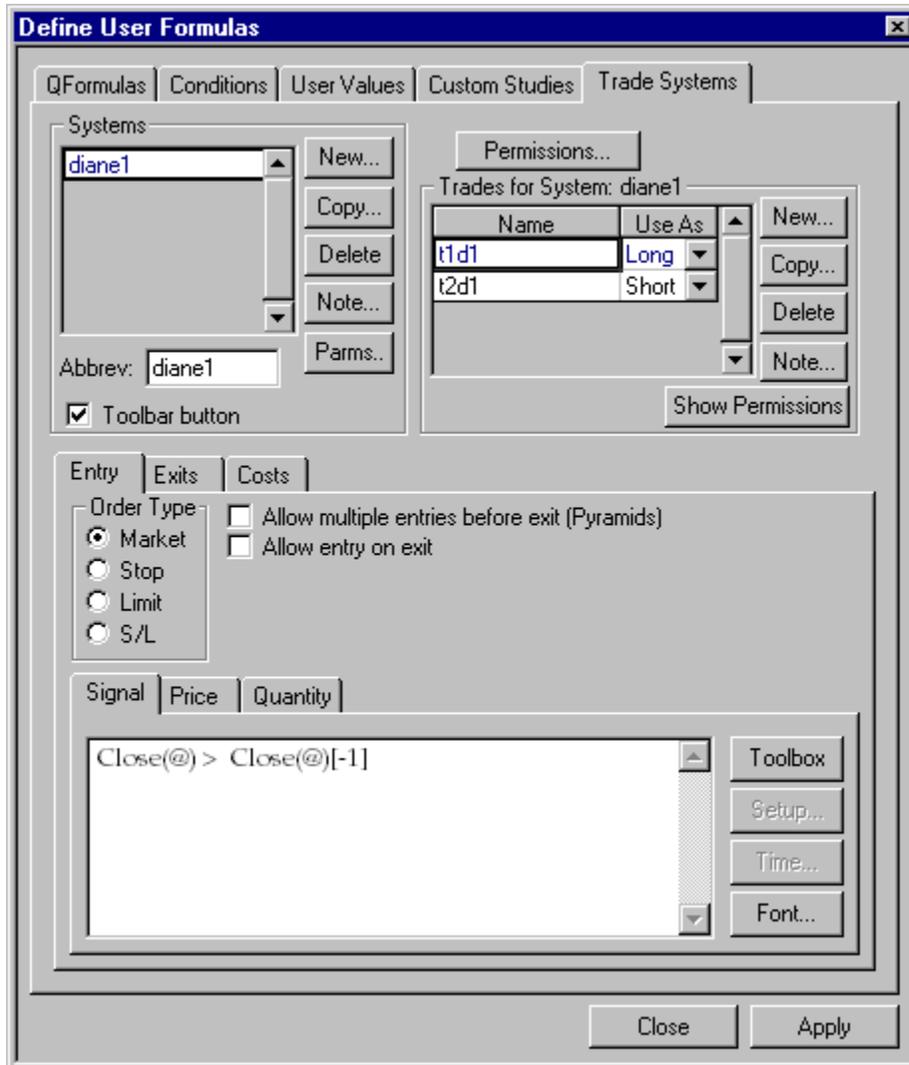
Select one or more of the **Allow multiple entries before exit (Pyramids)** and/or **Allow entry on exit boxes**.

- Selecting the **Allow multiple entries before exit** checkbox allows positions to accumulate without being closed until the exit signal becomes true.
- **Selecting the Allow entry on exit** checkbox allows entries and exits to occur on the same bar. When the box is not checked the system will wait at least until the next bar before generating an exit signal.

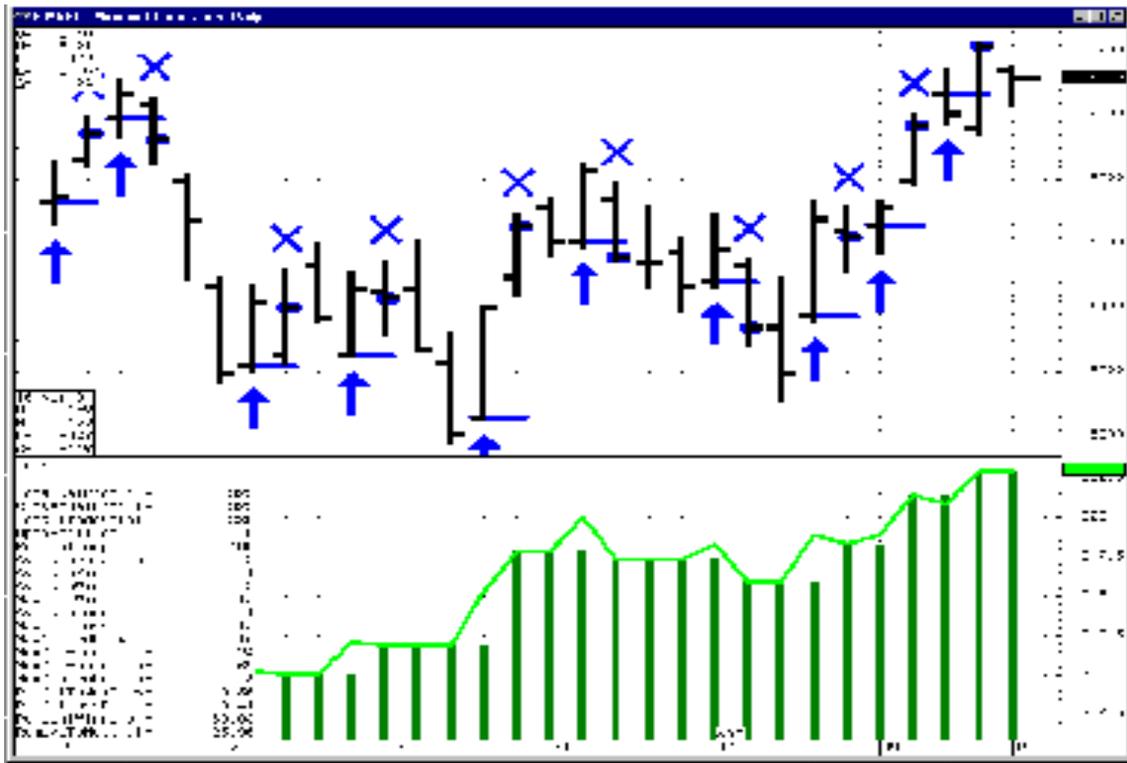
Potential Timeframe Problem in Trading Systems Formulas

Because some values (high, low, and close) are not known until after a market's close, you can set up a trading system that will appear to be extremely successful, but won't work in reality. The following examples illustrate what can happen:

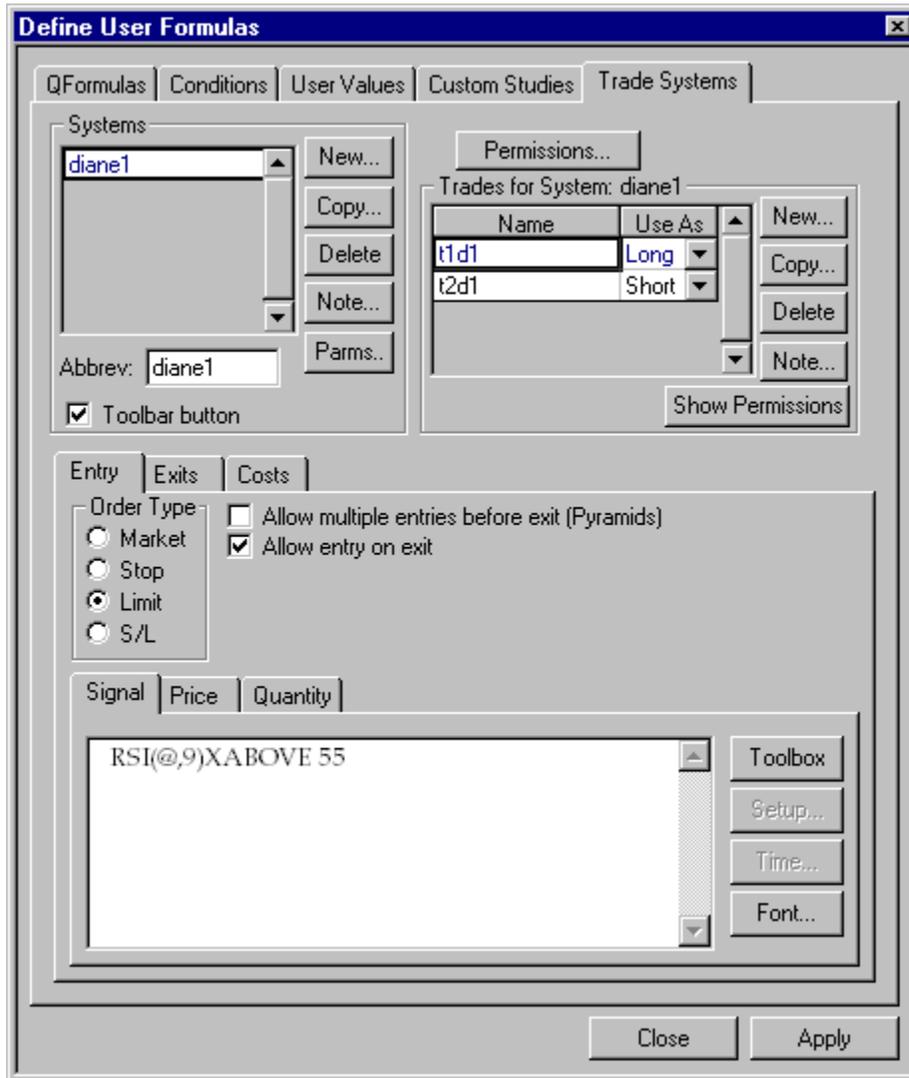
Example #1: In this example, the system is set up to enter on today's Open (the Order Type button) whenever today's close is greater than yesterday's close. However, you won't know the value of today's close until after the close occurs, so you can't truly base entry decisions on that future event.



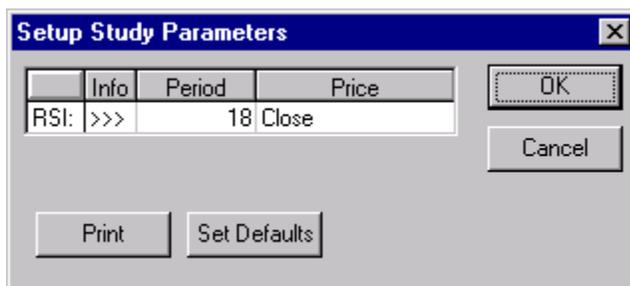
The graph shows the results of implementing this trading system. It reports a great profit profile. Unfortunately, it doesn't work like that in reality.



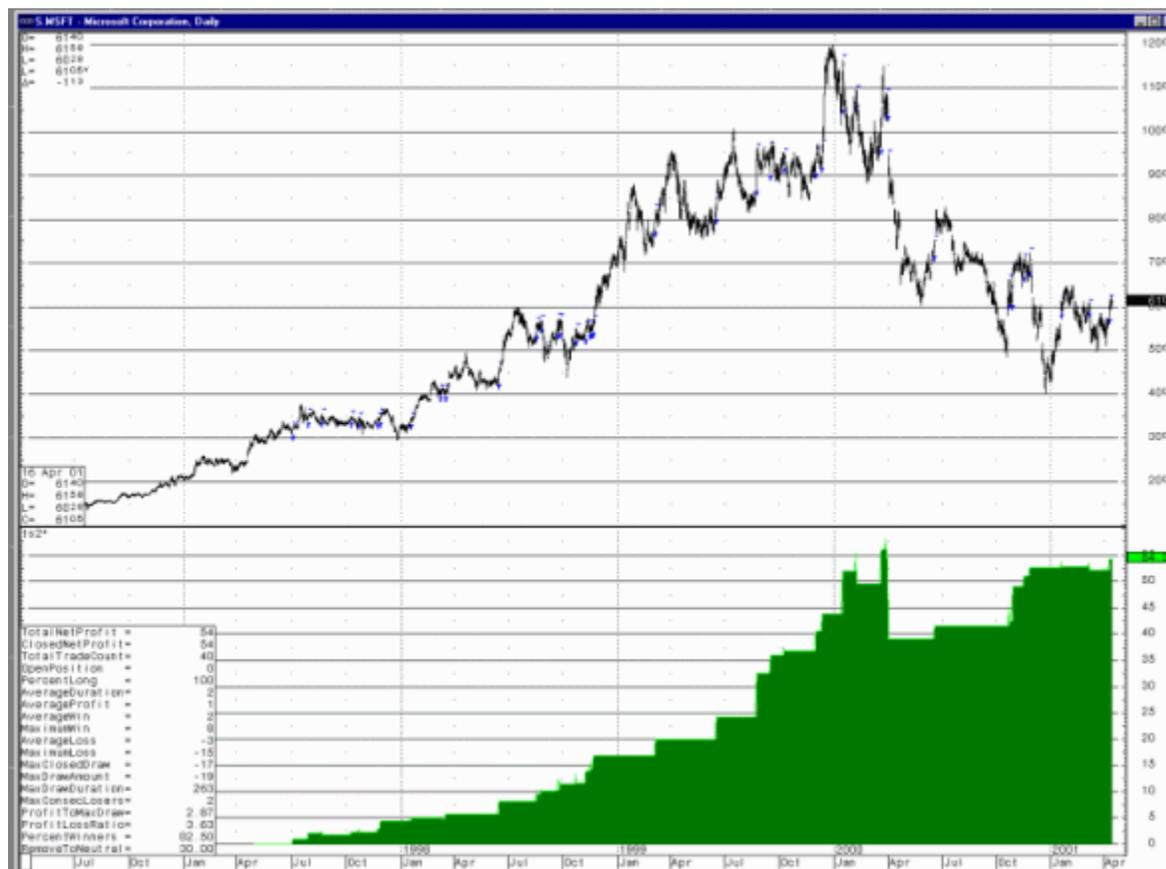
Example #2: This example illustrates a less obvious time-based mistake. Once again, the system is set to Enter on Open. This time the signal is based on an RSI.



While that might be fine, in this case, there will be a problem because the RSI is based on the closing price.



Once again, you have extremely profitable results reported in the graph below, but that's because it reflects decisions that are based on future events, as a result of the RSI having a closing price parameter, while the trading system has an Open order type.



If you see remarkably profitable results reported by your trading system, check all your values to be sure your trading system isn't acting on information you won't have in real-time.

Designating the Entry Signal

1. Click the **Signal** tab to define the actual entry signal.
2. **Trading System signals** are defined using the **Formula Toolbox**, exactly the same way Q Formulas, Conditions, User Values and Custom Studies are specified.
3. Click the **Toolbox** button.
4. Insert the desired elements from the **Formula Toolbox**.

Note: Signals yield true or false values.

Designating the Entry Price

1. Click the **Price** tab.
2. Designate the price (using the **Formula Toolbox**) to be used for the entry signal.

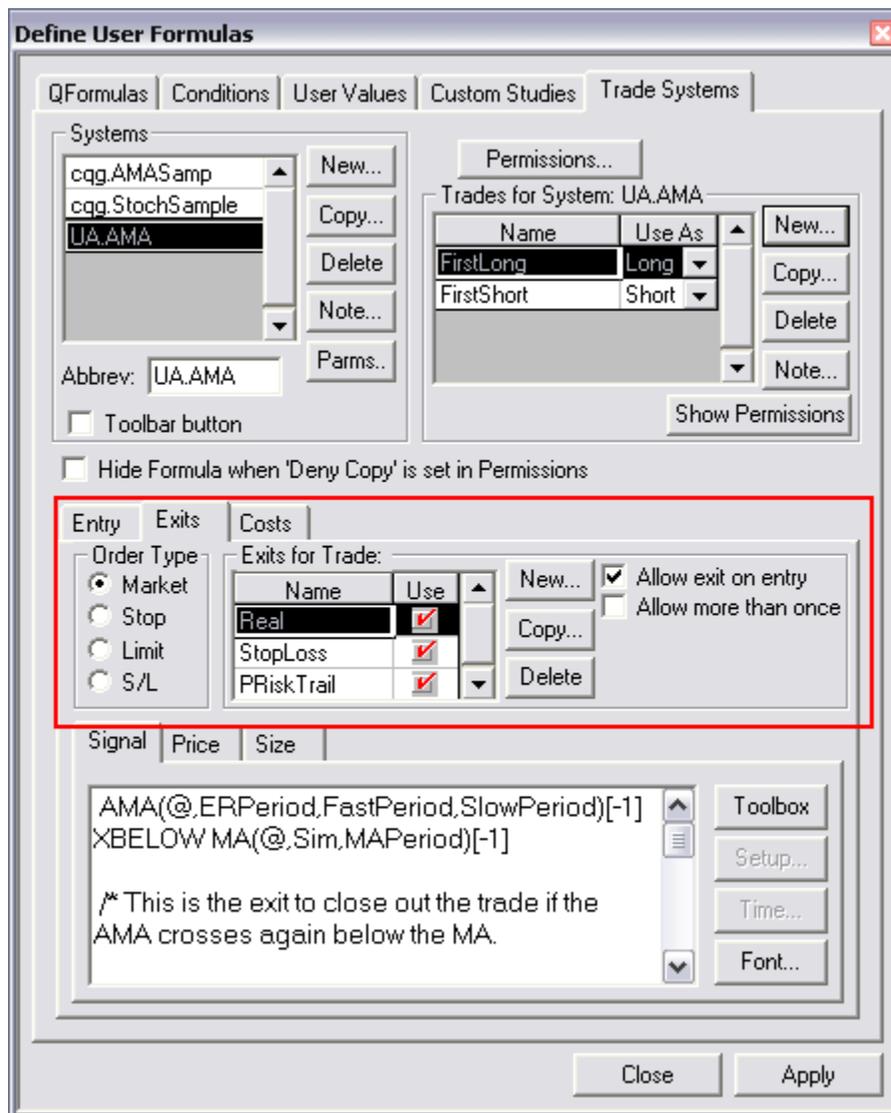
A price can only be designated when either a Stop or a Limit order has been designated as the order type, since Open and Close already refer to a specific price.

The price designation operates in conjunction with the signal designation. In other words, the price parameter tells the system where to execute the order once the designated signal becomes true.

Designating a Quantity

1. Click the **Quantity** tab.
2. Input the quantity for each trade.

Designating Exit Characteristics



Similar to defining the entry characteristics, you must define the exit characteristics for each trade in the system. Like the entry criteria, designating the exit criteria involves specifying an order type, designating the Signal, Price, and Quantity. However, unlike the entry characteristics, you may designate more than one exit for each trading system.

Defining a New Exit

1. Select an order type. Choices include: **Open**, **Stop**, **Limit** or **Close**.
2. Click the **New** button. The **Create a New Exit** window opens.



3. Enter a name for the new exit.
4. Select the type of exit. CQG offers 6 types of exits:
 - Custom
 - Money management
 - Break even
 - Dollar risk trailing
 - Percent risk trailing
 - Profit target
 - Entry stop
5. Select either or both of the checkboxes. Allow entry on exit allows entries and exits to occur on the same bar. Allow more than once allows more than one exit to occur on the same bar.
6. Click the **OK** button.

To copy an exit

You can copy previously created exits and use the old exit as the basis for a new exit signal.

1. Select the exit to be copied.
2. Click the **Copy** button.
3. This displays the **Copy an Exit** window.
4. Enter a name for the new exit.
5. Click the **OK** button.

The newly created exit appears at the bottom of the **Exits for Trade** section of the **Exits** tab. Modify the exit using the **Formula Toolbox**.

Note: You can only copy previously-created custom exits.

You can also easily delete a trade exit.

To delete an exit

1. Select the exit.
2. Click the **Delete** button in the **Exits** section for the **Define User Formulas** window.

Types of Exit Signals



You must define an entry and an exit for each trade in your system.

CQG offers 6 types of exit signals and allows you to define multiple exit signals for each Trading System.

To define an exit signal

1. Click the **Exits** tab.
2. Select an **Order Type**.
Choices include **Open**, **Stop**, **Limit** or **Close**.
3. Click the **New** button in the **Exits for Trade** section. This displays the New Exit window, which allows you to specify one of 7 types of exits.
Or
4. Click the **Copy** button to use a previously defined exit signal as the basis for a new exit signal.

To specify a custom exit

1. Select **Custom**.
2. Enter a name for the **Custom** exit.
3. Click the **OK** button.
4. Enter a formula for the signal on the Signal tab, using the Formula Toolbox.

To specify a money management exit signal

The Money Management exit type enters a stop order at a price that represents the maximum you are willing to lose per trade.

1. Select Money management.
2. Enter a **Name** for the signal.
3. Enter an Amount representing the maximum acceptable loss per trade.
4. Click **OK** to apply the selection and close the **New Exit** window.

To specify a break even exit signal

A **Break Even** exit signal allows you to specify a certain price level for the stop to activate. Once the profit level is reached, a stop order is placed at the entry price. Therefore, the trade will break even, if the stop price is hit.

1. Select Break Even.
2. Enter a **Name** for the **Break Even** signal.
3. Enter a **Floor** price.

The **Floor** price represents the point where the stop order takes effect.

To specify a trailing dollar risk exit signal

A trailing dollar risk stop allows you to specify a profit level that is no less than a user-specified dollar amount below your highest profit. In other words, it represents an amount you are willing to "give back". As profits rise, the stop will also rise.

1. Select Dollar Risk Trailing.
2. Enter a **Name** for the **Dollar Risk Trailing** signal.
3. Enter an **Amount**.

The **Amount** represents the "give back" amount.

To specify a trailing percent risk exit signal

The trailing percent risk option allows you to specify a minimum level of profits and a retracement level. In the above example, the stop would activate once profits had reached \$2000, and the stop would be set at 50% of that level, i.e. \$1000.

1. Select Percent Risk Trailing.
2. Enter a **Name** for the **Percent Risk Trailing** signal.
3. Enter a **Floor** amount.
4. The **Floor** amount represents the level of profits where the stop is activated.
5. Enter a **Percent**.

The **Percent** value represents the percentage of the floor value where the stop is placed.

To specify a profit target exit signal

The **Profit target** option sets the stop at the price that represents the designated profit amount.

1. Select profit target.
2. Enter a name for the profit target signal.
3. Enter an amount.

The **Amount** represents the profit goal.

To specify an entry stop exit signal

Unlike the other exit rules, the **Entry Stop** option sets the stop using a bar value.

The Entry Stop enters the formula "BarsSinceEntry(@,0,All,ThisTradeOnly)" as an exit. If you choose **High**, then the next bar's high (or whatever number of bar's out chosen) is used. If you choose **Low**, then the next bar's low (or whatever number of bar's out chosen) is used.

1. Select entry stop.
2. Select **High** or **Low**.

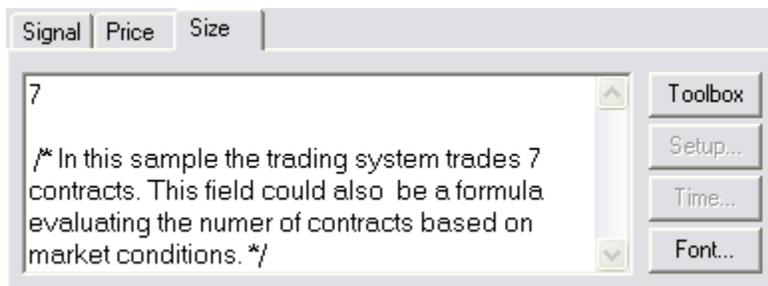
Designating the Exit Price



1. Click the **Price** tab.
2. Designate the price (using the Formula Toolbox) to be used for the exit signal.

A price can only be designated when either a Stop or a Limit order has been designated as the order type, since Open and Close already refer to a specific price.

Designating a Size



1. Click the **Size** tab.
2. Input the quantity for each trade.

Specifying Trading Costs



The **Costs** tab allows users to enter a commission amount, thereby providing a more accurate reflection of a system's profitability.

To enter a commission amount:

1. Click the **Costs** tab.
2. Enter a commission amount.
3. Select either fixed or per contract from the drop down list.

Inserting Functions into Entry and Exit Signals

The COG Trading System feature comes with several special functions, which can be used to create entry and exit signals. These functions are only accessible from the Formula Toolbox using the Trade System tab in the Define User Formulas window.

Establishing Security Provisions for a Trading System

The COG pacs and components feature allows users to create security provisions that preclude unauthorized persons from accessing a trading system.

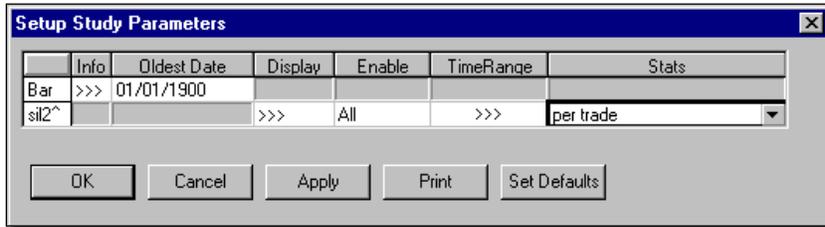
Viewing Backtesting Results



Once a trading system has been defined, the name of the system appears in the Add Study windows like any other study and can be displayed like any other study, using either a toolbar button or one of the Add Study windows.

The backtesting display appears as two windows: a top window showing the entry and exit points, and whether the individual trades are profitable, and a second window showing the amounts of the profits or losses for the system as a whole and giving various statistics related to the system.

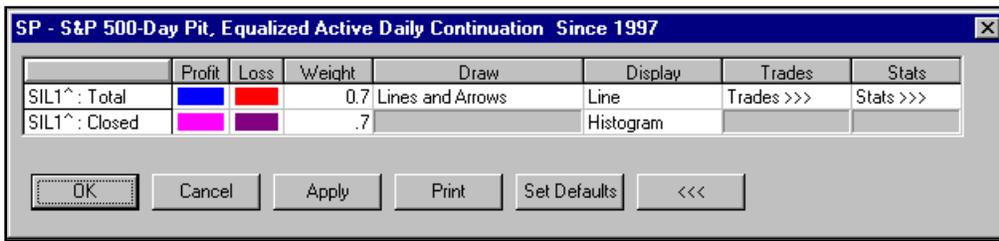
Selecting Display Elements for the Backtesting Display



Users can select from among several items to display in a Trading System window.

1. Right-click in a **Trading System** window.
2. Select **Modify Study Parameters**.
3. This allows users to set **Display**, **Enable** and **Time Range** and **Stats** characteristics for a **Trade System** window.

Selecting Display Characteristics



Selecting Display from the initial Setup Study Parameters window allows you to set display characteristics for the following:

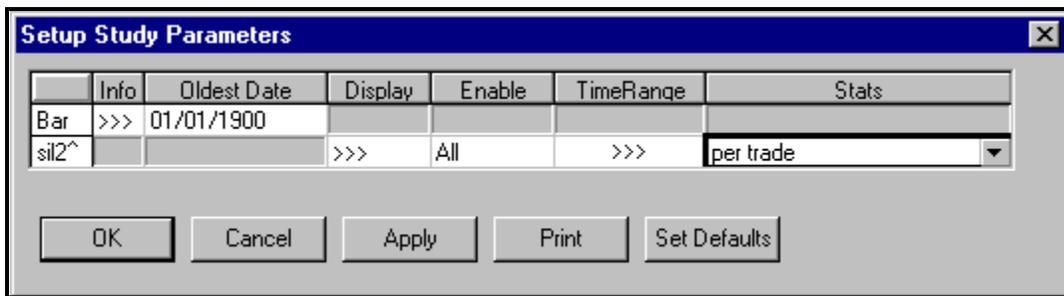
Display Part	Function
Profit	Sets the colors for the total and closed profit lines.
Loss	Sets the colors for the total and closed loss lines.
Weight	Sets the thicknesses for the total and closed display lines.
Draw	Sets the elements that will appear in the display. Choices include: Lines and Arrows, Arrows only, Lines only, or None.
Display	Sets the form for the total and closed displays. Choices include: <i>Line</i> or <i>Histogram</i> .

Display Part	Function
Trades	Accesses a second color dialog to select the colors for the trades in the system. (The arrows and the circles in the top pane).
Color	Allows you to select the colors for the system trades.
Entry Stop	Allows you to turn and off Entry Stop trades for this system.
Entry Limit	Allows you to turn and off Entry Limit trades for this system.
Exit Stop	Allows you to turn and off Exit Stop trades for this system.
Exit Limit	Allows you to turn and off Exit Limit trades for this system.
Stats	Turns on and off individual display elements showing statistics associated with the trading system.
Total Trade Count	Total number of buys and sells indicated by the system.
Open Position	Number of contracts long or short.
Percent Long	Percentage of the total trades that were long trades.
Average Duration	Average number of bars a trade is held.
Average Profit	Average gain for all trades.
Average Win	Average gain for all winning trades.
Average Loss	Average loss for all losing trades.
Maximum Win	Biggest winning trade.
Maximum Loss	Biggest losing trade.
Max Closed Draw	Biggest amount lost for any string of losing trades.
Max Draw Amount	Largest loss in equity during any time, i.e., the amount needed to trade the system.
Max Draw Duration	Largest number of bars from a peak to a trough
Max Consec Wins	Largest number of consecutive winning trades.
Cur Consec Wins	Current number of consecutive winning trades.
Max Consec Losses	Largest number of consecutive losing trades.

Display Part	Function
Cur Consec Losses	Current number of consecutive losing trades.
Profit to Max Draw	(Total Net Profit)/ (Maximum Draw Amount).
Profit Loss Ratio	(Total gain for open and closed trades)/(Total loss for open and closed trades).
Percent Winners	Percentage of profitable trades.
Remove To Neutral	How many of the most profitable trades would have to be removed to make the total profit zero. (Only relevant for profitable trading systems.)
Return Retrace	Average compounded return divided by the average maximum retracement (AMR), where the AMR equals the average of the maximum retracement for each point and the maximum retracement equals the larger of the: maximum retracement from a prior equity peak or the maximum retracement to a subsequent low.
Linear Regress	Applies a least squares linear regression line to the profit curve producing an average return, which is divided by the Standard Error.
Time Percentage	Shows the number of bars in any trade divided by the current number of bars, which is the percentage of time (in terms of number of bars) the trade system has been in the position.

Notes: Stat values are only displayed when the vertical cursor is active. Total Net Profit and Closed Net Profit are automatically displayed.

Selecting the Enable Choice



From the **Enable** section of the initial **Setup Study Parameters** window, select which trades to include in the bottom panel of the **Backtesting/Trading System** display. Choices include: **All**, **Longs** or **Shorts**.

To select the time range

The screenshot shows the 'Define Bar Range' dialog box. It is divided into two main sections: 'From' and 'To'.
 - The 'From' section contains three radio buttons: the top one is selected and labeled '1000 Bars Back'; the middle one is labeled '10/26/2001 16:11'; the bottom one is labeled '1 Days Back'.
 - The 'To' section contains three radio buttons: the top one is selected and labeled 'Current'; the middle one is labeled '10/26/2001 16:11'; the bottom one is labeled 'Not to exceed 2000 Bars'.
 - On the right side of the dialog, there are two buttons: 'OK' and 'Cancel'.

1. Right-click the displayed study.
2. Selecting **Modify**.
3. Click the >>> under Time Range. This displays the **Define Bar Range** window.
4. Choose one of the three buttons in the **From** section, as described below.
5. Select the top button in the from section for daily or longer bars.
6. Click the drop down list button next to the date to display the **Calendar** and select the desired date.
7. Input the desired time or select the second button for intraday bars.
8. Input the desired number of bars to look back.
9. Input the desired time (for intraday bars).
10. Enter 00:00 to limit the time range to the current day or select the third button to start the bar range a specific number of days back.
11. Input the number of days back to start the range.
12. Click either the **Current** button in the **To** section or the button immediately below that to select a date and time to end the evaluation.
13. Enter a date and time, if necessary (if the Current button has not been selected).
14. Click the **OK** button to apply the selections and close the **Define Bar Range** window.

To select the stat characteristics

Users can elect to display certain elements on a per trade or per contract or share basis. Elements that display differently on a per contract or share basis are:

- Total Trade Count
- Percent Long
- Average Duration
- Average Profit
- Average Win
- Maximum Win
- Average Loss
- Maximum Loss

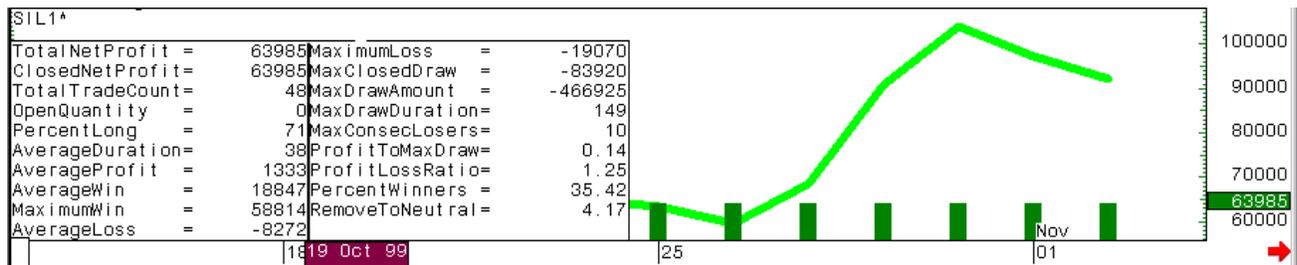
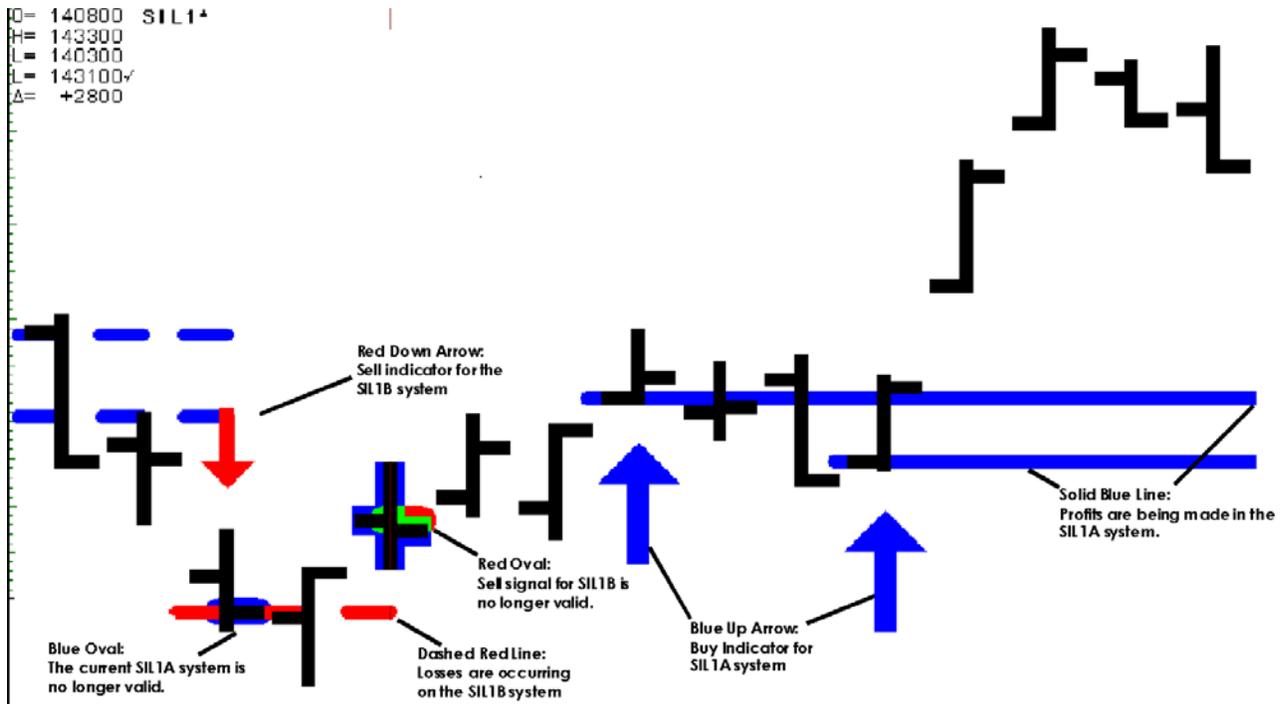
The remaining elements display the same whether per trade or per contract or share is selected.

Printing a Trading System's Specifications

Like other applications within CQG IC, the Backtesting/Trading System feature has a special printing capability. Printing in the Backtesting/Trading System application allows users to print all the choices they made when setting up the selected trading system.

1. Right-click the trading system to be printed.
2. Select **Send to**.
3. Select where the print should be sent.
4. Choices include: **Printer**, **File** or **Clipboard**.
5. Select **Details**, if desired.
6. Selecting **Details** prints all the parameter names and values, rather than only the values.

Understanding the Backtesting Display



Backtesting results can be displayed like any other study.

To display backtesting results for a Trading System

1. Click the **Study** button.
2. Click the **TradeSys** tab.
3. Select the **Trading System** to be displayed.
4. Click the relevant **Trading System** button in the button column.
5. Click the **Add** button.
6. Click the **Close** button to close the **Add Study** window.

Elements of a Backtesting Display

Backtesting displays consist of two windows. One window shows the up and down arrows, dashed and solid horizontal lines and ovals indicating the trades specified by the system. There will be one set of these arrows, lines and ovals for each trade specified in the **Trades for System** section of the **Define User Formulas** window for the relevant trading system.

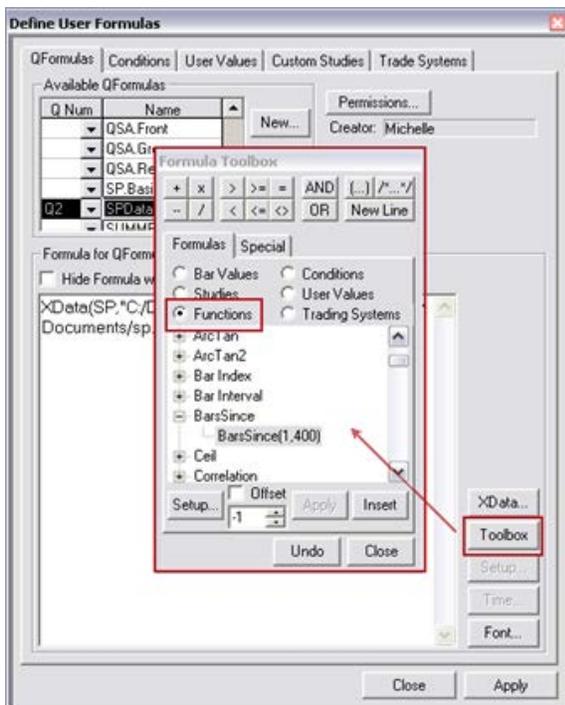
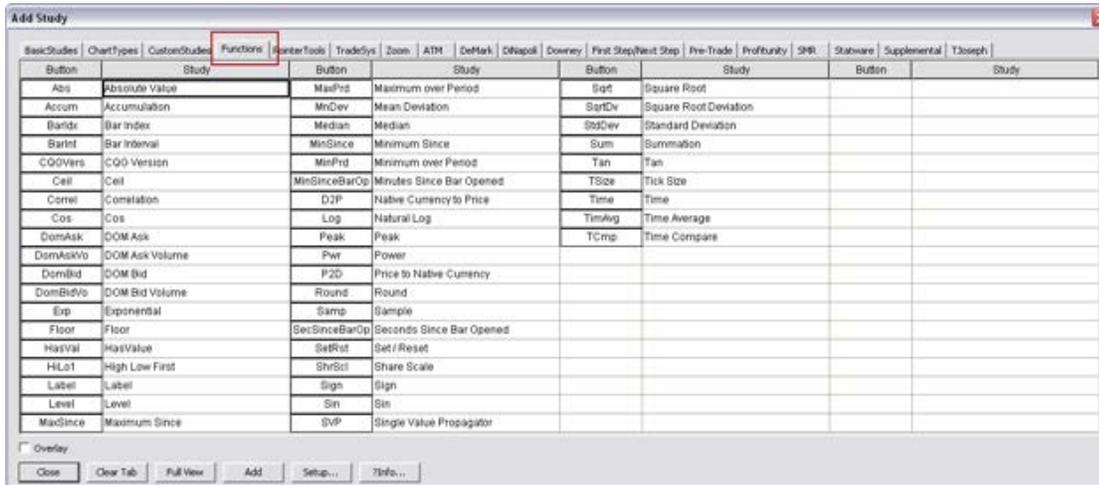
The second display window indicates the success of the system over the designated bar range, giving various indicators of risk and profit.

The following table describes the meaning of each of the elements in the top window of the Backtesting display:

Element	Description
Red & blue dashed lines	Indicates losses are being incurred in the system.
Red & blue solid lines	Indicates profits are being made in the system.
Red & blue ovals	The end of the current buy or sell signal for the 2 systems.
Red & blue up arrows	Buy indicators for the 2 systems.
Red & blue down arrows	Sell indicators for the 2 systems.

Functions

Functions can be found on the **Add Studies** window or in the **Toolbox** on the **Define User Formulas** window:



Common Parameters

Many functions include these common parameters: **Info**, **Display**, **MarkIt**, and **OB/OS**.

These parameters are described in the next sections. The **Info** button is not an actual parameter. Clicking this button opens the online help for the study.

Parameters that contain arrows (>>>) indicate that a secondary parameter window will open when that parameter is selected. To return to the primary window, use the back button on the secondary window.

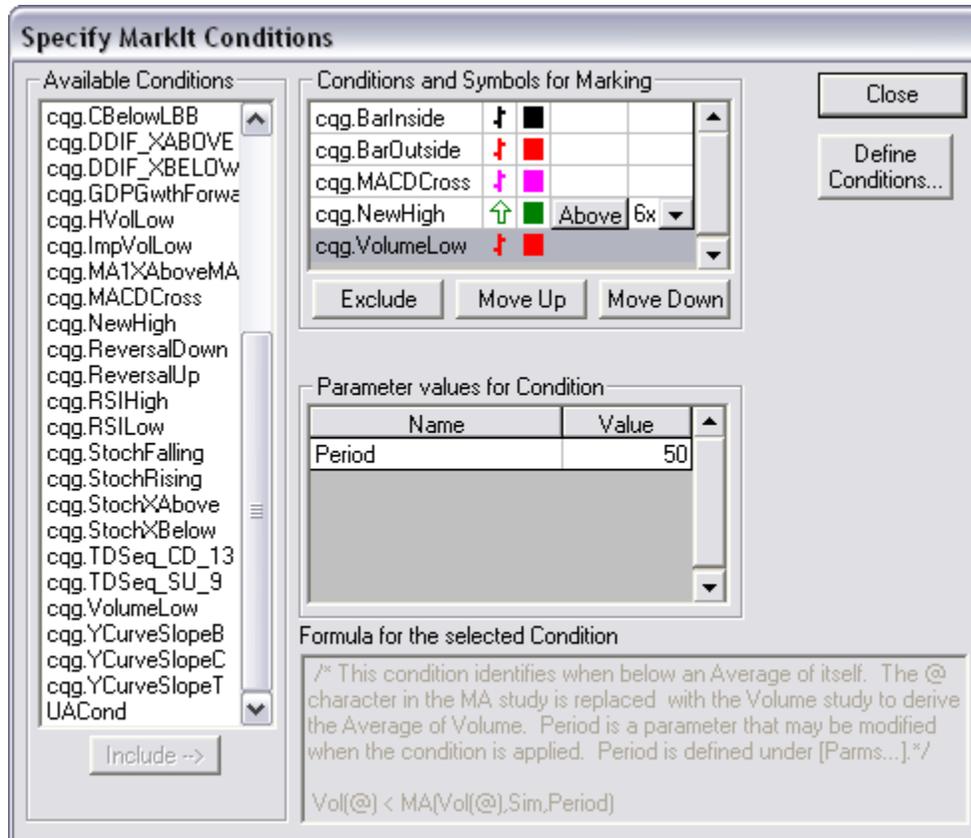
Display Parameter

Display parameters typically control how the study looks on the chart. They include:

- **Color:** Select a color for the line.
- **Weight:** Choose how thick you want the study line.
- [MarkIt](#)
- **Line Style/Display:** Choose a line style, such as line or histogram.
- **Shape:** Choose the symbol used to mark a trade on a price bar (e.g. Order Display study).
- **Display/Enable:** Click this check box to display the line.
- **Share Scale:** Determines whether sharing of the vertical scales between studies is accepted.
 - Auto** = CQG decides if sharing the vertical scale is feasible;
 - On** = The vertical scales will be shared, regardless of which studies are displayed;
 - Off** = The vertical scale will not be shared between studies.

MarkIt Parameter

The MarkIt parameter allows you to add conditions to studies. Clicking the **MarkIt** cell opens this window:



To add conditions to the study:

1. Click a condition in the list on the left.
2. Click the **Include** button. The condition will be listed in the list on the top center of the window. It's color and symbol will also be displayed.
3. Some conditions have settings you can select. See **cqq.NewHigh** in the example above. Make any changes you want to these settings.
4. Click **Close**.

OB/OS Parameter

These parameters apply to overbought/oversold indicators:

- **Color:** Select a color for the line.
- **Weight:** Choose how thick you want the study line.
- **Type:** Choose **Fixed** or **Dynamic**.
- **Std Dev:** The multiplier of the Standard Deviation used to derive high and low.
- **Lookback:** The number of bars the study should compare to the current bar.
- **Level:** Selects the percentage value of average OB/OS used to calculate the predictor OB/OS levels.
- **Display:** Click this check box to display the line.
- **Style:** Choose a line style.

Absolute Value (Abs)

This function is available on the Add Study window and in the Formula Toolbox.

Displays the Absolute value (the distance from zero or the number without its sign) of the chart output.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.
- [OB/OS](#)

Accumulation (Accum)

This function is available on the Add Study window and in the Formula Toolbox.

The Accumulation function adds successive chart values until a user specified condition is met. At that point, the Accumulation value is reset to zero and the process repeated.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.
- **Reset:** The condition that, when true, resets the Accumulation study to zero.
- [OB/OS](#)

Aggregate

This function is available only in the Formula Toolbox.

Aggregation allows you to trade similar instruments in two or more exchanges and let the system manage where you get filled.

Setup parameters:

Calc Mode: Identifies how you would like the formula calculated, by legs or currency.

Rollover: If turned on, when one leg expires, all legs roll over to the same month.

Tick Size: Use Auto or enter a tick size value.

Trade Strategy: Opens the Set Up Trading Parameters window that includes options for strategy, aggressive, and passive parameters.

ArcCos (ACos)

This function is available only in the Formula Toolbox.

The ArcCos function expresses the Cosine function in radians between 0 and pi. For example, the ArcCos of 1 equals 0, the ArcCos of 0 = pi/2 and the ArcCos -1 = pi.

The cosine function takes the selected chart value, converts it into radians and calculates a cosine value. For example, the cosine value of 1090 is .99.

This value is calculated as follows:

$$1090/(2*\pi) = 173.478$$

Calculates the laps around the unit circle

$$.478 * (2*\pi) = 3.00894$$

Takes the leftover lap and converts it to radians

$$\text{Cos}(3.00894) \text{ radians} = -.991214531$$

Calculates the Cosine for the corresponding radians

Therefore,

$$\text{ArcCos}(-.991214531) = 3.00894 \text{ radians}$$

Price is the only parameter for ACos.

ArcSin (ASin)

This function is available only in the Formula Toolbox.

The ArcSin function expresses the sine function in radians from 0 to pi. For example, the ArcSin of 1 equals pi/2.

The sine function takes the selected chart value, converts it into radians, and calculates a sine value. For example, the sine value of 1090 is .13.

This value is calculated as follows:

$$1090/(2*\pi) = 173.478$$

Calculates the laps around the unit circle

$$.478 * (2*\pi) = 3.00894$$

Takes the leftover lap and converts it to radians

$$\text{Sin}(3.00894) \text{ radians} = .132263954$$

Calculates the sine for the corresponding radians

Therefore,

$$\text{ArcSin}(.132263954) = 3.00894 \text{ radians}$$

Price is the only parameter for ASin.

ArcTan (ATan)

This function is available only in the Formula Toolbox.

The ArcTan function expresses the tangent function in radians between 0 and pi. For example, the ArcTan of 1 equals pi/4.

The tangent function takes the selected chart value, converts it into radians, and calculates a tangent value. ArcTan relates only to the right half of the unit circle.

This value is calculated as follows:

$1090/(2*\pi) = 173.478$	Calculates the laps around the unit circle
$.478 * (2*\pi) = 3.00894$	Takes the leftover lap and converts it to radians
$\text{Sin}(3.00894) \text{ radians} = .132263954$	Calculates the sine for the calculated radians
$\text{Cos}(3.00894) \text{ radians} = -.991214531$	Calculates the cosine for the calculated radians
$.13226249/.991214531 = -.1334$	Divides the sine by the cosine

Therefore,

$$\text{ArcTan}(-.1334) = -.13264826 + \pi = 3.00894 \text{ radians}$$

Price is the only parameter for ATan.

ArcTan2 (ATan2)

This function can be accessed only in the Toolbox.

The ArcTan2 function operates the same way as the ArcTan function. However, the ArcTan2 function provides more specific values by allowing the user to specify both of the relevant points on the unit circle.

Example: $\text{ArcTan2}(.132263954, -991214531) = 3.00894$.

Setup parameters:

Price is the only parameter for ATan2.

Bar Index (BarIdx and BarIx)

This function is available on the Add Study window (BarIdx) and in the Formula Toolbox (BarIx).

The Bar Index function displays the number of bars, of the designated interval, which have occurred up to the selected time for a particular day. For example, each day at 2:30, on a 30-minute S&P 500 bar chart, the Bar Index will show a value of 12, indicating there have been 12 30-minute bars up to that time.

Setup parameters:

- **Reference:** Selects the reference point of the bar indexing.
 - Start of Day** = Number of bars since the start of the trading day;
 - End of Day** = number of bars left in the trading day;
 - Start of Session** = Number of bars since the start of the session;
 - End of Session** = Number of bars left in the session.
- [Display](#)
- [MarkIt](#)
- [OB/OS](#)

Bar Interval (BarInt)

This function is available on the Add Study window and in the Formula Toolbox.

The Bar Interval function returns the current value of the bar interval for the chart it is applied to. It is used primarily for creating conditions where specifying a bar time frame is important.

Example: `BarInterval(@,none) > BarInterval(@,30)` would be true if the current bar time frame were greater than 30 minutes.

Setup parameter:

Interval: The bar time frame. Values:

None

15 (-minute)

30 (-minute)

60 (-minute)

120 (-minute)

D (Daily)

M (Monthly)

S (Semi-Annual)

Y (yearly)

Bars Since (BarsSince)

This function can be accessed only in the Toolbox.

The Bars Since function counts the number of bars since a specified event occurred.

Example: BarsSince(@XABOVE 11000,1,300) would count the number of bars, up to a maximum of 300, since the selected symbol (@) first crossed above 11000.

Like other functions, the Bars Since function facilitates the creation of custom studies.

Setup parameters:

- **NEvents:** Allows the user to specify an occurrence number other than one before the count begins.
- **Max Bars to Search:** Selects the maximum number of bars to cover.

Ceiling (Ceil)

This function is available on the Add Study window and in the Formula Toolbox.

The ceiling function rounds all non-integer chart values to the next highest integer. All integer chart values maintain their value.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.
- [OB/OS](#)

Conversion Factor

This function can be accessed only in the Toolbox.

Calculates the appropriate conversion for the futures contract based on the delivery period (for example, TYA?1, TYA?2) and the cash treasury (T.US.C025P0820, T.US.C034P0520).

Correlation (Correl)

This function is available on the Add Study window and in the Formula Toolbox.

Correlates the price movement of two symbols over a defined number of bars. For example CORREL(CL,QO,10) will return the correlation between West Texas Crude on the NYMEX and North Sea Brent on the IPE over the last 10 bars on the chart. Another variation on the correlation study is the following CORREL(@,SP,10) which correlates any symbol on the chart with the S&P Index over the last 10 bars.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.
- **Period:** Enter a number to represent the period (number of bars) for the calculations.

Cos (Cos)

This function is available on the Add Study window and in the Formula Toolbox.

The Cos function takes the selected chart value, converts it into radians and calculates a cosine value. For example, the cosine value of 1090 is .99.

This value is calculated as follows:

$$1090/2\pi = 173.478$$

Calculates the laps around the unit circle.

$$.478 * 2\pi = 3.00894$$

Takes the leftover lap and converts it to radians.

$$\text{Cos} (3.00894) \text{ radians} = .99124775$$

Displays the cosine for the calculated radians.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.

DOM Ask (DomAsk)

This function is available on the Add Study window and in the Formula Toolbox.

The DOM Ask (Depth of Market Ask) represents the lowest price at which someone is willing to sell.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **N**: The place in the queue of the best ask. 1 = best ask; 2 = one level above the best ask; 3= two levels above the best ask, etc.
- **PriceType**: Choose **Single** or **Average**.
- **UpdateRate**: When rate is updated. Choices include: **On_Every_Change**, **0.1_secs**, **0.2_secs**, **0.3_secs**, **0.4_secs**, **0.5_secs**, **1.0_secs**.

DOM Ask Volume (DomAskVo)

This function is available on the Add Study window and in the Formula Toolbox.

The DOM Ask Volume (Depth of Market Ask Volume) represents the number of contracts or shares available at the lowest offering price.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **N**: The place in the queue of the best ask. 1 = best ask; 2 = one level below the best ask; 3= two levels below the best ask, etc.
- **VolType**: Choose **Single** or **Cumulative**.
- **UpdateRate**: Update Rate When rate is updated. Choices include:
On_Every_Change, **0.1_secs**, **0.2_secs**, **0.3_secs**, **0.4_secs**, **0.5_secs**, **1.0_secs**.

DOM Bid (DomBid)

This function is available on the Add Study window and in the Formula Toolbox.

The DOM Bid (Depth of Market Bid) represents the highest price at which someone is willing to buy.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **N**: The place in the queue of the best bid. 1 = best bid; 2 = one level below the best bid; 3 = two levels below the best bid, etc.
- **PriceType**: Choose **Single** or **Average**.
- **UpdateRate**: Update Rate When rate is updated. Choices include:
On_Every_Change, **0.1_secs**, **0.2_secs**, **0.3_secs**, **0.4_secs**, **0.5_secs**, **1.0_secs**.

DOM Bid Volume (DomBidVo)

This function is available on the Add Study window and in the Formula Toolbox.

The DOM Bid Volume (Depth of Market Bid Volume) represents the number of contracts or shares available at the highest price someone is willing to buy at.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **N**: The place in the queue of the best bid. 1 = best bid; 2 = one level below the best bid; 3 = two levels below the best bid, etc.
- **VolType**: Choose **Single** or **Cumulative**.
- **UpdateRate**: Update Rate When rate is updated. Choices include: **On_Every_Change**, **0.1_secs**, **0.2_secs**, **0.3_secs**, **0.4_secs**, **0.5_secs**, **1.0_secs**.

Event Offset (Event Offset)

This function can be accessed only in the Toolbox.

The Event Offset function counts the number of bars since a user-specified event occurred and reports the negative of that number or zero if the event occurred on the selected bar.

Setup parameters:

- **NEvents:** Allows the user to specify an occurrence number other than one before the count begins.
- **Max Bars To Search:** Selects the maximum number of bars to cover.

Exponential (Exp)

This function is available on the Add Study window and in the Formula Toolbox.

The Exponential function raises "e" (approximately 2.71) to the chart value. For example, if the chart value were 0, the study would show a value of 1. Because these numbers can get big very quickly, CQG uses exponential notation to represent these numbers. Additionally, the biggest number that can be accommodated is e232.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.
- [OB/OS](#)

Floor (Floor)

This function is available on the Add Study window and in the Formula Toolbox.

The Floor function rounds the chart value down to the next lowest integer.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.
- [OB/OS](#)

Happened Within (HappenedWithin)

This function can be accessed only in the Toolbox.

The Happened Within function returns a value of true if the designated event happened within the specified number of bars. In the Setup Parameters window users can specify whether every occurrence of the event will be included in the evaluation or only every 2nd, 3rd, 4th, etc. occurrence of the event.

Setup parameters:

- **BarCount:** Specifies the number of bars the function will use to determine whether the event is true or false.
- **NEvents:** Allows the user to specify whether every occurrence of the event will trigger a true or only every 2nd, 3rd, 4th, etc.

Has Value (HasVal)

This function is available on the Add Study window and in the Formula Toolbox.

The Has Value function displays a 1 if a value exists for the selected time or a 0 if no value exists for the chosen bar.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.

High Low First (HiLo1)

This function is available on the Add Study window and in the Formula Toolbox.

The High Low First function displays a 1 if the high for the bar occurred before the low, a - 1 if the low occurred prior to the high and a 0 if less than 2 ticks have occurred.

Setup parameters:

- [Display](#)
- [MarkIt](#)

Label (Label)

This function is available on the Add Study window and in the Formula Toolbox.

The Label function allows you to pick a value for an instrument and use that instrument value in another formula. Unlike using bar values, which change for each time period, the selected label value is used throughout the entire time range of the chart.

The values you can use in this function are the Current Values that appear as column headers in the Quote Spreadsheet or Custom QuoteBoard.

The only parameter is label, which allows you to select the value used for the label function, including various volume, price, Greeks, volatility, and date options as well as CQG IC serial/system number. For example:

MA(@,Exp,5) XABOVE MA(@,Exp,13)

AND

RSI(@,5) >= 50

when

(Label(@,SerialNumber) = 103545

Or

Label(@,SerialNumber) = 102985)

Level (Level)

This function is available on the Add Study window and in the Formula Toolbox.

The Level function plots two lines, which identify the highest and lowest levels attained over a defined period. The methodology of the Level study allows the user to track one value, such as an average, and output another, such as the high, from the same bar.

Characteristics & Usage

Level is an overlay study, which may be used to define a trading range as these points are expected to provide support and resistance.

A move above or below the Level values may be considered a breakout from the trading range.

The Level study can be used as an effective measure of the strength of the bid or offer. Tracking the highest low serves as a measure of the bid and the lowest high serves as a measure of the offer.

The ability of Level to track one price while outputting either the same or a different price value allows the user to identify many different combinations.

Level is similar to the Channel study. The principal differences are:

Level is a far more flexible study, enabling the user to select the value to be tracked and different outputs.

Level identifies the highest and lowest Levels including the current bar, whereas Channel looks only over the preceding bars.

Calculation

HiLevel = Price of Bar with Highest Level over Period.

LoLevel = Price of Bar with Lowest Level over Period.

Setup parameters:

- **Price:** The reference Price returned when Level makes a new high/low over the specified Period.
- **Level:** The Level which is tracked to identify the highest or lowest value during the specified period.
- **Period:** The number of bars over which Level identifies the highest and lowest values.

Maximum

This function can be accessed only in the Toolbox.

Maximum(@,@) returns the greater value of 2 inputs. For example, Maximum(5,10) will return 10.

Maximum can be nested to return the maximum of a series. Maximum(@,Maximum(@,Maximum(@,@))) returns the maximum value of 4 inputs.

The @ may be replaced with: studies, conditions, functions, or user values to return the maximum comparative value.

Maximum does not have setup parameters.

Maximum Over Period (MaxPrd)

This function is available on the Add Study window and in the Formula Toolbox.

MaxPrd returns the maximum value of an expression looking back over a specific number of bars. The unique value of MaxPrd the number of bars in the look back is determined by a condition being met.

For example: **MaxPrd(High(@),BarsSince (MA1(@,9) Xabove MA2(@,18))** returns to highest value traded since the first moving average crossed above the second moving average.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.
- **Period:** Number of bars used in the calculation.

Maximum Since (MaxSince)

This function is available on the Add Study window and in the Formula Toolbox.

Maximum Since returns the maximum value of a Price (High, Low, and so on) that is specified in parameters and has occurred since the condition specified in parameters was true.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.
- **Condition:** Select a pre-defined condition from the drop-down list.

Mean Deviation (MnDev)

This function is available on the Add Study window and in the Formula Toolbox.

Mean deviation is the mean of the distribution between the close and the mean of the closes over the number of bars the user enters. For example: the mean deviation returns $1/N$ times the sum of the absolute value of the close minus the average of the closes over the user selected number of bars.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.
- **Period:** Number of bars used in the calculation.

Median (Median)

This function is available on the Add Study window and in the Formula Toolbox.

The Median function returns the median of the user-selected numbers. The median is the number in the middle of a set of numbers; that is, half the numbers have values that are greater than the median, and half have values that are less, or it is the average of the two middle numbers in the set.

Example: The median calculation for September 7th ends with the data for September 7th and goes back 2 additional periods for the 3-period calculation.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.
- **Period:** Number of bars used in the calculation.

Minimum

This function can be accessed only in the Toolbox.

Minimum(@,@)returns the lesser value of 2 inputs. For example, Minimum(5,10) will return 5.

Minimum can be nested to return the minimum of a series. Minimum(@, Minimum(@, Minimum(@,@))) returns the minimum value of 4 inputs.

The @ may be replaced with: studies, conditions, functions, or user values to return the minimum comparative value.

This function has no setup parameters.

Minimum Over Period (MinPrd)

This function is available on the Add Study window and in the Formula Toolbox.

MinPrd returns low value of an expression over the look back number of bars. Like MaxPrd the unique value of this functionality is the ability to identify an event as the initialing point of the look back rather than a finite number.

For example: **MinPrd(Low(@),BarSince MACDA(@) XBelow 0)**

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.
- **Period:** Number of bars used in the calculation.

Minimum Since (MinSince)

This function is available on the Add Study window and in the Formula Toolbox.

Minimum Since returns the minimum value of a price (High, Low, and so on) that is specified in parameters and has occurred since the condition specified in parameters was true.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.
- **Period:** Number of bars used in the calculation.

Minutes Since Bar Opened (MinSinceBarOp)

This function is available on the Add Study window and in the Formula Toolbox.

The Minutes Since Bar Opened function shows the number of minutes after the bar opened that the selected tick occurred.

There are no parameters for this function.

Minutes After Session Open (MinutesAfterSessionOpen)

This function can be accessed only in the Toolbox.

The minutes after session open shows the number of minutes after the session opened that the selected tick occurred.

There are no parameters for this function.

Minutes Before Session Close (MinutesBeforeSessionClose)

This function can be accessed only in the Toolbox.

The minutes before session close shows the number of minutes before the session closed that the selected tick occurred.

There are no parameters for this function.

Modulus

This function can be accessed only in the Toolbox.

Modulus returns the remainder after division.

In mathematics, the remainder is the amount "left over" after division. For example, the remainder of $10 / 4$ is 2, because 4 goes into ten twice with two left over. You'll see this written as $10 / 4 = 2 \text{ r } 2$, the 'r' standing for remainder.

Format: `Modulus(@,@)`

For example:

`Modulus(10,4)`

$10 / 4 = 2$ with a remainder of 2

Modulus returns 2

This function does not have setup parameters.

Native Currency to Price (D2P)

This function is available on the Add Study window and in the Formula Toolbox.

Native Currency to Price converts US Dollars to price units. There are two forms:

- Dollar2Price(X) converts X to price units using the current's contract for the price scale.
For example: **Low(@) -Dollar2Price(2000)** returns a price line equivalent to \$2000 under the low of the bar or 2000 ticks.
- Dollar2Price(y,x) converts X to price units, using y for the price scale.
For example: **Low(@)-Dollar2Price(SP,2000)** will return a price line \$2000 under the low using SP price scale. This would translate into 800 ticks under the low.

The only setup parameter is price, the price used for calculations.

Natural Log (Log)

This function is available on the Add Study window and in the Formula Toolbox.

Displays the natural log of chart values.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.
- [OB/OS](#)

Net Change

This function is available only in the Formula Toolbox.

Net change is the difference between today's current price and the settlement price.

There are no setup parameters for net change.

Peak (Peak)

This function is available on the Add Study window and in the Formula Toolbox.

The Hi/Lo Peak study identifies important highs and lows based on the number of bars, both to the left and to the right (before and after), which have lower highs to identify a Hi Peak or higher lows to identify a Lo Peak. Hi/Lo Peak identifies extreme price points of the same magnitude, based on the surrounding price action.

Characteristics & Usage

Hi/Lo Peak provides a method to consistently identify extreme price points of the same magnitude.

Hi/Lo Peak is an effective tool to identify important support and resistance levels based on recent price extremes.

The Hi/Lo Peak lines may be used to define a trading range.

The Lo Peak line identifies the price that attracted a bid and the Hi Peak line identifies the price level that attracted an offer.

A break above or below a Peak line may be considered a breakout of the trading range.

Hi/Lo Peak may also be used in a trend following manner.

A bull trend is indicated when price action persists above the Hi Peak.

An upward adjustment of the Hi Peak indicates the trend has terminated (this is due to the fact that Hi Peak will only adjust upward once lower highs follow an extreme high, indicating the bulls have been unable to bid prices beyond the highs for several bars).

The opposite holds for using Lo Peak to identify a bear trend and its termination.

When the Min/Max parameter is **On**, Hi/Lo Peak may be used to track the maximum and minimum values dependent on the Reset parameters. Reset parameters are employed so that Hi/Lo Peak will continue to be a responsive indicator, rather than simply identifying the highest and lowest points on a chart.

Calculation

Hi Peak = Highest Price with LLev (number) of lower highs preceding the Hi Peak and RLev (number) of lower highs following it.

Lo Peak = Lowest Price with LLev (number) of higher lows preceding the Lo Peak and RLev (number) of higher lows following it.

For variations see Parameters for Peak.

Setup parameters:

- [Display](#)
- **Price:** The reference price. Optional settings include: Open, High, Low, Close, Mid-pt, HLC/3, Average, True High, True Low, Range, True Range, or Peak may reference Conditions.
- **LLev:** Determines the number of bars to the left of the Hi/Lo peak which must have a lower Hi/higher Lo.

- **RLev:** Determines the number of bars to the right of the Hi/Lo peak which must have a lower Hi/higher Lo.
- **Offset:** Determines the number of bars to offset the PEAK Hi/Lo lines.
- **Resets:** Access to the 2nd window of the PEAK setup to activate Max/Min levels.

Color and Weight

MarkIt

Display: Line, Histogram, or Dash

ShareScale

Min/Max: Off -PEAK lines will move up or down in accordance with the parameters set above. Hi: On -PEAK will track the Price higher, identifying each higher PEAK. Hi PEAK will maintain its maximum value until the Reset parameters force PEAK to accept a lower value, in accordance with the parameters below. Price falls below the Threshold and crosses back above the Threshold value at which point Hi PEAK will reset to the Threshold level. Lo: On -PEAK will track the Price lower identifying each lower PEAK. Lo PEAK will maintain its minimum value until the Reset parameters force PEAK to accept a higher value, in accordance with the parameters below. Price rises above the Threshold and crosses back below the Threshold value at which point Lo PEAK will reset to the Threshold level.

Reset: \leq or \geq -The Threshold level will serve as a Minimum/Maximum value which PEAK will take. Above this level Hi PEAK will identify extreme Prices as specified above, while Lo PEAK will identify extreme Prices below the Threshold level. XA/XB -When the selected Price crosses above/below the Threshold PEAK will revert to the Threshold value and once again begin to track extreme Price values. Trig -- Activates the Reset Trigger as a method to force Hi PEAK to accept a lower value and Lo PEAK to accept a higher value.

Reset Trigger: The selected condition (see Conditions) serves as the Trigger for PEAK to assume the value of Price when the condition is true. The Reset Trig forces Hi PEAK to accept a lower value than the maximum while forcing the Lo PEAK to accept higher values.

Threshold: Threshold serves as a minimum value for Hi PEAK and a maximum value for Lo PEAK when either \leq/\geq is selected or when XA/XB is selected and Price has broken the Threshold. Once Hi/Lo PEAK crosses below/above the Threshold, PEAK will no longer respond to price action, until Price remains beyond the threshold for the total number of bars of LLev and RLev summed together (i.e. using the defaults, the price must remain beyond the Threshold for 3 days to be detected).

Power (Pwr)

This function is available on the Add Study window and in the Formula Toolbox.

This function takes the selected prices from a chart and raises them to a user-selected power.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.
- **ythPower:** Power used to apply to the chart value.
- [OB/OS](#)

Price to Native Currency (P2D)

This function is available on the Add Study window and in the Formula Toolbox.

Price to Native Currency converts price units to US dollars.

There are two forms:

- `Price2Dollar(X)` converts X to dollars using the current contract scale.
For example: **`Price2Dollar(High(@)-Low(@))`** returns the range of the bar in dollars.
- `Price2Dollar(y,x)` converts X to dollars using a specific price scale (Y) different than the one on the chart.
For example: **`Price2Dollar(SP,High(@)-Low(@))`** if applied to a NASDAQ (ND) chart, will return the price of the trading range of the NASDAQ futures bar using the SP price scale.

Setup parameters:

The only parameter is **price**, the price used for calculations.

Round (Round)

This function is available on the Add Study window and in the Formula Toolbox.

The Round function takes a chart value and rounds it to the nearest integer value. Values greater than or equal to .5 round up to the next highest integer, and values less than .5 round down to the next lowest integer.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.
- [OB/OS](#)

Sample (Samp)

This function is available on the Add Study window and in the Formula Toolbox.

Sample identifies a price value when a user specified condition is met. This study evaluates a condition on a True/False basis and returns the desired Input value when the condition changes from False to True or remains True, depending on parameter settings.

Sample is an effective tool for identifying support and resistance points defined by the occurrence of a specific condition.

An example is to use High as the input on a downside reversal day. The Sample parameters would be set as following:

Price = High

Capture = At Edge

Hold = On

Condition = Higher High than prior bar and a close down.

Sample may be used to assist in the development of a trading system, since it enables the user to identify specific events and analyze the market behavior following such an event.

Sample is similar to an If function.

Both functions return a Price or User value when a defined condition occurs.

Sample provides the user with greater flexibility to select or hold a specific value, based on the selected parameter settings.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.
- **Capture:** At Edge - The value returned will only change when the condition goes from False to True. The resulting Sample will be displayed as a horizontal line which shifts levels as the condition changes from False to True. When True - The value returned will change on each observation for which the condition is True. If the input parameter is set to a price, the Sample will follow the market up or down while the condition is True and will be a horizontal line when the condition is False.
- **Hold:** On - After a value has been found, that value is returned for all following bars until the condition becomes True again following a False state, at which time a new value is displayed. Off - A value will be returned when the condition is true.
- **Condition:** The name for the condition which is evaluated for a "True" state to determine when to take a sample.

Condition (1)	Condition	Input	Sample	Hold	Value
FALSE	TRUE	LOW	At Edge	On	Low
TRUE	TRUE	LOW	At Edge	On	Low of initial TRUE

	FALSE	LOW	At Edge	On	Last Low w/TRUE
FALSE	TRUE	LOW	At Edge	Off	Low
TRUE	TRUE	LOW	At Edge	Off	None
	FALSE	LOW	At Edge	Off	None
FALSE	TRUE	LOW	When True	On	Low
TRUE	TRUE	LOW	When True	On	Low
	FALSE	LOW	When True	On	Last Low w/TRUE
FALSE	TRUE	LOW	When True	Off	Low
TRUE	TRUE	LOW	When True	Off	None
	FALSE	LOW	When True	Off	None

Seconds Since Bar Opened (SecSinceBarOp)

This function is available on the Add Study window and in the Formula Toolbox.

The Seconds Since Bar Opened function shows the number of seconds after the bar opened that the selected tick occurred.

There are no parameters for this function.

Set/Reset (SetRst)

This function is available on the Add Study window and in the Formula Toolbox.

Set/Reset creates a picture of binary data for you, using two conditions. The first condition is displayed as an uptick on a line graph. The line continues on that level until the second condition is satisfied. Then the line returns to its baseline until the first condition occurs again. On a bar graph, the bars change colors to reflect the set and reset conditions.

For example:

```
mval := MACD(@,13,26);
```

```
diff := mval - MACDA(@,13,26,9);
```

```
SetReset(mval XABOVE 0, diff < diff[-1])
```

In this example on a bar graph, this formula would color bars when MACD crossed above zero and would stop marking the bars when the difference between the MACD and the MACDA turned down.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Condition 1:** Formula that defines the condition to return a positive response.
- **Condition 2:** Formula that defines the condition to end the response started by the first condition.
- **Use Edges:** SetRst(Hour(@)=9,Hour(@)=12) with **Use Edges** will not trip to 1 on a 5-min bar chart until the first bar on which it turns is complete the 9:00 bar. It actually returns 1 or true on the bar immediately following the first condition 9:05, hence the term "use edges." Rather than show true at start of the start condition bar, it waits until the starting condition - start bar is completed. Without **Use Edges**, it will immediately turn to true when the start condition (Hour(@)=9) bar is first formed.

ShareScale (ShrSci)

This function is available on the Add Study window and in the Formula Toolbox.

ShareScale forces a bar value or formula (expression 1) to use the same scale as a bar chart or other value (expression2).

There are two forms for this function:

- **ShareScale(expr1)**: In this form, ShareScale forces expr1 to be displayed using the same units as the chart. For example: **ShareScale(Low(@)-10*TickSize(@))** will ensure the same scale is used for the line that is generated as the bar chart on which it is overlaid.
- **Sharescale(expr1, expr2)**: This forces expr1 to be displayed using the same scaling as expr2.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price**: The price used for the calculations.
- **Use Complete**: Use complete should be used when trying to convert the spread to the sharescaled tick value, such as USA ticks `ShrScale(EP-EMD,USA)`. Note that this parameter does not always change the value of the study. Using `ShrScale(EP-EMD,USA)`, **Use Complete** will fit the EP-EMD into a 32nd scale 423 and 11 32nds. If you don't use complete, it will still be a 32nds scale, but the returning value will be displayed as decimals: 423.344.

Sign (Sign)

This function is available on the Add Study window and in the Formula Toolbox.

The Sign function evaluates chart values as either positive, negative, or zero. On a Sign function chart, a positive value is displayed as a 1, a negative value is displayed as a -1, and a 0 value is displayed as 0.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.

Sin (Sin)

This function is available on the Add Study window and in the Formula Toolbox.

The Sin function takes the selected chart value, converts it into radians and calculates a sine value. For example, the sine value 1090 is .13.

This value is calculated as follows:

$$1090/(2*\pi) = 173.478$$

Calculates the laps around the unit circle.

$$.478 * (2*\pi) = 3.00894$$

Takes the leftover lap and converts it to radians.

$$\text{Sin}(3.00894)\text{radians} = .13226249$$

Displays the sine for the calculated radians.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.

Single Value Propagator (SVP)

This function is available on the Add Study window and in the Formula Toolbox.

The Single Value Propagator enables the user to plot or use in a formula a single value, for example, last bid or last offer. Using the SVP function in a custom study, for example, the user can place a horizontal line to represent the last bid and last offer with the actual market trading in between. This adds the ability to see if the traders are hitting the bids or lifting the offer.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.

Software Version (Version)

This function is available on the Add Study window and in the Formula Toolbox.

The Version function inserts the currently running CQG version number in the form x.xxxx.

Setup parameters:

- [Display](#)
- **Digits:** Number of digits in the version number.

Spread

This function can be accessed only in the Toolbox.

When this function is inserted in the Formula Editor, it is displayed as:

```
/* SPREAD(linear expression, [calculation mode], [tick size], [trade ratio], [BAT filter], [roll-over])
```

Examples:

```
SPREAD(42*HOE-CLE, L1, 0.01, 1:2, T:BA, 1)
```

```
SPREAD(32*(CUS05-FVAH2)-738, , 0.25)
```

```
SPREAD(EP/ENQ) */
```

```
SPREAD(@)
```

You replace @ with your formula.

When this function is applied to, for example, EP-ENQ, it is displayed as:

```
/* SPREAD(linear expression, [calculation mode], [tick size], [trade ratio], [BAT filter], [roll-over])
```

Examples:

```
SPREAD(42*HOE-CLE, L1, 0.01, 1:2, T:BA, 1)
```

```
SPREAD(32*(CUS05-FVAH2)-738, , 0.25)
```

```
SPREAD(EP/ENQ) */
```

```
SPREAD(EP-ENQ, L1, , 1:1)
```

The calculation mode and trading ratio are calculated automatically.

The text between /* and */ is the comment area. This area displays the synthetic spread formula, which you can edit with the specific details of the spread.

Spread trading parameters are opened by clicking the **Trading Execution Patterns** button on the **Define User Formulas** window.

Square Root (Sqrt)

This function is available on the Add Study window and in the Formula Toolbox.

The Square Root function simply calculates the square root of the underlying chart values. Small discrepancies may exist due to post-split rounding by the exchanges.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.
- [OB/OS](#)

Square Root Deviation (SqrtDv)

This function is available on the Add Study window and in the Formula Toolbox.

Square root deviation is the square root of the deviations from a user specified moving average other than a simple moving average (which represents Standard Deviation).

The formula is the same as the [Standard Deviation formula](#) except the moving average can be of any type.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Type:** The type of moving average used for the Average True Range calculations. Choices include: Simple, Smoothed, Exponential, Weighted, and Centered.
- **Period:** The time period for the moving average calculations.
- **Price:** The price used for the calculations.
- [OB/OS](#)

Standard Deviation (StdDev)

This function is available on the Add Study window and in the Formula Toolbox.

Standard Deviation is a statistical measure indicating the variability of the data points. High standard deviations are believed by some analysts to indicate market tops, while the opposite is true for lower Standard Deviations. Calculating the Standard Deviation involves taking the square root of the deviations from a simple moving average.

The following formula describes the Standard Deviation (σ):

$$\sigma = \sqrt{\frac{1}{n} \left\{ \sum_{i=1}^n (m - x_i)^2 \right\}}$$

Sum the square of the difference of each PRICE (x) for the PERIOD (n), and the Simple Moving Average value (m).

Divide the sum by the PERIOD (n).

Calculate the square root of the above result.

Note: Bollinger divides the sum by n, whereas many other references use n – 1.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Period:** The time period for the moving average calculations.
- **Price:** The price used for the calculations.
- [OB/OS](#)
- **Divisor:** N = a standard deviation calculation; N-1 = population standard deviation calculation.

Summation (Sum)

This function is available on the Add Study window and in the Formula Toolbox.

The Summation study adds chart values over a specified period.

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Period:** The time period for the moving average calculations.
- **Price:** The price used for the calculations.
- [OB/OS](#)

Tan (Tan)

This function is available on the Add Study window and in the Formula Toolbox.

The Tan function takes the selected chart value, converts it into radians, and calculates a tangent value. For example, the tangent value of 1090 would be .13. This value is calculated as follows:

$1090/(2*\pi) = 173.478$	Calculates the laps around the unit circle
$.478 * (2*\pi) = 3.00894$	Takes the leftover lap and converts it to radians
$\text{Sin}(3.00894) \text{ radians} = .13226249$	Calculates the sine for the calculated radians
$\text{Cos}(3.00894) \text{ radians} = .99124775$	Calculates the cosine for the calculated radians
$.13226249/.99124775 = .1334$	Divides the sine by the cosine

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.

Tick Size (TSize)

This function is available on the Add Study window and in the Formula Toolbox.

TickSize returns the size of the minimum price units.

For example, **High(@) + 10*TickSize(@)** returns a line ten ticks above the high of each bar.

TickSize can be used to create a channel line above and/or below a bar or candlestick chart. TickSize can also be used to define a specific price level in conditions, user formulas or trade systems.

Setup parameters:

- [Display](#)
- [MarkIt](#)

Time (Time)

This function is available on the Add Study window and in the Formula Toolbox.

The Time study plots the value of a point in time, allowing users to include these values in user formulas. The study plots the following:

- Year
- Month: 1 for January, 2 for February, 3 for March, etc.
- Day
- Hour
- Minute
- Day of Week
- Week
- Day of Year

Local versions, e.g. Local Year and Local Day of Week, are available in the Formula Toolbox.

DayofWeek(@) returns 1 for Monday, 2 for Tuesday, 3 for Wednesday, 4 for Thursday, 5 for Friday, 6 for Saturday, and 7 for Sunday.

It uses the start time of the bar for its calculation.

For example, for Monday's daily bar it returns 7 (Sunday) because the bar actually starts at Sunday 15:30.

LocalDayofWeek(@) returns 1 for Monday, 2 for Tuesday, 3 for Wednesday, 4 for Thursday, 5 for Friday, 6 for Saturday, and 7 for Sunday.

It uses the time from the chart's horizontal scale for its calculation and is sensitive to Time preferences.

For a daily bar it returns the day of the week for that day.

DOW(@) returns 1 for Sunday, 2 for Monday, 3 for Tuesday, 4 for Wednesday, 5 for Thursday, 6 for Friday, and 7 for Saturday.

For intraday, it uses the start time of the bar for its calculation, the same as Day of Week (DayofWeek).

For daily and above, it uses the trading date for its calculation. For example, for Monday's daily bar it returns 2 (Monday).

Setup parameters:

- [Display and ShareScale](#)
- **Digits:** The number of digits displayed after the decimal point.
- **Use Local Time:** Overrides any other time setting, so that local time is used.

Time Average (TimAvg)

This function is available on the Add Study window and in the Formula Toolbox.

Calculates the average for values taken at the same time of day (typically BarIX).

Setup parameters:

- [Display](#)
- [MarkIt](#)
- **Price:** The price used for the calculations.
- **Checkup:** Choices include: Close, Open, High Low, Mid, HLC3, Average, TrueHigh, TrueLow, Range, TrueRange, TickVol, Vol, CurrentOpen, CurrentHigh, CurrentLow, Last, CurrentVol, CurrentTickVol, BestBid, BestBidVol, BestAsk, BestAskVol.
- **Period:** The time period for the moving average calculations.
- **Extra Steps:** A look back maximum period that the formula will try to compute. If you were to create, for example, a 1001 period variable, but the steps only went back 1000 the calculation wouldn't work.

Time Compare (TCmp)

This function is available on the Add Study window and in the Formula Toolbox.

The Time Compare function compares a user-selected time (for intraday bars) or date (for daily or longer bars) to the time or date where the vertical cursor is positioned. The study reports values for six possibilities. It returns a 1 if the choice is true and a zero if it is false. The six possibilities are:

- **Time EQ:** The time represented by the vertical cursor position is the same as the user-selected time.
- **Time NE:** The time represented by the vertical cursor position is not the same as the user-selected time.
- **Time GT:** The time represented by the vertical cursor position is later than the user-selected time.
- **Time GE:** The time represented by the vertical cursor position is later or the same as the user-selected time.
- **Time LT:** The time represented by the vertical cursor position is earlier than the user-selected time.
- **Time LE:** The time represented by the vertical cursor position is earlier or the same as the user-selected time.

Setup parameters:

- [Display](#)
- **Date:** Selects the date for the comparison for daily or longer bars.
- **Time:** Selects the time for the comparison for bars shorter than daily.

Trace Expression (TRACE)

This function can be accessed only in the Toolbox.

The Trace function works as a kind of brace used by the formula tracer. It allows you to create additional nodes for values within a formula. The function does not affect the behavior of an expression when it is not traced.

For example, for the formula **MA(smth) + ATR(smth) -Close(@)** formula tracer will create a node for each of the studies used in the expression.

But if you want to see the value of **MA(smth) + ATR(smth)** rather than calculate it from node values, you may recompose the expression as **Trace(MA(smth) +ATR(smth)) - Close(@)**.

In this case formula tracer will create an additional node for the result of **MA(smth) + ATR(smth)**.

There are no parameters for this function.

Truncate Display

This function can be accessed only in the Toolbox.

This formula restricts the display of a study by n bars. It works backward from the most recent bar.

For example, `TrncDsp(MA(@,Sim,21),10)` would display only the last 10 values of a 21-period moving average. The average is still calculated using 21 periods; only the display is affected.

The only parameter for this function is trailing bars, the value 10 in the example above.

Yield Value

This function can be accessed only in the Toolbox.

It calculates the yield value for a contract, provided that contract has yield specified.

You can apply this function to a contract or to a spread strategy. For example:

- `Yield(TYA)`
- `Yield(SPREAD(TYA-USA, , 0.001, 1:2, , 1))`
- `SPREAD(Yield(TYA)-YIELD(BTC10), , 0.001, 10:1, , 1)`

Trading System Functions

Bars Since Entry

This function counts the number of bars since the entry signal was generated.

Bars Since Entry Parameters

Parameter	Description
Entry Offset	Allows you to specify which event will start the count: Zero = Last Event One = Second-to-Last Event Two = Third-to-Last Event
Entry Type	Specifies the type of entry to apply the trading system function to. Choices include: All Entries, Open Entries, Closed Entries or Oldest Open Entry.
Which Trades	Specifies the type of trades that will cause the count to begin. Choices include: All Trades, Long Trades, Short Trades or This Trade Only.

Bars Since Exit

This function counts the number of bars since the exit signal was generated.

Bars Since Exit Parameters

Parameter	Description
Entry Offset	Allows you to specify which event will start the count: Zero = Last Event One = Second-to-Last Event Two = Third-to-Last Event
Which Trades	Specifies the type of trades that will cause the count to begin. Choices include: All Trades, Long Trades, Short Trades or This Trade Only.

Bars Since Start

This function counts the number of bars since the beginning of the Trading System's time range.

There are no parameters for this function.

Closed Entry Count

Closed entry count represents the number of the entries that have been closed.

Closed Entry Count Parameters

Parameter	Description
Info	Accesses Help for the Closing Entry Count function.
Which Trades	Specifies the type of trades that will cause the count to begin Choices include: This Trade Only, Long Trades, Short Trades or All Trades.

Entry Price

The Entry Price function reports the price of the last entry accounting for the user-selected parameters.

Entry Price Parameters

Parameter	Description
Entry Offset	Allows you to specify which event will start the count: Zero = Last Event One = Second-to-Last Event Two = Third-to-Last Event
Entry Type	Specifies the type of entry to apply the trading system function to. Choices include: All Entries, Open Entries, Closed Entries or Oldest Open Entry.
Which Trades	Specifies the type of trades that will cause the count to begin. Choices include: All Trades, Long Trades, Short Trades or This Trade Only.

Entry Profit

The **Entry Profit** function measures the profit or loss (in dollars) of the selected entry.

Entry Profit Parameters

Parameter	Description
Entry Offset	Allows you to specify which event will start the count: Zero = Last Event One = Second-to-Last Event Two = Third-to-Last Event
Entry Type	Specifies the type of entry to apply the trading system function to. Choices include: All Entries, Open Entries, Closed Entries or Oldest Open Entry.
Which Trades	Specifies the type of trades that will cause the count to begin. Choices include: All Trades, Long Trades, Short Trades or This Trade Only.

Entry Quantity

The **Entry Quantity** function adds all the initial open position quantities (before any trades have been closed) of the selected trade type (from the Parameters for... window). Long positions are added, while short positions are subtracted from the total.

Entry Quantity Parameters

Parameter	Description
Which Trades	Specifies the type of trades that will cause the count to begin. Choices include: All Trades, Long Trades, Short Trades or This Trade Only.

Exit Price

The **Exit Price** function reports the price of the selected trade at the time of the exit indicated by the Entry Offset. If the Entry Offset is set to zero, the Exit Price will return the price of the trade at its last exit. If set to one, it returns the price at the second-to-last exit of this trade, and if set to two, it returns the Exit Price for the third-to-last exit of this trade.

Exit Price Parameters

Parameter	Description
Entry Offset	Allows you to specify which event will start the count: Zero = Last Event One = Second-to-Last Event Two = Third-to-Last Event
Which Trades	Specifies the type of trades that will cause the count to begin. Choices include: All Trades, Long Trades, Short Trades or This Trade Only.

In Trade

If in your trading system, you have designated a trade as T1, then you can designate T1 as In Trade, which means you have an open position for that trade in your trading system.

In Trade Parameters

Parameter	Description
Which Trades	Specifies the type of trades that will cause the count to begin. Choices include: All Trades, Long Trades, Short Trades or This Trade Only.

Not In Trade

If in your trading system, you have designated a trade as T1, then you can designate T1 as Not In Trade, which means you do not have a position for that trade in your trading system.

Not In Trade Parameters

Parameter	Description
Which Trades	Specifies the type of trades that will cause the count to begin. Choices include: All Trades, Long Trades, Short Trades or This Trade Only.

Open Entry Count

The open entry count study tabulates the number of entries that have not been exited.

Open Entry Count Parameters

Parameter	Description
Which Trades	Specifies the type of trades that will cause the count to begin. Choices include: All Trades, Long Trades, Short Trades or This Trade Only.

Open Position Average Entry Price

Calculates the Average entry price for all currently open positions of the selected Which Trades type.

Open Position Average Entry Price Parameters

Parameter	Description
Which Trades	Specifies the type of trades that will cause the count to begin. Choices include: All Trades, Long Trades, Short Trades or This Trade Only.

Open Position Entry Quantity

The **Open Position Entry Quantity** function adds all the initial open position quantities (before any trades have been closed) of the selected trade type (from the **Parameters for...** window). Long positions are added, while short positions are subtracted from the total.

Open Position Entry Quantity Parameters

Parameter	Description
Which Trades	Specifies the type of trades that will cause the count to begin. Choices include: All Trades, Long Trades, Short Trades or This Trade Only.

Open Position Profit

The **Open Position Profit** function takes the profit of all the trades not filtered out via the Which Trades parameter and adds them together.

Open Position Profit Parameters

Parameter	Description
Which Trades	Specifies the type of trades that will cause the count to begin. Choices include: All Trades, Long Trades, Short Trades or This Trade Only.

Open Position Quantity

The **Open Position Entry Quantity** function adds all the open positions of the selected trade type (from the Parameters for window). Long positions are added while short positions are subtracted from the total.

Open Position Quantity Parameters

Parameter	Description
Which Trades	Specifies the type of trades that will cause the count to begin. Choices include: All Trades, Long Trades, Short Trades or This Trade Only.

OptimalF

The OptimalF study implements R. Vince's method for calculating the optimal quantity of contracts to bet on. This study can be used in "Quantity" expressions for Entry or Exit definition in Trade Systems.

Mathematics:

$$F_{opt} = ((b + 1) * p - 1) \div b$$

Where:

b = win/lose ratio per contract

p = probability of win per contract

$$F\$ = abs(biggest\ loss\ per\ contract) \div F_{opt}$$

$$NtoTrade = int(account\ equity \div F\$)$$

Note: The account equity here isn't constant and depends on previous trades results.

OptimalF Parameters

Parameter	Description
startAE	The Start Account Equity, or initial amount of money (in symbol currency). For example, for U.S.-traded instruments, this would be dollars).
tradesReq	The number of trades required to assure that the results obtained are good. TradesReq always uses the true entry count, not the number of contracts traded, since a Trade System could be set to be by contract or share. It is recommended that this value be set at 30 or more.
defF	The value to return while the trade count is less than TradesReq.
Which Trades	Specifies the type of trades which will cause the count to begin Choices include: All Trades, Long Trades, Short Trades, or This Trade Only.
Closed Trades Only checkbox	If selected, the calculations will use only closed trades.

XTS - External Trading System

The External Trading System study allows you to graph and analyze the trades generated by a trading system.

Setting up and displaying an External Trading System involves only three steps:

1. Creating and saving a text file with buys and sells.
2. Specifying the file path in the **Setup Study Parameters** window.
3. Specifying the desired parameters.

Creating the Text File

You can use any program, such as Word or Notepad, to create the text file. The text file must have:

- A trade index number so buys and sells can be matched. Please note that index values must be between one and ten. An index that is less than one is counted as one, and an index that is greater than ten is counted as ten.
- A date in the form yymmdd for daily or interday or yymmddhhmm for intraday.
- An action specifier, either buy or sell.
- A price specifier, either O, H, L, C or a numeric value.
- A trade size.

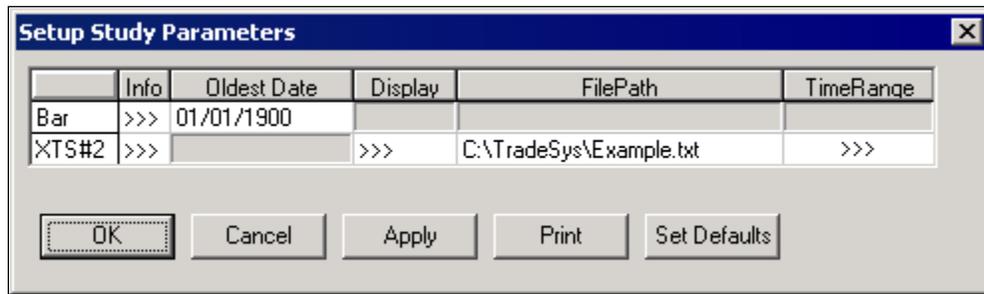
Interday text file example:

```
1 011010 Buy Open 100
2 011017 Sell Open 100
2 011022 Buy Close 100
1 011026 Sell Close 100
```

Intraday text file example:

```
1 0110101115 Buy Open 100
2 0110171120 Sell Open 100
2 0110221125 Buy Close 100
1 0110261130 Sell Close 100
```

Specifying the File Path



In the **File Path** section of the **Setup Study Parameters** window, enter the exact path where the XTS data can be found as shown above.

Indicating the Parameters

The parameters for an External Trading System are accessed via 5 separate windows.

General Parameters for External Trading System

The Parameters here are nearly the same as those in **Trade System.doc**.

Parameter	Description
Display>>>	Accesses the display parameters for the XTS study.
File Path	Allows users to type the path where the XTS data can be found.
Time Range>>>	Accesses the <i>Define Bar Range</i> dialog, allowing you to enter the bar range for the data.

Display Parameters for External Trading System

Display Part	Function
Profit	Sets the colors for the total and closed profit lines.
Loss	Sets the colors for the total and closed loss lines.
Weight	Sets the thicknesses for the total and closed display lines.
Draw	Sets the elements that will appear in the display. Choices include: <i>Lines and Arrows</i> , <i>Arrows only</i> , <i>Lines only</i> , or <i>None</i> .
Display	Sets the form for the total and closed displays. Choices include: <i>Line</i> or <i>Histogram</i> .
Trades>>>	Accesses a second color dialog to select the colors for the trades in the system. (The arrows and the circles in the top pane).
Stats>>>	Accesses another dialog allowing you to select which statistics to display.

Time Range Parameters for External Trading System

Define Bar Range

From

1000 Bars Back

11/14/2001 15:21

1 Days Back

To

Current

11/14/2001 15:21

Not to exceed

2000 Bars

OK

Cancel

Trades Parameters for External Trading System

Display Part	Function
Color	Sets the colors for the buy and sell indicators.
Weight 1	Sets the thicknesses for the horizontal line indicating a position is still open.
Weight 2	Sets the thickness for the exit indicator display element.

Stats for External Trading System

Display Part	Function
Total Trade Count	The total number of buys and sells indicated by the system.
Open Trade Count	The number of trades not yet closed.
Percent Long	The percentage of the total trades that were long trades.
Average Duration	The average number of bars a trade is held.
Average Profit	Average gain for all trades.
Average Win	Average gain for all winning trades.
Average Loss	Average loss for all losing trades.
Maximum Win	The biggest winning trade.
Maximum Loss	The biggest losing trade.
Max Closed Draw	The biggest amount lost for any string of losing trades.
Max Draw Amount	The largest loss in equity during any time, i.e., the amount needed to trade the system.
Max Draw Duration	The largest number of bars from a peak to a trough
Max Consec Losers	The largest number of consecutive losing trades.
Profit to Max Draw	$(\text{Total Net Profit}) / (\text{Maximum Draw Amount})$.
Profit Loss Ratio	$(\text{Average gain on winning trades}) / (\text{Average loss on losing trades})$.

Display Part	Function
Percent Winners	The percentage of profitable trades.
Remove To Neutral	How many of the most profitable trades would have to be removed to make the total profit zero. (Only relevant for profitable trading systems.)

Market Scan

Market Scan is used to search chart data for specific conditions that you feel might help determine market entry or exit points.

The market scan can quickly apply these conditions to a portfolio and display the results.

Market Scan -- 032509_US_Futures_Stoch

Search on portfolio: cqq.US.Futures.Aug.08

Shown: Rows 35 Errors 24 Evaluated: 70 of 70

Instrument	cqq.StochFalling	cqq.StochRising
F.US.BP0M9	Fail	Even
F.US.CCE	Error	Error
F.US.CLEK9	Pass	Fail
F.US.CPEK9	Fail	Fail
F.US.CTE	Error	Error
F.US.DFAM9	Fail	Pass
F.US.DXEM9	Fail	Pass
F.US.EDAM0	Even	Fail
F.US.EPM9	Even	Fail
F.US.EU0M9	Even	Fail
F.US.FVAM9	Even	Even
F.US.GLEM9	Even	Fail
F.US.GCEJ9	Fail	Fail
F.US.GFK9	Pass	Fail
F.US.GPBK9	Even	Fail
F.US.HEM9	Even	Fail
F.US.HOEK9	Fail	Even
F.US.JY0M9	Fail	Even
F.US.KCE	Error	Error
F.US.NDAM9	Fail	Pass
F.US.NGEJ9	Pass	Fail
F.US.OJE	Error	Error
F.US.PAEM9	Fail	Pass
US.PLE	Error	Error

Create complex and targeted market scans. Scan your portfolio for triggering conditions. Search for multiple conditions across any set of instruments in multiple time frames. Use your own custom conditions, custom portfolios, and any combination of CQG chart type and interval. With CQG's three-tiered market scan, you have the ability to incorporate Boolean logic into your scans. This powerful tool can be used to create a scan to run, for example, four conditions whereby if all pass, then two additional scans will be run. You could also run a scan to identify entry points, and trade those symbols that move to meet your criteria.

Market scan requires an enablement.

Opening Market Scan

Click the **MScan** button on the toolbar.

If the button is not displayed, then click the **More** button, and then click **Market Scan**.

If the **MScan** button is not already on the application toolbar, you can add it:

1. Click the **Setup** button.
2. Select **Customize Toolbar**.
This displays the **Toolbar Manager** window.
3. Select the >>> button in the **Add/Remove** column in the **Chart, Quote, News...** row.
4. Select **MScan** in the button column.
5. Click the **Close** buttons on the **Customize Application Toolbar and Toolbar Manager** windows.

Market Scan Components

Title bar

The market scan title bar displays either “Not Named” for scans that have not been saved or the name you assigned to the scan when you saved it.



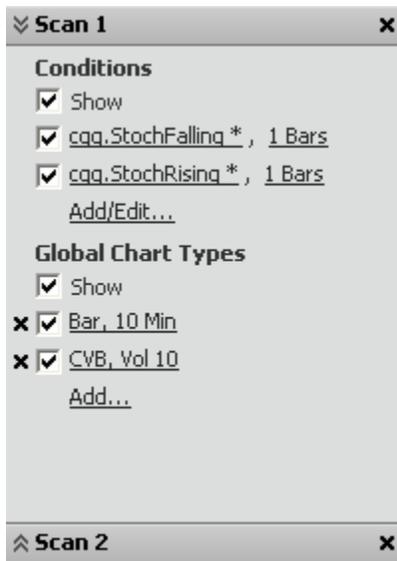
Portfolio field

The **Browse** button is used to find the portfolio you wish to use in the scan. The portfolio that you choose is displayed in the portfolio field.



Scan area

The scan area shows the conditions and chart types that are being used in each scan.



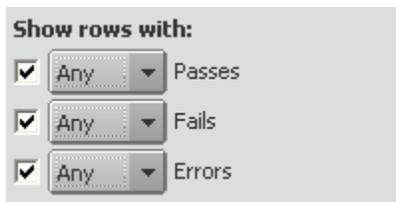
Run buttons

Click the **Run Scan** button to run the selected scan. Click the **Run all scans** button to run all scans in a tiered scan.



Show rows buttons

These buttons control whether any or all pass, fail, and error results are displayed in the results area.



Status area

At the top of the **Market Scan** window, the status of the scan is displayed. The status includes a status bar indicating how far into the list of symbols the scan is and the current symbol being scanned. The **Evaluated** field displays similar information numerically. The number of rows is displayed. The **Errors** link indicates the number of errors so far in the scan. Clicking that link opens the **Error Log** window.



Results area

This area of the window displays the scan results for each chart type. It also has a tab for combined results, which are the results of all chart types together.

Combined	Bar, 10 Min	CVB, Vol 10
	cqg.StochFalling	cqg.StochRising
F.US.BP6M9	Even	Even
F.US.CCE	Error	Error
F.US.CLEK9	Fail	Pass
F.US.CPEK9	Even	Even
F.US.CTE	Error	Error
F.US.DFAM9	Fail	Pass
F.US.DXEM9	Pass	Fail
F.US.EDAM0	Fail	Pass
F.US.EPM9	Even	Even
F.US.EU6M9	Fail	Pass
F.US.FVAM9	Even	Even
F.US.GLEM9	Fail	Pass
F.US.GCEJ9	Even	Fail
F.US.GFK9	Fail	Pass
F.US.GPBK9	Even	Fail
F.US.HEM9	Pass	Fail
F.US.HDEK9	Even	Fail
F.US.JY6M9	Pass	Fail
F.US.KCE	Error	Error
F.US.NDAM9	Fail	Pass
F.US.NGEJ9	Even	Fail
F.US.OJE	Error	Error
F.US.PAEM9	Even	Even
US.PLE	Error	Error

Market Scan Toolbar

The market scan toolbar includes these buttons:

New button

Click this button to open the market scan wizard that walks you through the market scan creation process. See "[To use the wizard to define a market scan](#)" on page 247.

Portfolio button

Click this button to open the **Select/Define Portfolio** window.

Start button

Click this button to run a scan.

Stop button

Click this button to stop a scan.

Resume button

Click this button to resume a scan that you've stopped.

Clear button

Click this button to clear the results of a scan.

Save button

Click this button to open the **Market Scan Save** window that has options to save the scan setup, the setup and results, and the portfolio. See "[To save results](#)" on page 251.

Load button

Click this button to open the **Market Scan Load** window that has options to load a saved scan or saved results. See "[To load a saved market scan](#)" on page 247.

Export button

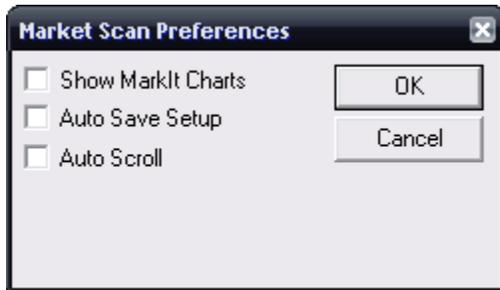
Click this button to open the **Export Market Scan Results** window that has options to export the scan data to an Excel spreadsheet, the clipboard, or an HTML file. You can also set the e-mail option from this window. See "[To export results](#)" on page 250.

Auto Run button

Click this button to open the **Auto Run Market Scan** window to set up automatic scans. See "[Automatically Running a Market Scan](#)" on page 252.

Setting Market Scan Preferences

To access preferences, click the **Setup** button and then click **Market Scan Preferences**. This window opens:



Show MarkIt Charts

When the **Show MarkIt Charts** check box is selected, charts displayed from a Market Scan include the condition markings you have set up.

Auto Save Setup

All Market Scan elements are saved in the private directory associated with your running version of COG. If you select the **Auto Save Setup** check box, every time the Market Scan elements change, those settings are saved automatically to your private directory.

Auto Scroll

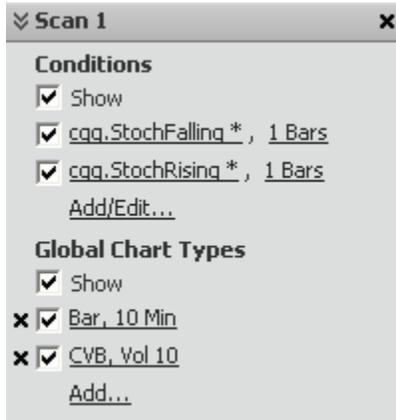
When selected, the **Auto Scroll** feature forces the Market Scan results matrix to continuously scroll as the page is filled. In other words, the most recently scanned issues will be visible. When Auto Scroll is not selected, only the first several issues, enough to fill the allotted Market Scan space, remains displayed throughout the Scan.

Clearing the **Auto Scroll** checkbox improves the speed of the market scan.

Creating a Market Scan

COG offers two types of market scans: standard and tiered.

The standard market scan applies a set of conditions for a particular chart type or chart types to a portfolio (Scan 1).

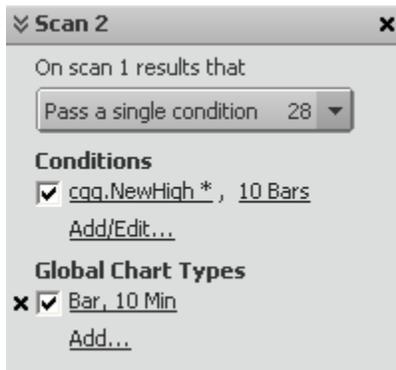


A tiered market scan applies a set of conditions for a particular chart type or chart types to the results of the first scan. You can have up to three scans in a tiered scan.

Scan 1 = standard scan

Scan 1 + 2 = tiered scan

Scan 1 + 2 + 3 = tiered scan



In this example, Scan 1 determines whether any of the symbols in the portfolio meet the Stochastics Falling and Stochastics Rising condition in both a 10-minute bar chart and a constant volume bar chart.

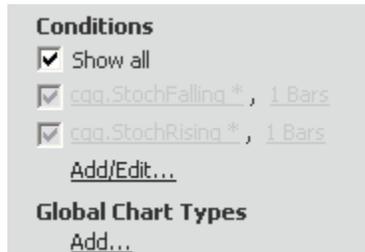
Scan 2 determines which of the symbols that passed one of those conditions have a new high in the last 10 bars on a 10-minute bar chart.

You can include a maximum of 20 conditions in a scan.

Once you have created the scan, you can [run it](#).

To create a standard market scan

1. Click the **Browse** button at the top of the window to select a portfolio.
2. Click the **Add/Edit** link under **Conditions**. Conditions are unavailable if no chart type is listed.



3. On the **Specify Market Scan Conditions** window, choose the conditions you want to apply to the portfolio, then close that window. You can also open this window by clicking a condition name.
4. To change the bars, click the bar link to open the **Define Bar Range** window. Make your changes, and then close that window.
5. Click the **Add** link under **Global Chart Types**.
6. On the **Main Preferences** window, select the **Chart Type** and **Time Interval** for the scan, then close that window.
7. At the bottom of the window, select which rows to show in the scan results.

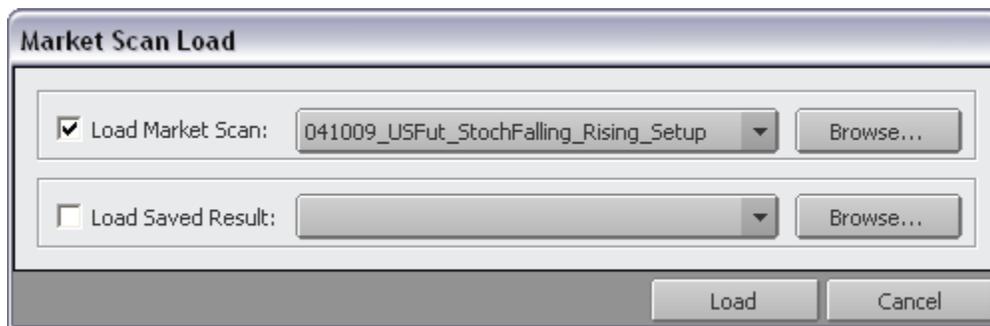
To create a tiered market scan

A tiered market scan adds Scan 2 and Scan 3 (optional) to Scan 1.

1. Follow the steps [to create a standard market scan](#).
2. Click **Scan 2** to open the scan options.
3. Using the menu, select the results from scan 1 that you want to include. For example, you may want to scan all of the results that passed a single condition.
4. Click the **Add/Edit** link under **Conditions**.
5. On the **Specify Market Scan Conditions** window, choose the conditions you want to apply to the portfolio, then close that window. You can also open this window by clicking a condition name.
6. To change the bars, click the bar link to open the **Define Bar Range** window. Make your changes, and then close that window.
7. Click the **Add** link under **Global Chart Types**.
8. On the **Main Preferences** window, select the **Chart Type** and **Time Interval** for the scan, then close that window.
9. At the bottom of the window, select which rows to show in the scan results.

To load a saved market scan

Click the **Load** button. The Market Scan Load window opens.



- To load a previously saved setup, click the **Load Market Scan** check box and select a saved setup using the **Browse** button.
- To load a previously saved setup and result, click the **Load Saved Result** check box and select a saved result using the **Browse** button.

To use the wizard to define a market scan

1. Click the **New** button.
2. Click **Next**.
3. Enter a name for the **Market Scan**.
4. Select a saving option.
5. Click **Next**.
6. Click the **Specify Conditions** button and define the condition.
7. Close that window, and click **Next**.
8. Click the **Specify Portfolio** button and select the portfolio.
9. Close that window, and click **Next**.
10. Click **Finish**.

Running a Market Scan

Once the market scan has been created, click the **Run Scan** button. To run all scans, click the **Run all scans** button.

The status is displayed at the top of the [results](#) area. Results are identified in four ways:

Pass = the symbol meets the condition for those chart parameters

Fail = the symbol does not meet the condition for those chart parameters

Error = the symbol could not be resolved, typically involves symbols that you are not enabled for and delisted symbols

Even = the symbol meets the condition for one set of chart parameters, but does not meet the condition for the other set of chart parameters in the scan (used only for scans with multiple chart types)

F.US.GLEM9	Even	Fail
F.US.GCEJ9	Even	Fail
F.US.GFK9	Pass	
F.US.GPBK9	Even	
F.US.HEM9	Pass	Pass
F.US.HOEK9	Fail	Fail
F.US.JY6M9	Fail	Even

GLEM9: cqq.StochFalling

Bar, 10 Min

CVB, Vol 10

- To stop a market scan, click the **Stop** button.
- To start it again, click the **Resume** button.
- To view errors, click the **Error** link to open the **Error Log**.

Working with Market Scan Results

If you have chosen more than one chart type, then multiple tabs are displayed in the results area.

Combined	Bar, 10 Min	CVB, Vol 10
	cqg.StochFalling	cqg.StochRising
F.US.BP6M9	Even	Fail
F.US.CCE	Error	Error
F.US.CLEK9	Even	Even
F.US.CPEK9	Fail	Even
F.US.CTE	Error	Error
F.US.DFAM9	Pass	Fail
F.US.DXEM9	Even	Fail

In this example, the **Combined** window shows the results of both the Bar and CVB combined. Only one symbol (DFAM9) passed the same condition for both chart types.

Once the results are displayed, you can change that display. You can also make changes to the scan to run it again.

The image shows a configuration window with two main sections: 'Conditions' and 'Global Chart Types'. Annotations with arrows point to specific elements:

- Conditions:**
 - Show all
 - cqg.StochFalling *, 1 Bars (Annotation: Click to change number of bars)
 - cqg.StochRising *, 1 Bars
 - Add/Edit...
- Global Chart Types:**
 - Show all
 - Bar, 10 Min
 - CVB, Vol 10 (Annotation: Click to delete a chart from the list)
 - Add...

Additional annotations on the left side:

- Clear check boxes to remove conditions and charts from the results area (points to the 'Show all' checkboxes in both sections)
- Click to add or change conditions and chart types (points to the 'Add/Edit...' and 'Add...' buttons)

To open a chart from the market scan

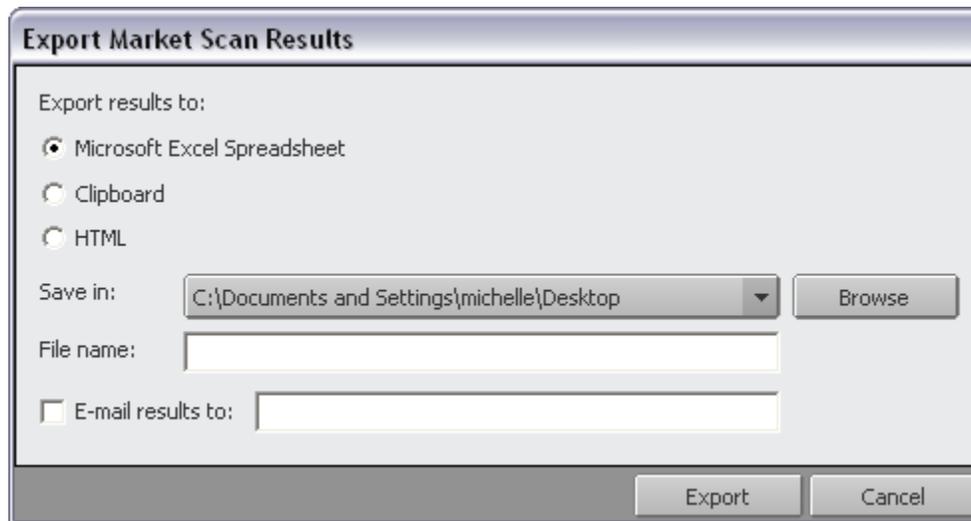
F. US. DFAM9	Fail	Pass
F. US. DXEM9	Pass	Fail
F. US. EDAM0	Pass	Fail
F. US. EPM9	Pass	Fail
F. US. EU6M9	Pass	Fail
F. US. FVAM9	Fail	Fail

1. Hover the mouse anywhere on the row for a particular symbol. Notice the cursor changes to display a chart icon.
2. Click. A chart for that type, interval, and symbol opens.

To export results

It's easy to save scan results to a spreadsheet, the clipboard, or an HTML file.

1. Click the **Export** button on the Market Scan toolbar. The **Export Market Scan Results** window opens.

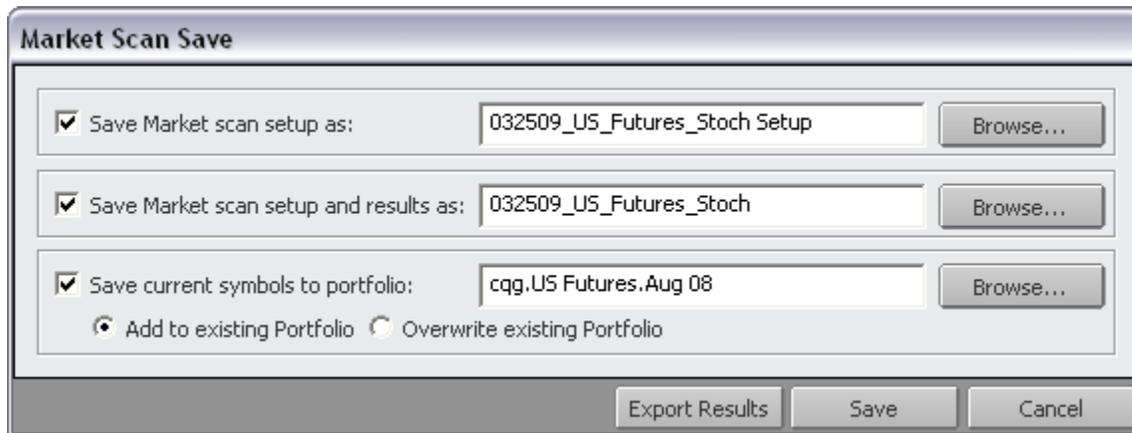


2. Click the button for the type of file to export to.
3. Click the **Browse** button to select the location to save the file to.
4. Enter a file name.
5. To e-mail the results, click the **E-mail** check box and enter an email address.
6. Click **Export**.

The **Market Scan Save** window also has an **Export Results** button.

To save results

Click the **Save** button on the Market Scan toolbar. The **Market Scan Save** window opens.



The screenshot shows the 'Market Scan Save' dialog box. It has a title bar 'Market Scan Save' and three main sections, each with a checked checkbox and a text input field followed by a 'Browse...' button:

- Section 1: Save Market scan setup as: [032509_US_Futures_Stoch Setup] [Browse...]
- Section 2: Save Market scan setup and results as: [032509_US_Futures_Stoch] [Browse...]
- Section 3: Save current symbols to portfolio: [cqq.US Futures.Aug 08] [Browse...]

Below the third section, there are two radio buttons: Add to existing Portfolio and Overwrite existing Portfolio.

At the bottom of the dialog, there are three buttons: 'Export Results', 'Save', and 'Cancel'.

- To save the setup of the scan, click the first check box and enter a name. Click the **Browse** button to show previously saved setups.
- To save the setup and results of the scan, click the second check box and enter a name. Click the **Browse** button to show previously saved setups/scans.
- To edit a portfolio to include the current symbols, click the third check box. Click the **Browse** button to show previously saved portfolios.

Automatically Running a Market Scan

An **Auto Run** is a market scan that is run automatically by the system. You set the parameters, and the system runs the market scan according to those parameters. You can create **Auto Runs** that are generated every minute, every hour, or every day. You can select specific days of the week and specific times. You can specify begin and end dates as well as start and end times.

If a scan run times exceeds twenty minutes, the scan will be stopped and you will receive a warning message.

Only one scan can be run at the same time. If one scan is started while another is active, then it will be postponed until the first scan is complete.

Run time is US Central Time.

Auto Run Market Scan

Auto Run

Make this Auto Run active

Market Scan

Recurrence Days

Daily

Every week(s)

Monday Thursday Sunday

Tuesday Friday

Wednesday Saturday

Recurrence Times

Run @

Run every hours

Run every minutes

Begin and Stop

Begin Date End Date

Start Time End Time

Results

Save results to file

Send EMail

To

From

use e-mail settings

To enter a new Auto Run

1. Click the **Setup** button and then **Auto Run**. The **Auto Run Market Scan** window opens.
2. Enter a name for this Auto Run.
3. Click the **Make this Auto Run active** check box if you want the Auto Run to be in effect as soon as you save it.
4. Select the **Market Scan** that you want to be run automatically.
5. Select the days, times, and duration for the Auto Run.
6. Enter a name for the file in the **Save results to file** field. You must enter a name before you can save the Auto Run.
7. Click **Save**. The file name that is assigned to scan results will consist of the specified name and the time that the scan started.

To edit an existing Auto Run

1. Click the **Setup** button and then **Auto Run**. The **Auto Run Market Scan** window opens.
2. Enter the name of an **Auto Run** or use the drop down.
3. Click the **Open** button. The window will be populated with the parameters for the Auto Run.
4. Make the desired changes.
5. Click **Save**.

To e-mail the results of an Auto Run

Activating e-mail

1. Click the **Setup** button and then **Auto Run**. The **Auto Run Market Scan** window opens.
2. In the **Results** section, either enter a name in the **Save results to file** field or use the drop down to select an existing file.
3. Click the **Send EMail** check box.
4. Enter the recipient's e-mail address.
5. Enter your e-mail address.
6. Click **Save**. Results will be e-mailed after the scan is completed. Results will include the market scan name, portfolio name, and the date and time of both the search start and end.

If your results are greater than 200K, you will receive an e-mail that contains notice only and not the scan results.

Testing e-mail

If you would like the test e-mail, enter your e-mail as the recipient and click **Test**. An e-mail will be sent to you.

Using defined e-mail settings

If you would like to use existing e-mail settings, then click the **Use e-mail settings** check box. The **EMail Settings** button will appear. Click it to open the CQG Preferences E-Mail Settings window.

Entry Signal Evaluator

The Entry Signal Evaluator enables you to create specific buy and sell signals and to evaluate the effectiveness of those signals over a particular time period. You can apply those signals to both portfolios and individual commodities.

Signal pane

Specify Signals and Portfolio

Buy: cqg.MACDCross Sell: cqg.RSIHigh

at: Previous_Low at: Previous_High

Single Commodity: CLE

Progress pane

Current:

Result parameters pane

Show Summary Info

- Sum
- Average Per Trade
- Average for Wins
- Average for Losses
- Draw Down
- Consecutive Losses
- Wins and Losses
- Accuracy %
- Profits/Losses
- Avg Win/Avg Loss
- % Remove to Neutral
- Avg Draw Down Perf
- Max Draw Down Perf

Results pane

	Open 1 Ba	1 Bar	Open 2 Ba	2 Bars	Open 3 Ba	3 Bars	4 Bars	5 Bars
Sum of 270	315450	329720	327120	331250	327760	357480	366590	377110
Average of 270	1173	1226	1221	1236	1228	1339	1378	1423
Average for Wins	2012	2462	2467	2858	2869	3311	3418	
Average for Losses	-1039	-1545	-1557	-1816	-1843	-2007	-2544	
Draw Down	-8130	-16540	-16890	-26100	-27100	-46720	-63580	-74180
Consecutive Losses	4	11	11	11	11	10	11	11
Wins & Losses	195/74	186/83	185/83	175/93	174/93	168/99	175/91	171/94
Accuracy %	72.49	69.14	69.03	65.30	65.17	62.92	65.79	64.53
All Profits/All Losses	5.10	3.57	3.53	2.96	2.91	2.80	2.58	2.45
Avg Win/Avg Loss	1.94	1.59	1.58	1.57	1.56	1.65	1.34	1.35
% Remove to Neutral	35.69	28.25	27.61	23.13	22.47	22.10	20.30	18.49
Avg DD Perf Ratio	224.71	87.45	84.18	42.12	41.04	25.99	18.74	15.10
Max DD Perf Ratio	38.83	19.95	19.38	12.70	12.10	7.66	5.77	5.09
!.US.CLEN11 06/13/2011	5060	2510	2470	6810	6860	6990	9240	8830
!.US.CLEN11 06/14/2011	-360	3980	4030	4160	4220	6410	6000	6120
!.US.CLEN11 06/15/2011	-1220	-1350	-1410	-3600	-3710	-3190	-3310	-2410
!.US.CLEN11 06/15/2011	4350	4480	4540	6730	6840	6320	6440	5540
!.US.CLEN11 06/16/2011	4850	7040	7150	6630	6540	6750	5850	7950
!.US.CLEN11 06/17/2011	2950	2430	2340	2550	2340	1650	3750	4870
!.US.CLEQ11 06/20/2011	1640	1850	1640	950	1000	3050	4170	4560
!.US.CLEQ11 06/20/2011	1640	1850	1640	950	1000	3050	4170	4560
!.US.CLEQ11 06/21/2011	110	-580	-530	1520	1580	2640	3030	520
!.US.CLEQ11 06/22/2011	700	2750	2810	3870	3940	4260	1750	40
!.US.CLEQ11 06/23/2011	3410	4470	4540	4860	4990	2350	640	580
!.US.CLEQ11 06/24/2011	3310	3630	3760	1120	1100	-590	-650	-280
!.US.CLEQ11 06/27/2011	1630	-1010	-1030	-2720	-2740	-2780	-2410	-2660
!.US.CLEQ11 06/28/2011	-2070	-3760	-3780	-3820	-3820	-3450	-3700	-5720
!.US.CLEQ11 06/29/2011	-1710	-1750	-1750	-1380	-1610	-1630	-3650	-3650
!.US.CLEQ11 06/30/2011	2460	2090	2320	2340	2310	4360	4360	6130
!.US.CLEQ11 06/30/2011	720	1090	860	840	870	-1180	-1180	-2950
!.US.CLEQ11 07/01/2011	840	820	850	-1200	-1180	-1200	-2970	-660
!.US.CLEQ11 07/04/2011	420	-1630	-1610	-1630	-1650	-3400	-1090	260
!.US.CLEQ11 07/05/2011	-1530	-1550	-1570	-3320	-3320	-1010	340	-1180

Errors:

To open this window, click the **SigEval** button on the toolbar. If the button is not displayed, then click the **More** button, and then click **Entry Sig Eval**.

Signal Evaluator Toolbar

The Signal Evaluator toolbar includes these buttons:

New button

Click this button to start the Signal Evaluator Wizard.

Data button

Click this button to change the data for the signal evaluator.

Signals button

Click this button to change the short and long entry signals.

Start button

Click this button to run the signal evaluator.

Stop button

Click this button to stop the signal evaluator.

XCopy button

Click this button to copy the signal evaluator data to the clipboard.

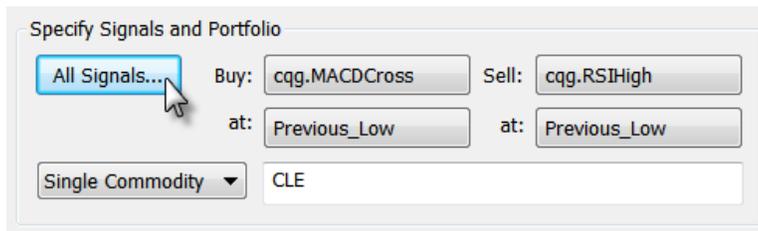
Creating and Running Signals

The Setup Wizard provides a quick, easy way to begin using the Signal Evaluator. Click the **New** button on the toolbar to open the wizard, which starts with a short introduction to the Signal Evaluator application.

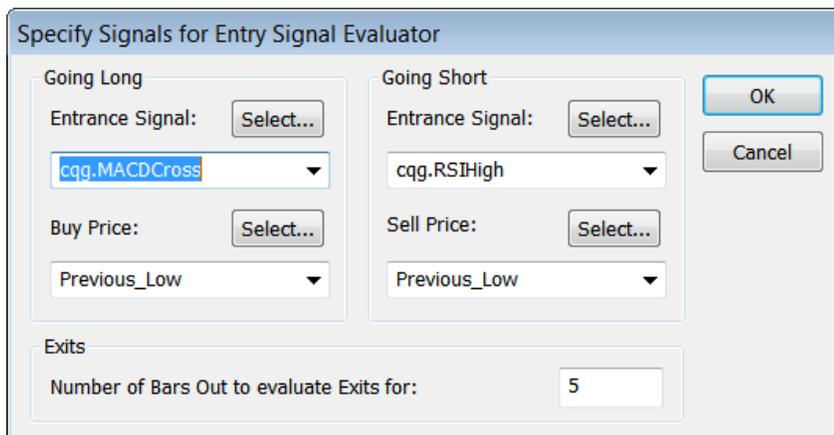
You can also bypass the wizard and create signals directly on the window.

To create new signals

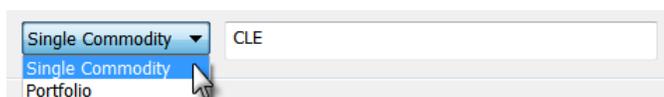
1. Click the **All Signals** button



to open the **Specify Signals** window:



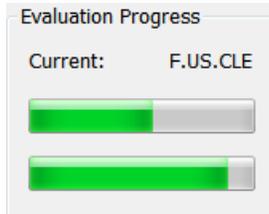
2. To create a new condition for the entrance signal or to create a new user formula for the price value, click the **Select** button, then click the **Define** button.
3. To select a previously defined condition, click the arrow to open the menu list.
4. Type a value for the number of bars to consider in the exit evaluation. The maximum is 500.
5. Select either **Single Commodity** or **Portfolio**. If you select commodity, type the commodity. If you select portfolio, click the field to select the portfolio to use.



The next step is to choose results display parameters.

To start and stop the evaluation

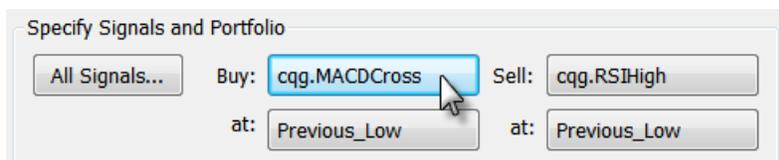
Click the **Start** button to run the evaluation or to restart a halted evaluation. The progress is indicated at the top of the Signal Evaluator window. The top indicator shows that a search is in progress, while the bottom indicator shows the overall search progress.



Click the **Stop** button on the toolbar to discontinue the evaluation.

To change an existing signal

The Buy and Sell fields are also buttons:



To change the **Buy** value:

1. Click the button to open the **Specify Long Entry Signal** window.
2. Click a condition, then click the **Replace** button.
3. Click the **Define Condition** button to create a new entry signal.

To change the buy **at** value:

1. Click the button to open the **Specify Long Entry Value** window.
2. Click a user value, then click **Replace**.
3. Click **Define User Value** to create a new entry value.

To change the **Sell** value:

1. Click the button to open the **Specify Short Entry Signal** window.
2. Click a condition, then click **Replace**.
3. Click the **Define Condition** button to create a new entry signal.

To change the sell **at** value:

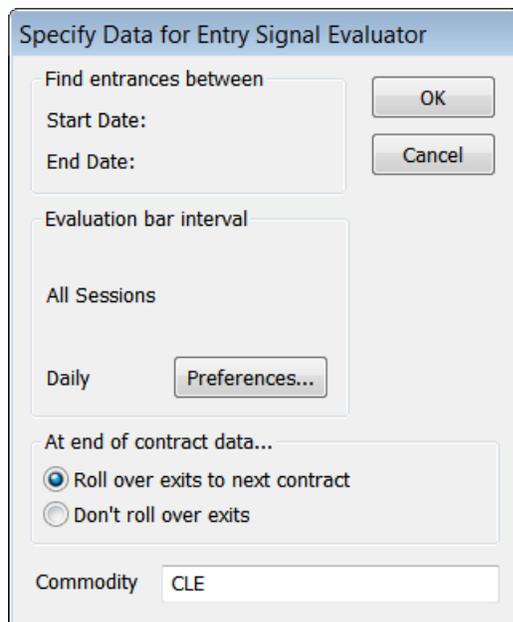
1. Click the button to open the **Specify Short Entry Value** window.
2. Click a user value, then click **Replace**.
3. Click **Define User Value** to create a new entry value.

You can also use the **Specify Signals** window. Click the **Signals** button on the toolbar or click the **All Signals** button on the Signal Evaluator.

To change date, interval, continuation and rollover settings

There are two data settings windows, one for commodities and one for portfolios. To open these windows, click the **Data** button. The window that opens is determined by the commodity/portfolio setting.

For commodities:



The screenshot shows a dialog box titled "Specify Data for Entry Signal Evaluator". It contains several sections: "Find entrances between" with "Start Date:" and "End Date:" fields and "OK" and "Cancel" buttons; "Evaluation bar interval" with "All Sessions" and "Daily" radio buttons and a "Preferences..." button; "At end of contract data..." with "Roll over exits to next contract" (selected) and "Don't roll over exits" radio buttons; and a "Commodity" field with the value "CLE".

Find entrances between

- Start Date
- End Date

Evaluation bar interval

- Click the Preferences button to open chart preferences to make changes to interval parameters.

At end of contract data

- **Roll over exits to meet next contract** = akin to having a continuation chart, in that the evaluation continues using a different month's data. However, unlike a true continuation chart, there are no price adjustments.
- **Don't roll over exits** = Evaluation stops when the contract is no longer the most active.

For portfolios:

Find entrances between

- Start Date
- End Date

Evaluation bar interval

- Click the arrow and select a value between 1-min and annual.
- Select the **All Sessions** check box if you would like data for all sessions (intraday only).

Evaluate commodities using

- **Individual Active Contracts** = Detail results window shows the results for the lead month at the specific time indicated in the left column.
- **Active Continuation Data** = Detail results window displays results for each date.

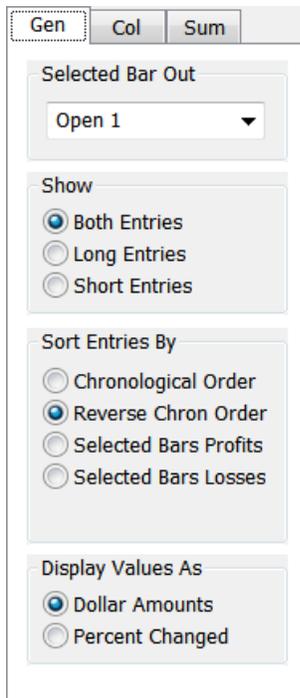
At end of contract data

- **Roll over exits to meet next contract** = Akin to having a continuation chart, in that the evaluation continues using a different month's data. Unlike a true continuation chart, however, there are no price adjustments.
- **Don't roll over exits** = Evaluation stops when the contract is no longer the most active.

Setting results display parameters

On the left of the Signal Evaluator in the result parameters pane, there are three tabbed windows: Gen, Col, and Sum. Here, you set display parameters for the [results pane](#).

General (Gen)



The screenshot shows the 'Gen' tab of the Signal Evaluator's result parameters pane. It features three tabs: 'Gen', 'Col', and 'Sum'. The 'Gen' tab is active and contains four sections of settings:

- Selected Bar Out:** A dropdown menu currently set to 'Open 1'.
- Show:** Three radio button options: 'Both Entries' (selected), 'Long Entries', and 'Short Entries'.
- Sort Entries By:** Four radio button options: 'Chronological Order', 'Reverse Chron Order' (selected), 'Selected Bars Profits', and 'Selected Bars Losses'.
- Display Values As:** Two radio button options: 'Dollar Amounts' (selected) and 'Percent Changed'.

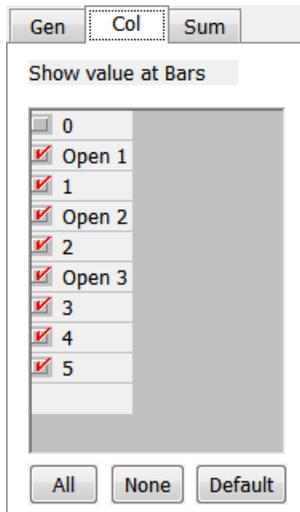
Selected Bars Out: Designates the column to sort the Signal Evaluator results. The columns are designated in the Col window.

Show: Determines which entries to show in the results: long, short, or both.

Sort Entries By: Determines how the results are sorted: Chronological, reverse chronological, by profits (most to least), by losses (most to least).

Display Values As: Determines whether values are displayed as dollar amounts or as percent changed from the last bar.

Column (Col)



Values that are checked are displayed as columns on the [Detail results window](#).

The number of columns is determined by the number set on the Specify Signals window (click the **All Signals** button to open that window).

Click the **All** button to select every bar.

Click the **None** button to clear all bars.

Click the **Default** button to use system defaults:

- first 5 bars, including Open 1, 2, and 3;
- every 5th bar up to 30; and
- every 10th bar thereafter.

Summary (Sum)

Values that are checked are displayed as rows on the [Details results window](#).

Summary Data	Definition
Sum	Total profit or loss.
Average Per Trade	Average win or loss per trade.
Average for Wins	Average dollar gain for all profitable trades.
Average for Losses	Average dollar loss for all unprofitable trades.
Draw Down	Maximum loss during the designated bar interval.
Consecutive Losses	Maximum number of losing trades without a winning trade.
Wins and Losses	Total number of winning trades/total number of losing trades.
Accuracy %	Number of winning trades as a percent of the total number of trades.
Profits/Losses	Total gain from the winning trades as a percentage of the total losses.
Avg Win/Avg Loss	The ratio of the average gain for a winning trade to the average loss.
% Remove to Neutral	Number of trades (as a %) that would have to be removed, starting with the most extreme, to turn a profitable strategy into a losing strategy or a losing strategy into a profitable one.

Summary Data	Definition
Avg Draw Down Performance Ratio	AP/AMR* AP = Annualized Profit AMR = Average Maximum Retracement $\frac{1}{N} \sum_{i=1}^n MR_i$
Maximum Draw Down Performance Ratio	AP/Largest (MRPP-Profit) MR = Maximum Retracement Max of MRPP-Profit or Profit – MRSL where MRPP = Maximum Retracement from a prior peak. And, MRSL = Maximum Retracement from a subsequent low.

After setting these parameters, you are ready to run the evaluation.

Viewing Signal Evaluator Results

The Signal Evaluator results are displayed on four windows: Detail, Profit Curve, Distribution, and Summary. The display settings are selected on the [result settings pane](#).

Detail

This window lists the results for each of the bars comprising the period selected (to change the start and end dates, click the **Data** button).

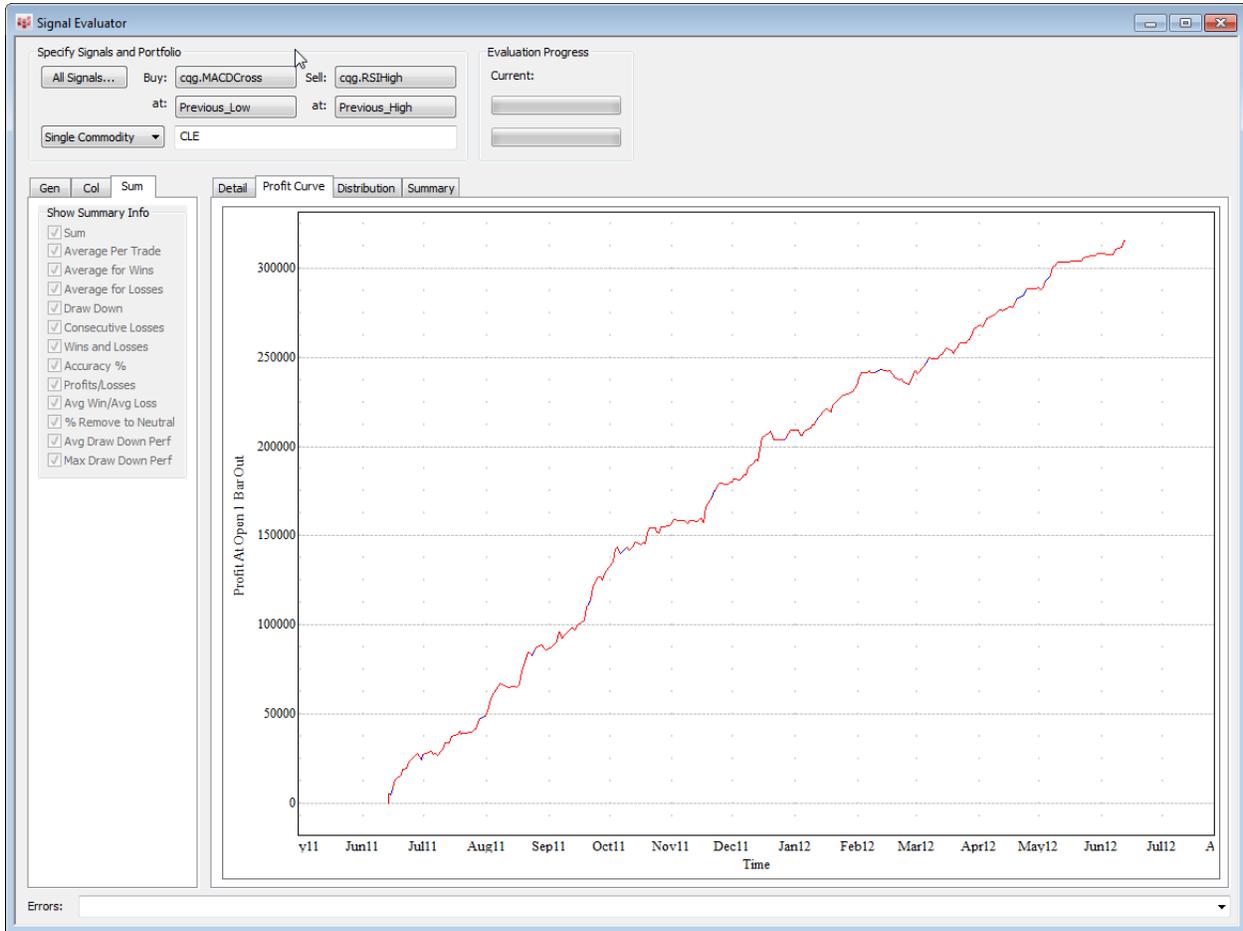
Rows are set on the [Sum window](#), while columns are set on the [Col window](#).

The screenshot shows the 'Signal Evaluator' application window. At the top, there are controls for 'Specify Signals and Portfolio' (Buy: ccg.MACDCross, Sell: ccg.RSIHigh, at: Previous_Low, Previous_High, Single Commodity: CLE) and 'Evaluation Progress'. Below this is a tabbed interface with 'Detail', 'Profit Curve', 'Distribution', and 'Summary' tabs. The 'Detail' tab is active, displaying a table with columns for 'Open 1 Ba', '1 Bar', 'Open 2 Ba', '2 Bars', 'Open 3 Ba', '3 Bars', '4 Bars', and '5 Bars'. A 'Show Summary Info' panel on the left lists various metrics like 'Sum', 'Average Per Trade', 'Average for Wins', etc., with checkboxes. The table contains numerical data for each bar, with some cells highlighted in yellow or red. An 'Errors:' field is visible at the bottom left.

	Open 1 Ba	1 Bar	Open 2 Ba	2 Bars	Open 3 Ba	3 Bars	4 Bars	5 Bars
Sum of 270	315450	329720	327120	331250	327760	357480	366590	377110
Average of 270	1173	1226	1221	1236	1228	1339	1378	1423
Average for Wins	2012	2462	2467	2858	2869	3311	3418	3725
Average for Losses	-1039	-1545	-1557	-1816	-1843	-2007	-2544	-2765
Draw Down	-8130	-16540	-16890	-26100	-27100	-46720	-63580	-74180
Consecutive Losses	4	11	11	11	11	10	11	11
Wins & Losses	195/74	186/83	185/83	175/93	174/93	168/99	175/91	171/94
Accuracy %	72.49	69.14	69.03	65.30	65.17	62.92	65.79	64.53
All Profits/All Losses	5.10	3.57	3.53	2.96	2.91	2.80	2.58	2.45
Avg Win/Avg Loss	1.94	1.59	1.58	1.57	1.56	1.65	1.34	1.35
% Remove to Neutral	35.69	28.25	27.61	23.13	22.47	22.10	20.30	18.49
Avg DD Perf Ratio	224.71	87.45	84.18	42.12	41.04	25.99	18.74	15.10
Max DD Perf Ratio	38.83	19.95	19.38	12.70	12.10	7.66	5.77	5.09
1.US.CLEN11 06/13/2011	5060	2510	2470	6810	6860	6990	9240	8830
1.US.CLEN11 06/14/2011	-360	3980	4030	4160	4220	6410	6000	6120
1.US.CLEN11 06/15/2011	-1220	-1350	-1410	-3600	-3710	-3190	-3310	-2410
1.US.CLEN11 06/15/2011	4350	4480	4540	6730	6840	6320	6440	5540
1.US.CLEN11 06/16/2011	4850	7040	7150	6630	6540	6750	5850	7950
1.US.CLEN11 06/17/2011	2950	2430	2340	2550	2340	1650	3750	4870
1.US.CLEQ11 06/20/2011	1640	1850	1640	950	1000	3050	4170	4560
1.US.CLEQ11 06/20/2011	1640	1850	1640	950	1000	3050	4170	4560
1.US.CLEQ11 06/21/2011	110	-580	-530	1520	1580	2640	3030	520
1.US.CLEQ11 06/22/2011	700	2750	2810	3870	3940	4260	1750	40
1.US.CLEQ11 06/23/2011	3410	4470	4540	4860	4990	2350	640	580
1.US.CLEQ11 06/24/2011	3310	3630	3760	1120	1100	-590	-650	-280
1.US.CLEQ11 06/27/2011	1630	-1010	-1030	-2720	-2740	-2780	-2410	-2660
1.US.CLEQ11 06/28/2011	-2070	-3760	-3780	-3820	-3820	-3450	-3700	-5720
1.US.CLEQ11 06/29/2011	-1710	-1750	-1750	-1380	-1610	-1630	-3650	-3650
1.US.CLEQ11 06/30/2011	2460	2090	2320	2340	2310	4360	4360	6130
1.US.CLEQ11 06/30/2011	720	1090	860	840	870	-1180	-1180	-2950
1.US.CLEQ11 07/01/2011	840	820	850	-1200	-1180	-1200	-2970	-660
1.US.CLEQ11 07/04/2011	420	-1630	-1610	-1630	-1650	-3400	-1090	260
1.US.CLEQ11 07/05/2011	-1530	-1550	-1570	-3320	-3320	-1010	340	-1180

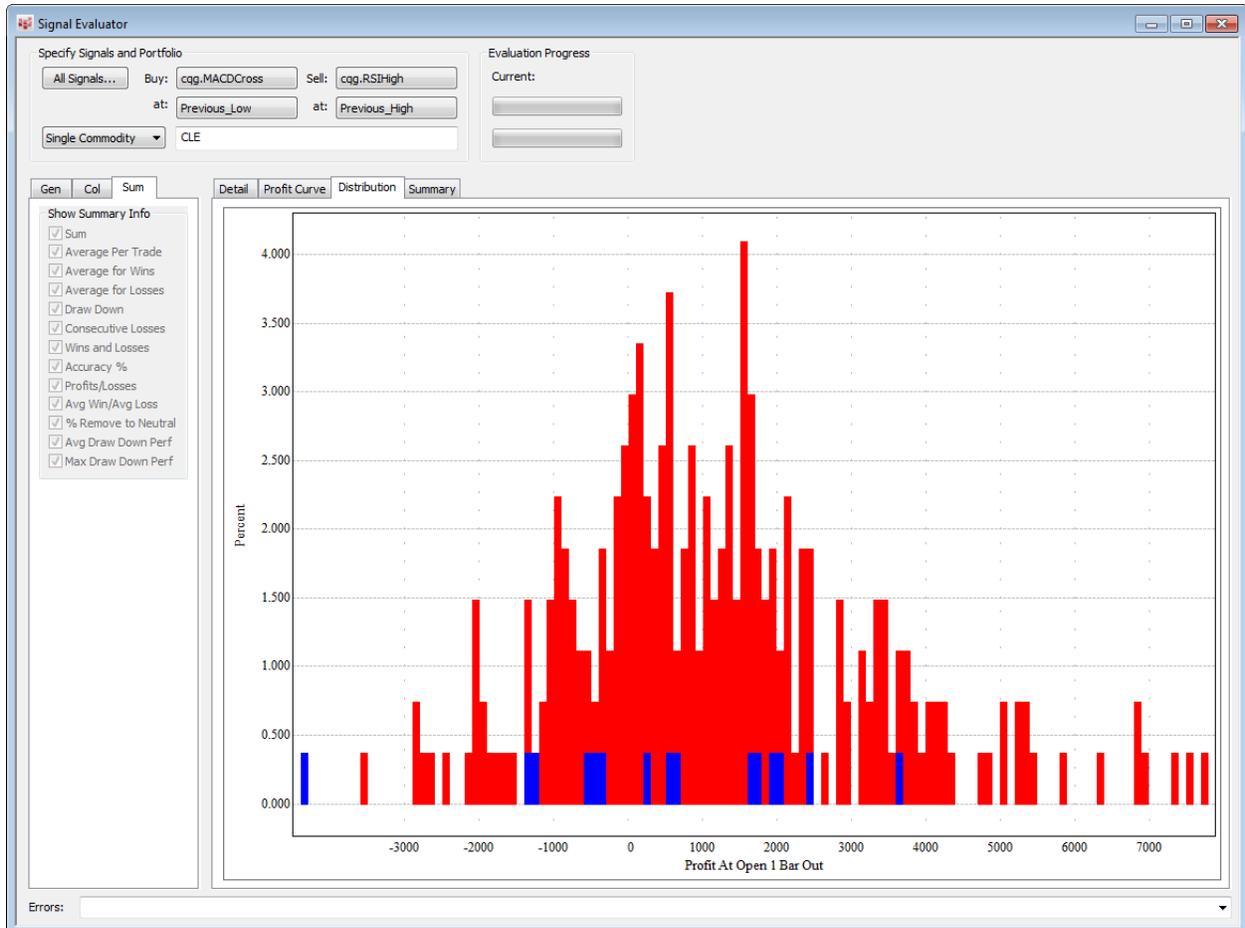
Profit Curve

This window displays the strategy results over the selected time period.



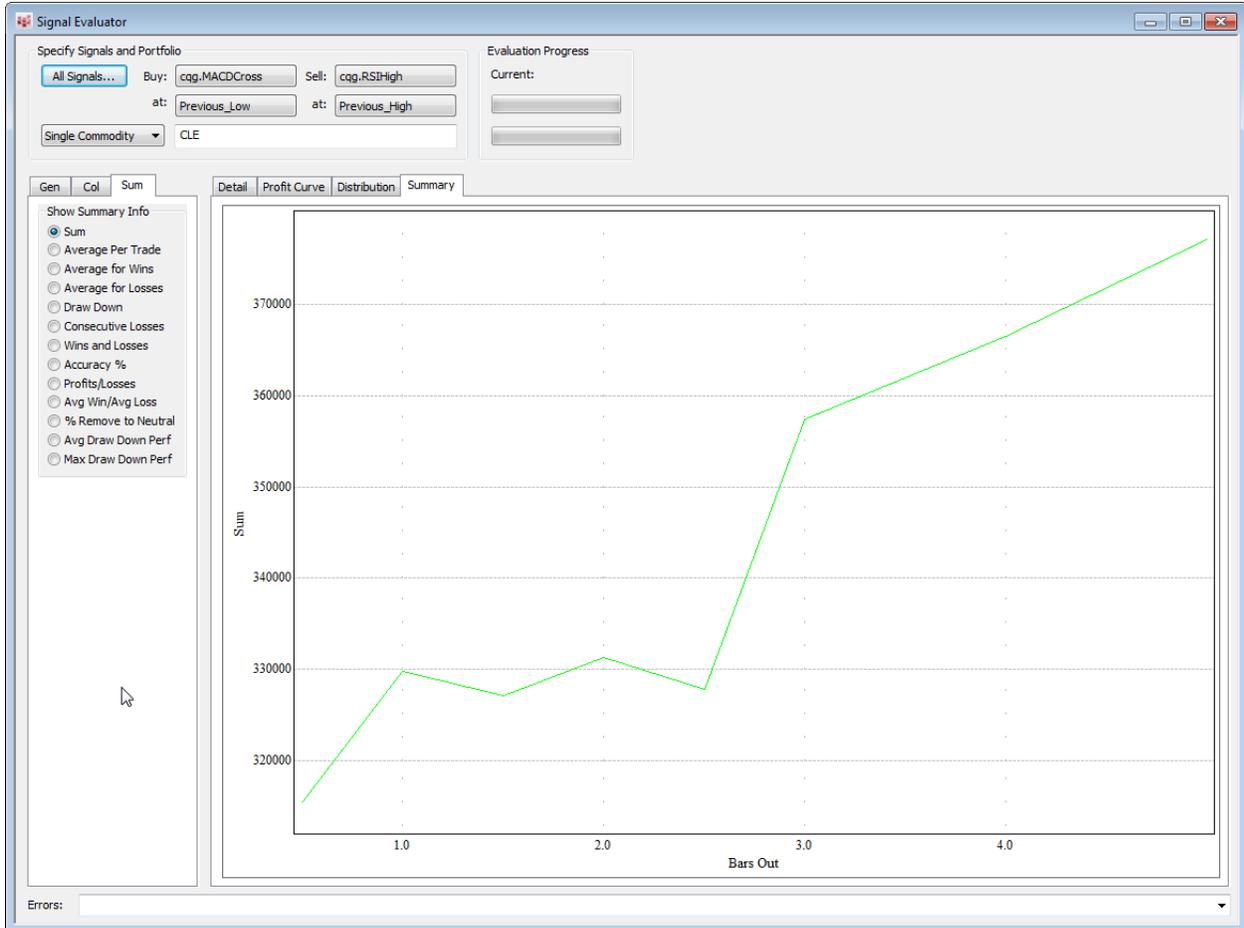
Distribution

This window displays a histogram of the results.



Summary

This window uses a graph to plot values from the [Sum window](#) on the vertical axis and values from the [Col window](#) on the horizontal axis.



Formula Tracer

The **Formula Tracer** feature allows you to see the calculations that went into figuring the values for your custom studies or trading systems. This facilitates refining your custom studies and trading systems to produce the results you expect.

1. Place a custom study or trading system on a chart.
2. Click the time scale in the chart to activate a vertical cursor.
3. Click the **Tracer** button.

To place the Tracer button on the Chart toolbar

1. Click the **Setup** button.
2. Select **Customize Toolbar**.
3. Click the >>> button associated with **Chart** Control.
4. Click the **Tracer** button.

Understanding the Tracer Display

For each display element, Tracer reports the outputs at the time indicated by each vertical cursor shown. In the above example, two vertical cursors were showing on the chart, and they both were selected as columns in the Formula Tracer. The dates of the two vertical cursors are used as the column headings.

For each time frame, Tracer reports all the bar values, as well as each of the study component values.

Additionally, the display indicates: the name of the custom study (channel), the names of the curves (High and Low), the name of the instrument and any additional parameter values.

To select the charts to be traced

1. Click the **Charts** button at the top of the **Tracer** window to show a list of all the open charts.
2. Select the chart(s) that you want see in the tracer.
3. Click the **OK** button.

To select the rows displayed

From the Select Study Outputs window you can select the curves (for a custom study) or trades (for a trading system) for which you want to see data.

1. Click the **Study Outputs** button at the top of the **Tracer** window.
2. Click in the desired display boxes to include the indicated elements.
3. Click the **OK** button.

Selecting the Columns Displayed

To display actual values in the Tracer you must be displaying one or more vertical cursors. After displaying a vertical cursor(s), you can elect which cursors you want to see values for.

1. Click the **Vertical Lines** button at the top of the **Trace** window.
2. Select the columns (cursor values) you want to be displayed.
3. Click the **OK** button.

Setting Tracer Preferences

1. Click the **Setup** button at the top of the **Trace** window to display the **Tracer Preferences** window.
2. Select the **Add built-in studies to "Select studies"** list checkbox if you want to be able to use the **Tracer** feature for "built in" **CQG** studies. Built in studies are those that come with **CQG**, that is, studies that are not user-created custom studies.
3. In the **Values' Precision** box, enter the number of digits you want to appear to the right of the decimal point in the **Formula Tracer**.
4. Click **OK** to apply the settings.

Trade System Optimizer

Trade System Optimizer (TSO) is a module within CQG that gives you a tool for testing the results of trading systems with different parameters. All combinations of the parameters you have selected are evaluated, and the results of each combination are reported in the **TSO** window. By looking at the results, you can determine which set of user-defined parameters produces the best results (expressed as the best value for the selected Optimize On statistic) when you apply a specific trading system to a chart.

TSO cannot load without a trade system.

TSO Summary

Parameter Settings

The screenshot shows the Trade System Optimizer (TSO) window with the following components:

- TSO Summary:**
 - Symbol: F.US.EPZ1, DC
 - Trade System: optem2
 - 1000 bars back 15:30 05-01-01
 - Maximizing: TotalNetProfit
 - Step 20 of 169 (12%)
 - Thresholds: [empty]
 - Rows Shown: 18
 - Method: Genetic
- Parameter Settings:**

Parameter	Start	End	Step
RsiPeriod	9	9	1
XANumForRsi	20	80	5
XALongExit	20	80	5
- Table Settings:**
 - Sort By: TotalNetProfit
 - Descending (selected)
 - Ascending (unselected)
 - Max Best Results: 100
 - Display Chart with: No Update
 - after steps: 5
- Results Table:**

Note	RsiPeriod	XANumForRsi	XALongExit	TotalNetP	TotalTradeCount	AveragePr
Current	9	65	75	14400000	13	11076
	9	50	75	17375000	10	17375
	9	65	75	14400000	13	11076
	9	35	75	10150000	7	14500
	9	50	70	9287500	12	7739
	9	30	55	6187500	12	5156
	9	70	20	5850000	4	14625
	9	70	75	3400000	18	1888
	9	70	70	3250000	27	1203
	9	60	25	3187500	7	4553
	9	20	50	2212500	3	7375
	9	65	20	2125000	4	5312
	9	70	45	-787500	12	-656
	9	50	25	-1037500	9	-1152
	9	75	65	-3437500	12	-2864
	9	50	30	-3525000	15	-2350
	9	60	30	-5150000	12	-4291
	9	45	40	-11475000	43	-2668
	9	55	50	-22100000	56	-3946

Table Settings

Results Table

The **TSO** window contains two tabs (**Table** and **Graph**). The **Table** view consists of 4 sections:

- The **TSO Summary** section includes the basic setup information, except the parameters.
- The **Parameter Settings** section
- The **Table Settings** section
- The **Results** Section

The **Graph tab** changes the display to show a 3-D model of the parameters in a TSO run.

Adding a TSO Window with the TSO Button

TSO only works for those trading systems that have user-defined parameters. TSO cannot load without a trade system.

You can start TSO using either the TSO button on the toolbar, or from within a chart.

To start TSO using the Toolbar:

Click the TSO button on the toolbar.

If the TSO button is not displayed on the application toolbar, you can add it by doing the following:

1. Click the **Setup** button.
2. Select **Customize Toolbar**.
3. This displays the **Toolbar Manager** window.
4. Select the >>> button in the **Add/Remove** column in the **Chart, Quote, News** row.
5. Select **TSO** in the button column.
6. Click the **Close** buttons on the **Customize Application Toolbar** and **Toolbar Manager** windows.
7. Click the **TSO** button on the toolbar.

If you start TSO using the toolbar, TSO will initially display the Symbol and Trade System information from the previous TSO run. If this is the first time TSO is started, the Main window will be empty.

To start TSO from a chart:

1. Display a chart with the symbol you want to use for optimizing, with the trade system you want to use applied to that chart.
2. Right-click the **Trade System** that has been placed on the chart.
3. Select **Optimize** from the menu.

The **Optimizer** main view is displayed. In addition, every time the Optimizer is opened from a chart, a new TSO setup component is created. The system automatically names the run "unknownX" as displayed in the Runs section of the TSO Setup window and takes the run information taken from the chart (Symbol, Trade System, Time Interval, Time Range, Base Expression) and trade system (user-defined parameters and their values) from which the Optimizer was started. These system-created runs are saved until you delete them.

The TSO Toolbar

The TSO toolbar includes these buttons:

Specify button

Click this button to specify optimization settings for a TSO run.

Start Button

Click this button to start the optimizer.

Stop Button

Click this button to stop the optimizer.

Clear Button

Click this button to clear the optimizer results.

How to use TSO

Here's the condensed version of using the **Optimizer**:

1. Display a chart and apply a **Trade System** to it.
2. Open the **Optimizer**.
3. Specify settings for the **Optimizer** to use and close the **TSO Setup** window.
4. Click **Start**.
5. Analyze the results.

Specifying Optimization Settings for a TSO Run

Click the **Specify** button. This displays the **TSO Setup** window.

The screenshot shows the **TSO Setup** window with the following sections:

- Runs:** A table listing optimization runs.

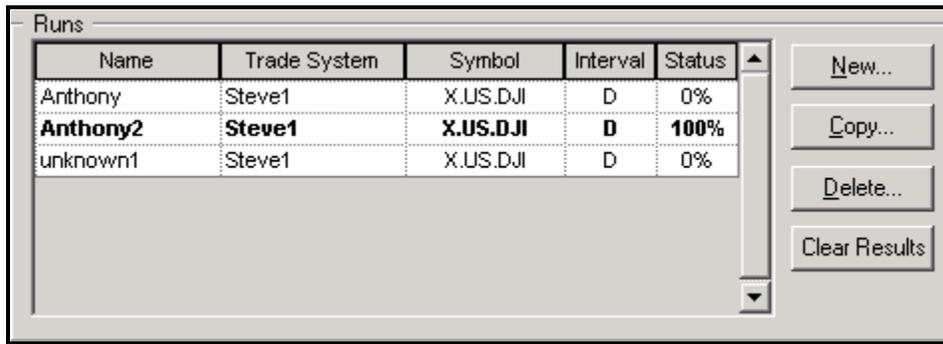
Name	Trade System	Symbol	Interval	Status
DianeDoc	Dbl_06	F.US.EPH2	60	100%
- Run Info:** Creator: DianeB, Started at: 02/19/02 09:17.
- Trade System Parameters:** A table for parameter optimization.

Use	Optimize Order	Parameter Name	Start Value	End Value	Step
<input type="checkbox"/>		Dbl_MApr	7		
<input type="checkbox"/>		Dbl_RSlper	3		
<input type="checkbox"/>		Dbl_Mult	1.800		
<input type="checkbox"/>		Dbl_Pma	29		
<input checked="" type="checkbox"/>	1st	Dbl_PmaMult	0.001	1.999	0.002
- Chart type:** Bar (dropdown), Setup...
- Chart parameters:** Interval: 60 Min (dropdown).
- Primary Session:** Setup...
- Bar Range:** From: 08:30 12-03-01, To: 08:30 02-19-02.
- Not to exceed:** 2000 bars (text input), Edit...
- Thresholds:** ... (text input), Setup...
- Number of steps:** 1000
- Statistics calculation:** per trade (dropdown)
- Optimize on:** TotalNetProfit (dropdown)
- Algorithm:** Exhaustive (dropdown), Setup...
- Maximizing/Minimizing:** Radio buttons for Maximizing (selected) and Minimizing.

The **TSO Setup** Window allows users to:

- Select the Optimizer run to use.
- Set Trade System parameter information.
- Set the chart characteristics and data used in evaluating the trade system.
- Select which statistic to optimize.
- Select which algorithm the optimizer should use.

Selecting the Optimizer Run



The Runs section of the **TSO Setup** window displays a list of optimizer runs. The selected run is bolded in the display.

You can select an existing run; create a new run; copy an existing run on which to base the new one; or delete runs you no longer want to save.

Selecting an Existing Run

When an existing trade system cell is selected, two buttons are displayed in the Trade System column. The button on the left is the drop-down list arrow. The button on the right opens the Define User Formulas window.

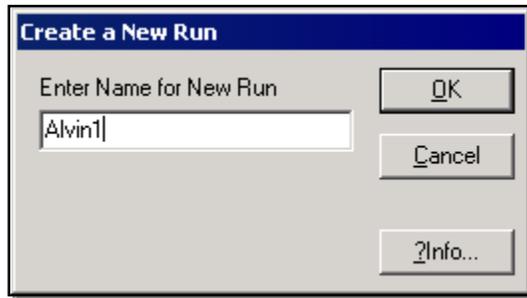
1. Click the drop down list arrow and select the trade system from the list.
2. The **TSO Setup** window updates with the existing run's information.

To change an existing trade system or create a new trade system

1. Click in the new run's **Trade System** column.
2. Click the button on the right side of the column.
3. This displays the **Define User Formulas** window.
4. Scroll through the list of runs until you see the one you want in the window.
5. Click anywhere in that run's row.

To create a new run

1. Click the **New** button. This displays the **Create a New Run** window.

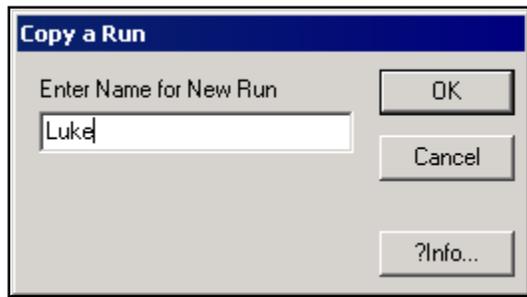


2. Enter a name for the new run and click **OK**.

The **TSO Setup** window clears the **Trade System Parameters** section, and retains the last run's other settings, which you can either use as-is, or change.

To copy a previous run

1. Click the **New** button. This displays the **Copy a Run** window.



2. Enter a name for the new run and click **OK**.

The **TSO Setup** window clears the **Trade System Parameters** section, and retains the last run's other settings, which you can either use as-is, or change.

To delete a run

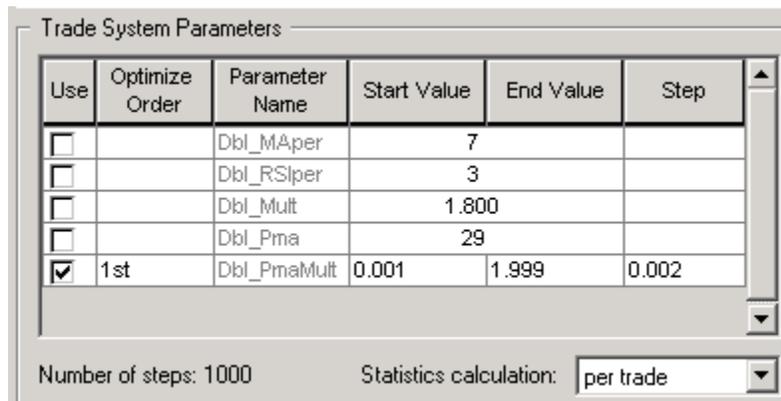
1. Click the **Delete** button.
2. This displays the **Confirm Deletion of Component** window.
3. Click the **Delete Component** button to dispose of the current run and close the Confirm window.

The Run Info Section



On the right side of the **Runs** section, under **Run Info**, you can type in information that is associated with the selected run. Additionally, this section lists the creator and time of the run. This field is displayed only on the **TSO Setup** window; it is *not* associated with the **Note** column in the **TSO Results** table. The **Run Info** area gives you a place to store information about the settings, parameters, values, or other characteristics that make this run unique.

The Trade System Parameters Section



The **Trade System Parameters** section of the **TSO Setup** window displays all the user-defined parameters associated with the selected Trade System. The start values initially are those that were set in the Trade System. However, you can change those by clicking in the cell and entering a new value.

Select which parameters to use in the order you want the parameters run through optimizer. That way, both the **Optimize Order** column and the **Use** Column are completed.

To change the order, click in the **Optimize Order** column and select the correct order from the drop down list.

The **Start Value** and **End Value** determine the range of values you want to test for each parameter. Enter the first value you want the Optimizer to use for each parameter in Start Value. Enter the last value you want the Optimizer to use for each parameter in End Value.

The **Step value** determines how the Optimizer increments the parameter to change the parameter's value. If the start value and end value are both integers, a step of 1 means the Optimizer will test every value of the parameter between the Start Value and End value. A step of 5 means the Optimizer will test the Start Value, reset the parameter to Start Value +5, and then test again, until it reaches the End Value set for that parameter. That means only every fifth value of the parameter between its Start and End Value is tested.

The Optimizer changes only one parameter at a time, so all combinations of the specified parameter values are tested.

The **Number of Steps** indicates the number of test steps needed to test all combinations of the values for every parameter, based on your inputs in this section and the algorithm selected.

Example: The following values produce a number of steps value equal to 392 calculated as follows:

Start Value	End Value	Step
1	7	1
1	8	1
3	9	1

Number of steps = (from 1 to 7inclusive) = 7

(from 1 to 8inclusive) = 8

(from 3 to 9inclusive) = 7

$7 \times 8 \times 7 = 392$ steps

Note: The parameters settings are displayed in the main **TSO** window. However, they can only be changed using the **Formula Toolbox** window.

Statistics Calculation can be per trade, or per contract or share.

Setting Chart Characteristics

The screenshot shows a dialog box titled "Setting Chart Characteristics". It has four main sections:

- Chart type:** A dropdown menu is set to "Bar", with a "Setup..." button to its right.
- Chart parameters:** An "Interval:" dropdown menu is set to "60 Min", and a "Primary Session" button is below it.
- Bar Range:** "From:" and "To:" fields contain "08:30 12-03-01" and "08:30 02-19-02" respectively. Below them is a "Not to exceed:" field set to "2000 bars" and an "Edit..." button.
- Thresholds:** An empty text field with an ellipsis (...) and a "Setup..." button.

If you want to change the data settings, use the drop down lists and **Setup** buttons to make your selections. These settings determine which kind of chart the TSO uses for its calculations and how a chart will be displayed if a chart display is requested for a specific result in the result table.

Choose the chart type

Select the chart type you want to optimize. Choices are **Bar**, **Percent Bar**, **No Gap**, **Fill Gap**, **Candlestick**, **Constant Volume Bar**, **Yield**.

Click the Setup button to set the parameters for the selected chart type.

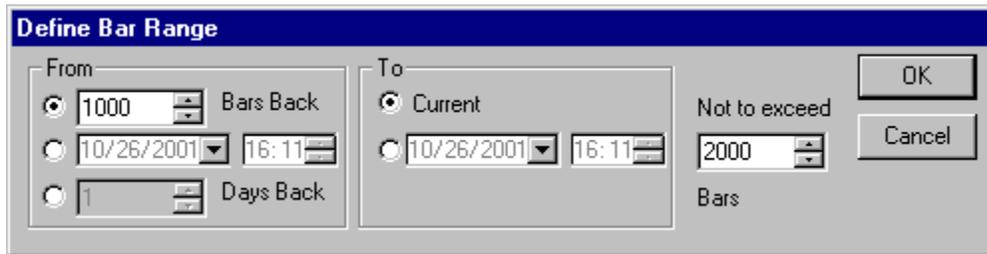
Choose the interval and session

From the **Chart Parameters** section, you can select the bar interval and miscellaneous setup characteristics.

Select the chart interval to use in the chart. **Options** in the drop down list include: 1 min, 5 min, 10 min, 15, 30, 60, Daily, Weekly, Monthly, Quarterly, Semi-Annual and Annual. If you want an interval that is not in the list, enter that interval in the Interval box.

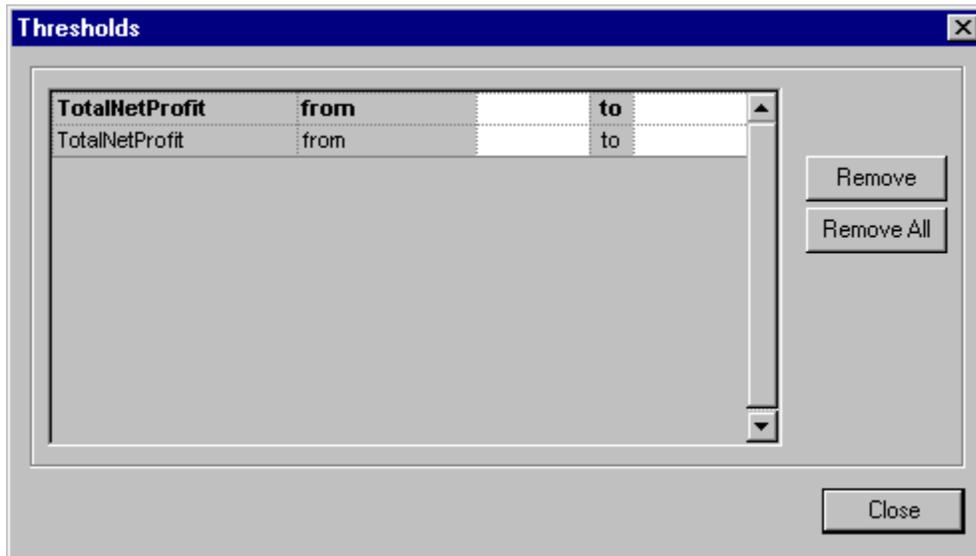
The **All Sessions Setup** button allows users to access the **Misc** and **Bats** tabs of the **Chart Preferences** window.

Set the Bar Range



1. To change the bar range, click the **Edit** button. The Define Bar Range window appears.
2. Choose one of the three buttons in the **From** section, as described below.
3. Select the top button in the **From** section for daily or longer bars.
4. Click the drop down list button next to the date to display the **Calendar** and select the desired date.
5. Input the desired time (for intraday bars) or select the second button for intraday bars.
6. Input the desired number of bars to look back.
7. Input the desired time (for intraday bars) or select the third button to start the bar range a specific number of days back.
8. Input the number of days back to start the range.
9. Click either the **Current** button in the To section or the button immediately below that to select a date and time to end the evaluation.
10. Enter a date and time, if necessary (if the **Current** button has not been selected).
11. Click the **OK** button to apply the selections and close the **Define Bar Range** window.

Setting Thresholds



Thresholds act as filters to limit the calculations that are reported in the results table. Only calculations whose calculation values meet all of the threshold settings appear in the results table. While TSO is stepping through the parameter values, the current step results are displayed, but unless a step meets the threshold criteria, no other rows are added to the results table.

1. Click the **Thresholds Setup** button. This displays the **Thresholds** window.
2. Click the parameter column to select the parameter to set the threshold value(s) on.
3. Click the **From** column.
4. Click the down arrow to display the list of threshold operators.
5. Select from, less than, or greater than and enter a value. If you select from, you must also enter a to value.
6. Click the **Close** button to enact the selections and dismiss the **Thresholds** window.

All thresholds are summarized in the **TSO Setup** window in the **Threshold** field. If you can't see all the threshold summary information, expand it by clicking the square button in the field.

Selecting the Statistic to Optimize On and the Optimization Order

The **Statistic to optimize on** is the statistic by which you want to measure the success of your Trade System. The default statistic to optimize on is **Total Net Profit**.

1. Click the **Optimize On** drop down arrow and select the statistic on which you want TSO to optimize.
2. Select whether you want the results to display sorted in increasing or decreasing order for this statistic.

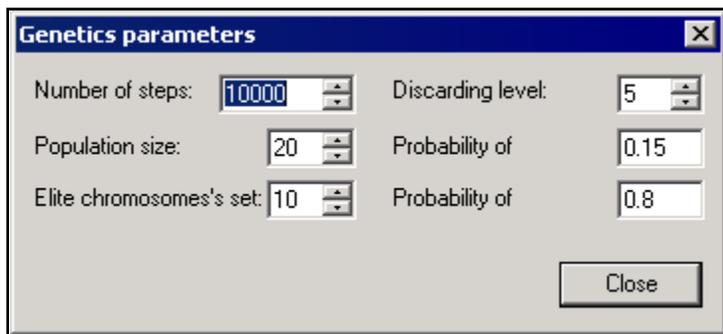
The statistic that is optimized on is always the first statistics column (after the parameter listing) displayed in the summary result table. It is always visible.

Selecting the TSO Algorithm

CQG offers 2 TSO Algorithms, exhaustive and genetic.

The **Exhaustive** algorithm evaluates the effectiveness of the trading system for each possible combination of all the parameters, as defined in the TSO Setup window. The best found parameter combination corresponds to the absolute maximum of effectiveness and cannot be further improved. The great disadvantage of the exhaustive algorithm is that it may take a long time.

The **Genetic** algorithm evaluates a subset of every possible combination of all the parameters defined in the **TSO Setup** window. The genetic algorithm takes its basic idea from biology and searches the most effective parameter combination according to biological laws. It does not guarantee the result, as does the exhaustive algorithm, but it probably finds the most effective combination, or one close to it, and it takes less time to run.



First, a number of living creatures (population size) are placed randomly in the knots of a parametric grid. Then these creatures live and reproduce themselves (crossing the genes and undergoing sometimes rare mutations) as would really take place in biology. The creature strength is defined by the effectiveness of the trading system with appropriate parameter combinations. After evaluating the effectiveness for all the creatures, the strongest creatures, selected from both "parents" and "descendants", form the succeeding generation, which becomes the new "parents." It is the demonstration of the biological law: the weaker perishes, the stronger survives. Thus, generation-by-generation the strongest creatures are assumed to approach the absolute maximum.

If the process comes to a dead end (remember, we are not sure that we have found the absolute maximum), the part of the current generation, defined by the Discarding level is

cancelled and replaced with the randomly selected creatures. This corresponds to influx of fresh blood in biology.

The Elite chromosome's set defines the capacity of the best chromosome buffer. That buffer keeps the best chromosome (creatures), which can never perish. Eugenics deals with this kind of selection in biology.

The number of steps means the total number of knots, where the effectiveness of the trading system should be evaluated. This number should be much less than the total number of knots, used in the **Exhaustive** algorithm, otherwise it makes no sense to apply the **Genetic** algorithm. Note that the number of generations is approximately equal to the number of steps divided by the population size.

1. Click the **Algorithm** drop down arrow and select **Genetic**.
2. Click the **Setup** button to display the **Genetic Parameters** window.
3. Set the genetics parameters and click the **Close** button on the **Genetic Parameters** window.

Genetics Parameters

Genetics Parameter	Description
Number of steps	The total number of times the effectiveness of the trading system should be evaluated. The algorithm increases its effectiveness when the number is increased, but the calculations will take longer.
Population size	The number of living creatures in population. These creatures are included in crossover and mutation processes. When each creature appears (after crossover and mutation processes) for the first time, its effectiveness must be estimated. This increases the number of executed calculations by 1. The Chromosome Number should be a few dozen, or may be a hundred or slightly more. It should be less than the total steps used in the Exhaustive algorithm.
Elite Chromosome's set	The capacity of the chromosome buffer, which keeps the best combinations of parameters that never perish. This buffer can be updated in each generation. This number must be less than the Chromosome Number in Population. Recommended values are 1/4 or 1/6 of the Chromosome Number in Population.
Discarding Level	Defines the number of generations, during which at least one new chromosome must appear among the Best Chromosomes. If this has not happened, the buffer is emptied and filled afresh from by the chromosomes from the Best Chromosome buffer and completed by the randomly selected ones. This parameter should not be very large, and probably should be in the range of 5 to 20.
Probability of mutation	Random change of the internal chromosome structure (bit representation) and its value. Like in biology, this should be a rare event. This value is expressed as a probability, and typical values are 0.01, 0.03 or 0.05. Although you can set the mutation probability greater than 0.1, it is not recommended for best results.

For additional information on the genetic algorithm, see *Genetic Algorithms + Data Structures = Evolution Programs* by Zbigniew Michalewicz

Setting the Results Table Characteristics

Symbol: F.US.EPZ1, DC Trade System: optem2 Parameter Start End Step

1000 bars back 15:30 05-01-01 Maximizing: TotalNetProfit RsiPeriod 9 9 1

Step 25 of 169 (15%) Thresholds: XANumForRsi 20 80 5

Rows Shown: 18 Method: Genetic XALongExit 20 80 5

Table Graph

Settings	Parameters	Statistics						
Note	RsiPeriod	XANumForRsi	XALongExit	TotalNetP...	TotalTradeCount	AverageProfit	MaxDrawAmount	Percent
Current	9	65	75	14400000	13	1107692	-20775000	
	9	50	75	17375000	10	1737500	-20775000	
	9	65	75	14400000	13	1107692	-20775000	
	9	35	75	10150000	7	1450000	-20775000	
	9	50	70	9287500	12	773958	-20775000	
	9	30	55	6187500	12	515625	-11675000	
	9	70	20	5850000	4	1462500	-12775000	
	9	70	75	3400000	18	188889	-20775000	
	9	70	70	3250000	27	120370	-4375000	
	9	60	25	3187500	7	455357	-21725000	
	9	20	50	2212500	3	737500	-3050000	
	9	65	20	2125000	4	531250	-24225000	
	9	70	45	-787500	12	-65625	-12637500	
	9	50	25	-1037500	9	-115278	-27762500	
	9	75	65	-3437500	12	-286458	-7975000	
	9	50	30	-3525000	15	-235000	-29912500	
	9	60	30	-5150000	12	-429167	-26737500	
	9	45	40	-11475000	43	-266860	-27175000	
	9	55	50	-22100000	56	-394643	-34075000	

After all the settings and selections are made in the **TSO Setup** window and that window is closed, you are once again looking at the **TSO Main** view. Nothing is displayed in the table area until the optimizer is run.

The upper section of the window displays summary information about the settings and selections upon which the current run is based. This section can be contracted so the parameter settings and some of the TSO summary fields are not displayed, leaving more room to display result rows.

Expanding or Contracting the Summary Section

1. Click the **Up** arrow button to contract the window. The Up arrow will turn into a down arrow.
2. Click the **Down** arrow button to expand the sections so the summary fields and parameters show. The Down arrow will turn into an up arrow.

After the optimizer is run, the lower section of the window displays the detailed information about each step (parameter value) that makes up the run.

The results table will show information about the parameter values used and the summary results for the trade system.

If the Table settings are not displayed when you first open the window, click the plus sign next to Settings above the heading row of the table. The Settings information expands and is displayed to the left of the table. To collapse the settings so you can see more columns of data in the table, click the minus sign next to Settings.

Table settings determine the order in which results will be displayed, the number of results, and how and when the associated chart is displayed.

Displaying the Settings

Selecting the box next the word **Settings** displays the parameters whose results are shown in the table.

The results in the table can be sorted by any of the parameters or statistics that are shown in the table. The default Sort By value is the Optimize On parameter.

To select the column to sort by:

1. Click the **Sort By** arrow and select the parameter or statistic to sort by.
2. Select **Descending** or **Ascending** or click the column heading to sort by that column.
3. Click again on the column heading to change the sort order.

The column heading for the current **Sort By** column is displayed in a different color, and the stack of lines next to the column name indicates whether it is descending (the lines get smaller from top to bottom) or ascending (the lines get larger from top to bottom).

Setting Max Best Results

This setting limits the number of rows to include in the results table. If this number is set to a number lower than the total number of steps, only the best results will be displayed. This value must be an integer in the range of 1-2000. The default setting is 100.

Display Chart With

These settings determine whether the chart display will be updated, and if it will, what values will be used for the update. Choices include:

Options	Description
Current Value	After x steps have been completed, displays the chart with the value for that row.
Best Value	After x steps, updates the chart with the best value (if it changed).
Best for Refresh	Displays the best value within x steps, and is updated after x steps.
No Update	The chart associated with this TSO run is not updated while TSO is running.

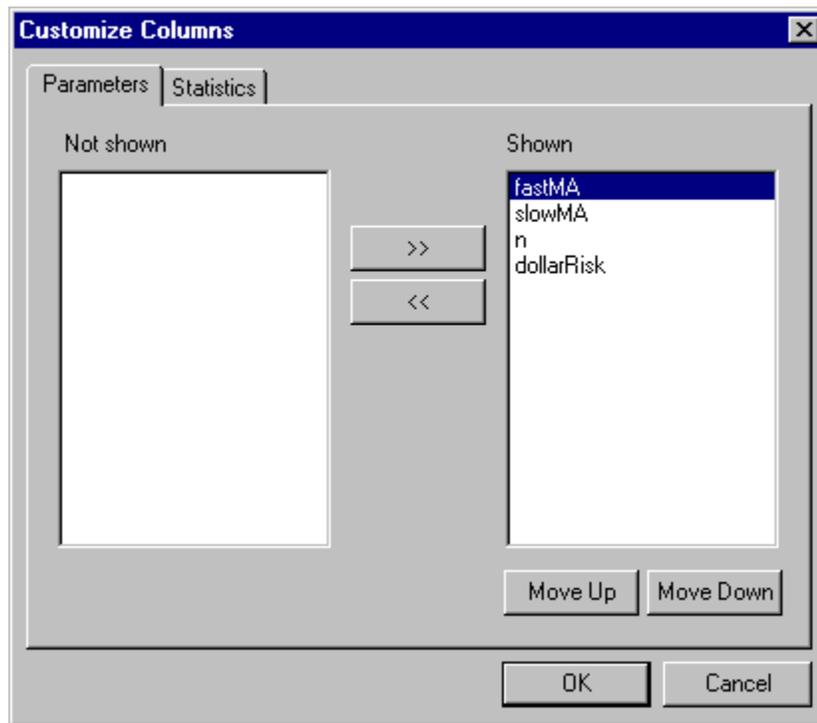
Setting After Steps

The after steps setting determines how often the chart is displayed or updated with the results table data. If No Update was selected in the Display Chart with box, you won't be able to set the after steps. This value must be an integer in the range of 1 to 100. The default setting is 5.

Customizing Columns in the Table

Users can customize the columns in the **TSO** window.

1. Right-click the tab title.
2. Select **Customize Columns**. This displays the **Customize Columns** window.



By default, all parameters and statistics used in the Trade System are displayed as columns in the results table. However, you can select the parameters you want to see, and what order they'll be displayed in.

Even if you customize the columns, you can still display all the parameters or statistics quickly by clicking on the square buttons to the left of "Parameters" or "Statistics."

The square buttons next to **Parameters** and **Statistics** in the line above the column headings reflect whether the columns have been customized.

Button Label	Description
Minus sign (-)	All Parameters or Statistics are displayed, but custom columns have been selected. Click to display custom columns only.
Plus sign (+)	Custom columns are displayed. To display all columns, click the button.

To select columns to include in the results table

1. Click the **Setup** button or right-click **Parameters** or **Statistics** in the line above the column headings.
2. Select **Customize Columns**.
3. Select the **Parameters** tab or the **Statistics** tab. Both tabs work the same way, but these instructions will refer to Parameters, since that is the first tab and is the one shown above.
4. Click the >> and << buttons to move parameters between the **Shown** and **Not Shown** columns. The default setting is to display all parameters and statistics.
5. Select a parameter and click the **Move Up** or **Move Down** buttons to change the order in which the parameters are shown.
6. When the **Parameters** and **Statistics** are arranged, click **OK**.

When the **Parameters** and **Statistics** buttons are pluses, the customize column settings are applied to the results table, and only those selections appear. If the buttons are minuses, that means that all parameters or statistics are shown.

To adjust a column's width

1. Click the right side border of the column you want to adjust
2. Drag the border to the right to expand or to the left to shrink the column width.

Starting the Optimizer

After you have set everything up in the **TSO Setup** window and the **Table Settings** area of the **Optimizer** window, it's time to optimize your Trade System.

Click **Start**.

The first row in the table is the current step result, regardless of the table sorting settings. After the optimization is completed, the current line is no longer displayed.

As each step runs, the Optimizer's progress is reported in the top section of the window and rows are added to the table. Every other row is colored, to make the results easier to read. The default colors display negative numbers in red.

You can look at the results of a run in a chart format by double-clicking on a cell in the row you want to see on the chart. The Trade System graph at the bottom of the chart will reflect the values in the results table.

Creating a New Trade System

If the results of a run indicate that one step's parameter settings are providing the results you want, you might want to create a new trade system that uses those parameters. TSO provides a quick and easy way to create a new trade system with a new name, but with the parameters of the selected row.

1. Right-click a row.
2. Select **Create Tsys Copy with Parameters**.
3. Enter the new trade system name, and click **OK**.

The trade system is created and the new trade system name appears in the **Notes** column for that row.

Launching a Chart with Parameters

After the optimizer has filled in the results table, you might want to view the results as they would appear in a chart. There are two ways to launch a chart with selected parameters.

Right-click a row, and select **Launch Chart with Parameters** or double click a row.

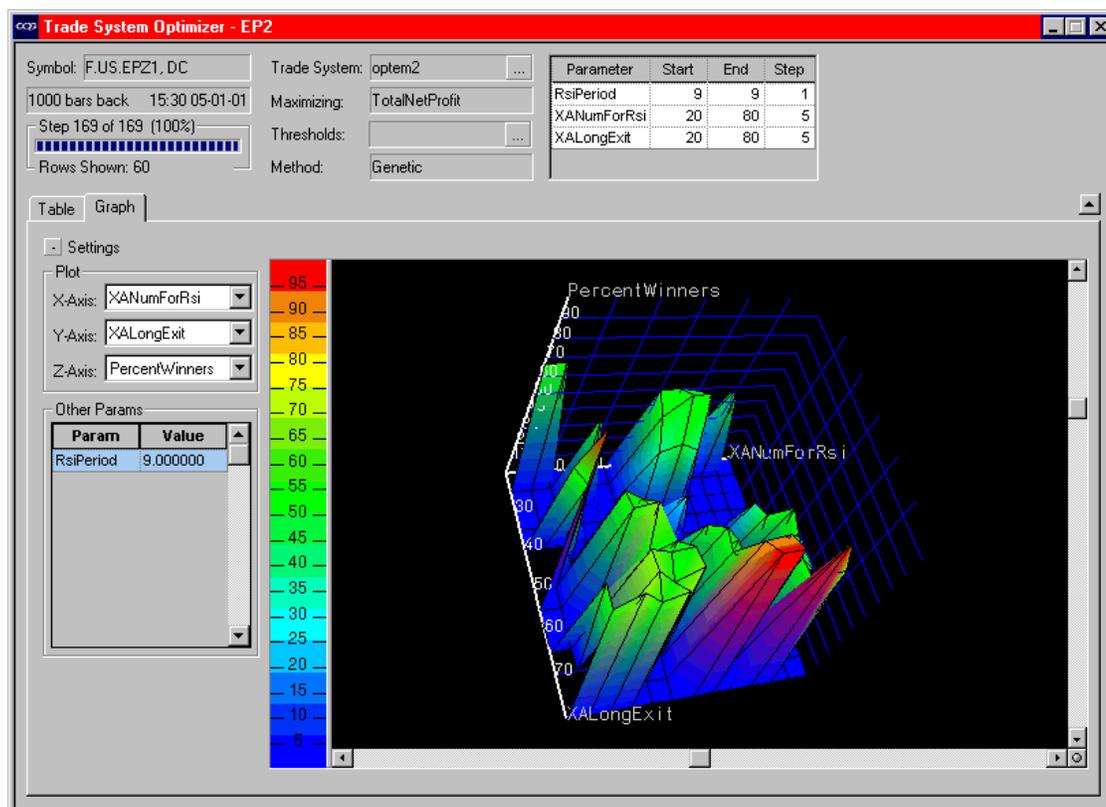
The chart is displayed, and the Trade System reflects the settings of the selected results table row.

Note: A new TSO, with the current chart information is created whenever a TSO is displayed from a chart.

Displaying the TSO Graph in 3D

The COG 3D TSO graph gives users a clear picture of the interaction of three variables that were used in the TSO run.

1. Run the **TSO**.
2. Click the **Graph** tab.

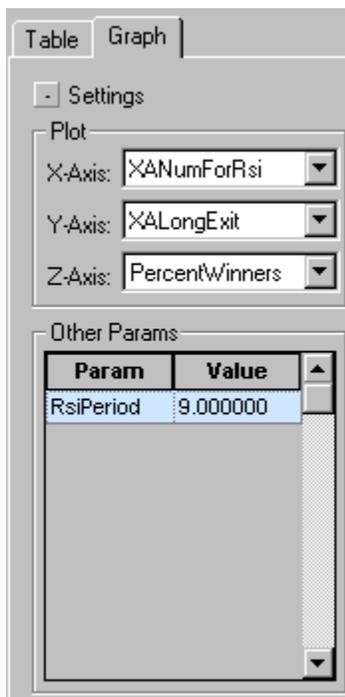


From the **3D Control Properties** window you can set the display and motion characteristics related to the 3D TSO graph display. The values plotted in each axis are displayed in the Plot area. If the trade system uses other parameters, they are displayed in the Other Params area, where you can adjust their values and immediately view the changes to the graph.

To access the 3D Control Properties window:

1. Right-click in a **3D TSO** window.
2. Select **Properties**.

Adjusting the Values in the 3-D Graph



The **Settings** button turns on or off the display of the **Plot and Other Params** areas. With these settings hidden, the graph expands. When they are displayed, you can make changes that are immediately reflected in the graph.

The **Plot** Area allows you to select values for the X-Axis, Y-Axis, and Z-Axis of the 3-D display.

1. Click the any of the drop down list buttons to select the desired trading systems to be displayed on the X and Y axes and the desired TSO statistic to be displayed on the Z axis.
2. Click the **Graph** tab.
3. Click any Axis list to display the available values.
4. Click to select a value.

The graph updates immediately to display the selected value on the selected axis.

Note: Your axes settings won't change when you specify different TSO runs. However, they do revert back to the default settings when you close TSO and reopen it.

The **Other Parameters** area allows you to adjust the values of other parameters that are not used as an axis, but are part of the Trading System upon which the current TSO run is based.

To change the value of one of these Other Params

Click the parameter's value and select a value from the list. The 3-D graph adjusts to reflect the new parameter value.

To pause the optimizer

You can pause the TSO before it completes its run, then complete the run, or clear the values and start another run. To start another run, either using the current Optimizer settings, or new ones, the current results must first be cleared.

To pause the run:

Click the **Stop** button on the **Application** toolbar. The **Stop** button becomes unavailable; the progress bar shows where the run was paused; and the results table is only partially filled.

To continue the run:

Click **Start**. The run continues from the point at which it was paused.

To clear the results table

Once TSO has written results to the results table, a new TSO run cannot be started until the results table is cleared.

Click **Clear**. The results table is cleared, the step progress report is reset to 0, and the start button is available.

To copy the grid to the clipboard

TSO allows you to copy the table results data to the clipboard so you can paste it into another application, such as Microsoft Excel.

1. Click the **Setup** button.
2. Select **Copy All Grid to Clipboard**.
3. The grid data is copied to the clipboard.

To save results to a text file

The table results can be saved to a text file.

1. Click the **Setup** button.
2. Select **Save Results to TXT File**. The **Save As** window is displayed.
3. Enter the file name and location to which you want the text version of the results table saved. A text version of the results table and setup information is saved to the file.

CQG Integrated Client Trading User Guide

November 14, 2012 | Version 13.5

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About this Document

This document is one of several user guides for CQG Integrated Client. This guide introduces you to our trading applications, including the DOMTrader and Order Ticket.

You can navigate the document in several ways:

- Click a bookmark listed on the left of the page.
- Click an item in the Table of Contents.
- Click a blue, underlined link that takes you to another section of the document. To go back, use Adobe Reader Page Navigation items (**View** menu).

If you are looking for a particular term, it may be easier for you to search the document for it. There are two ways to do that:

- Right-click the page, and then click **Find**.
- Press Ctrl+F on your keyboard.

Please note that images are examples only and are meant to demonstrate and expose system behavior. They do not represent actual trading situations.

This document is intended to be printed double-sided, so it includes blank pages before new chapters.

To ensure that you have the most recent copy of this guide, please [go to the user guide page on CQG's website](#).

What's New in this Version

Features

[Account Picker](#)

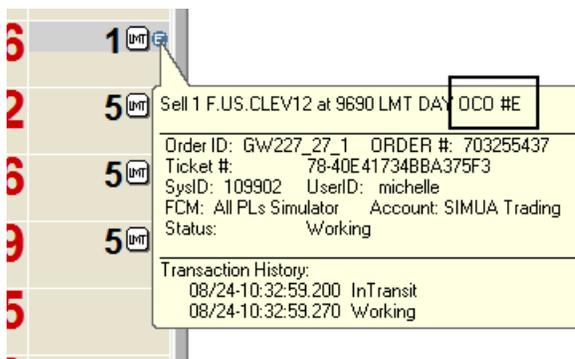
Enhancements

- Working OCO orders are uniquely numbered/lettered with a single digit for identification purposes. Please note that numbers and letters do not indicate the sequence in which orders were placed, as numbers and letters are reused when the order is no longer working.

The identification number/letter is indicated on the information icon:

	556	9703		
STP	538	9702		20 
	559	9701		
	761	9700		
STP	468	9699		50 
	462	9698		
	586	9697	41	
STP	808	9696	24	35 
	833	9695	47	

When you hover the mouse over that icon, you'll notice the identification number/letter indicated at the end of the order:



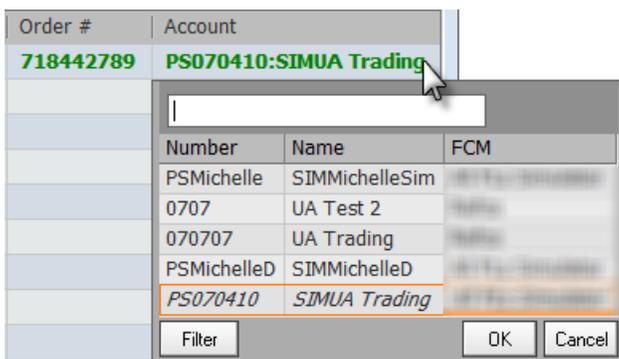
The screenshot shows a tooltip for the order with the identification number '1' (indicated by a red '3' in the background). The tooltip contains the following information:

- Order ID: GW227_27_1 ORDER #: 703255437
- Ticket #: 78-40E417348BA375F3
- SysID: 109902 UserID: michelle
- FCM: All PLs Simulator Account: SIMUA Trading
- Status: Working
- Transaction History:
 - 08/24-10:32:59.200 InTransit
 - 08/24-10:32:59.270 Working

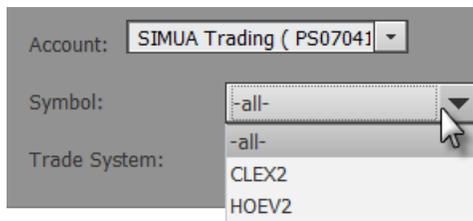
The number/letter is also on the Orders and Positions window as icons and in the order number column:

	X	RPL	MKT	Size	Place Time	Order #
⊖	X	RPL	MKT		10:32:59	OCO #E
⊖	X	RPL	MKT		10:32:59	OCO #E
⊕	X	RPL	MKT		10:32:50	OCO #
⊕	X	RPL	MKT		10:32:50	OCO #
⊖	X	RPL	MKT		10:32:30	OCO #C
⊖	X	RPL	MKT		10:32:30	OCO #C
⊖	X	RPL	MKT		10:32:14	OCO #B
⊖	X	RPL	MKT		10:32:14	OCO #B
⊖	X	RPL	MKT		10:32:07	OCO #9
⊖	X	RPL	MKT		10:32:07	OCO #9
⊖	X	RPL	MKT		10:31:58	OCO #8
⊖	X	RPL	MKT		10:31:58	OCO #8
⊕	X	RPL	MKT		10:31:48	OCO #7
⊕	X	RPL	MKT		10:31:48	OCO #7
⊖	X	RPL	MKT		10:31:39	OCO #6
⊖	X	RPL	MKT		10:31:39	OCO #6
⊖	X	RPL	MKT		10:31:22	OCO #5
⊖	X	RPL	MKT		10:31:22	OCO #5
⊕	X	RPL	MKT		10:31:04	OCO #4
⊕	X	RPL	MKT		10:31:04	OCO #4
⊖	X	RPL	MKT		10:28:40	OCO #2
⊖	X	RPL	MKT		10:28:40	OCO #2
⊖	X	RPL	MKT		10:25:48	OCO #3
⊖	X	RPL	MKT		10:25:48	OCO #3
⊖	X	RPL	MKT		10:25:25	OCO #2
⊖	X	RPL	MKT		10:25:25	OCO #2
⊕	X	RPL	MKT		10:25:04	OCO #1

- When the **Do not reset price scale after order action** check box is selected in Trading Preferences, the price remains the same when you change accounts. Applies to DOMTrader, Order Ticket, and Order Ticket.
- Traders are able to change the account of a working order on the Orders and Positions window:



- When you change the account on the Orders and Positions window, the account changes on grouped trading windows and linked child trading windows. Please note that to change symbol at the same time, a symbol must be selected from the **Symbol** menu on the Orders and Positions filter panel:



- Right-click the title bar of the Quote SpreadSheet and Enhanced Quote SpreadSheet to open Account Picker. When you change the account on the QSS or EQSS, the account is changed in grouped and linked child trading windows. Please note that you must be in trading mode.
- Color implied buys and sells on the Spread Matrix and Spread Pyramid:



Related Documents

CQG IC user guides:

- [CQG Basics](#)
- [Charting and Studies](#)
- [Advanced Analytics](#)
- [CQG Spreader](#)
- [Options](#)

[CQG Tradable Symbols](#)

[Symbology for Exchange-Traded Strategies](#)

[CQG Order Type Matrix](#)

Customer Support

CQG Customer Support can be reached by phone from Sunday, 2:30 p.m. CT through Friday, 5:00 p.m. CT. These hours also apply to Live Chat.

United States	1-800-525-1085
United Kingdom	+44 (0) 20-7827-8270
France	+33 (0) 1-74-18-07-81
Germany	+49 (0) 69-6677-7558-0
Japan	+81 (0) 3-3286-6877
Russia	+7 495-795-2409
Singapore	+65 6494-4911
Sydney	+61 (2) 9235-2009

E-mail websupt@cqg.com 24 hours a day, 7 days a week.

If you have questions about CQG documentation, please [contact the help author](#).

Trading with CQG IC

CQG offers a selection of order entry and order management applications that suit a variety of trading styles.

Order Entry:

- [DOMTrader](#)
- [Order Desk](#)
- [Order Ticket](#)
- [SnapTrader](#)
- [Spreadsheet Trader](#)
- [QSS](#)

Order Management:

- [Fill Report](#)
- [Orders and Positions](#)
- Trading Parameters (Spread and [Aggregation](#))

Opening Trading-Related Applications

Click the **Trade** button on the main toolbar, and then click the name of the trading window you want to open.

- If you do not have any instances of that window open, then that trading window is opened.
- If you have an instance of the window open, and that window is currently active (focus is on that window), then another instance of the window is opened.
- If you have an instance of the window open, and that window is not currently active, then the open instance becomes active.

If the button is not displayed, click the **More** button, and then click **Trade**.

Order Ticket

The **Order Ticket** is an order entry application that combines an order ticket with elements of the DOMTrader and Orders and Positions window.

The DOM area contains buy, volume, price, and sell columns. You can also add several types of depth-of-market columns.

Instead of entering orders by dragging and dropping from the price column as on the DOMTrader, you use buy and sell buttons to place orders using the Order Ticket.

At the bottom of the order ticket is the Orders and Positions area, which operates much like the standalone [Orders and Positions](#) window.

To open the Order Ticket, click the **Order** button on the toolbar. If the **Order** button is not displayed, click the **More** button, and then click **Order**. You can also click the **Trade** button and then click **Order Ticket**.

Order Ticket Components

Some of the Order Ticket components are optional and are displayed based on the preferences you have set up.

To check or change those preferences, click the **Setup** button, and then click **Trading Preferences**.

For more information about Order Ticket Display Preferences, see "[Setting Order Ticket Display Preferences](#)" on page 69.

Title bar (Order Ticket)

The **Order Ticket** title bar displays the selected contract and account information. Optionally, it also displays the [Sound Board button](#).

Hover your mouse on the title bar to open a tool tip with contract, account, and position information.

To learn how to change accounts, see "[Account Picker](#)" on page 133.

Symbol tabs (Order Ticket)

The DOM area has four tabs, so that you can monitor and trade more than one symbol on a single Order Ticket.



The tabs are color-coded:

Red (burgundy) tab = short

Green tab = long

Black tab = working order with no position

A thermometer representing the current market standing of the symbol as well as the symbol are displayed on each tab. The thermometer gives a graphic indicator of the current market standing relative to its opening, high and low prices. It shows the High to Last (Red), Low to Last (green), and Open (yellow triangle) for that symbol for the current day. The close or last price is indicated by the change of color from red to green. If the thermometer displays all yellow, the data is not available, and you cannot trade the symbol.

The number on the right is net change. For options, the current strike price is also displayed.



To see all of the tabs, then click and drag the dotted splitter line:



Current working orders, position, and OTE (Order Ticket)

The Order Ticket displays the current position and Open Trade Equity (OTE) or OTE +PL (closed profits and losses for the day) for the selected symbol and account just below the tabs. If there is no position for this account, the display states, "No position."

Right-click the position details to reverse or liquidate the position. This field is optional.

To the left of the position is the number of working buy orders. On the right of the OTE is the number of working sell orders.

1 working buy order, long 1, up \$600, and 1 working sell order:

1	L 1 @ 85100	600.00	1
---	-------------	--------	---

If related instruments are part of a strategy's position, an "N" is displayed near the position to indicate the combined net position.

DOM area

This area resembles the DOMTrader. For details about the columns, see "[DOMTrader Ladder](#)" on page 49.

	26K	•	85475	1444	
	34K	♦	85450	1008	
LMT	0	●	85425	986	LMT
	7	▼	85400	163	
	34K	●	85375	602	
LMT	28K	●	85350	912	STP
	22K	•	85325	1050	
	33K		85300	858	
LMT	30K		85275		STP
	21K		85250		
	15K		85225		
LMT	22K		85200		STP

You can add additional DOM columns to the DOM area. For an explanation of these columns, see "[Depth of market \(DOM\) columns \(Order Ticket\)](#)" on page 73.

To understand the display of orders in the DOM area, see "[Viewing Order Status](#)" on page 193.

Note that on the Order Ticket, you must use the buy and sell buttons to place orders; you cannot drag and drop a price.

Buy and Sell buttons (Order Ticket)

Place orders using the Order Ticket by clicking the buy and sell buttons. You choose which buttons to display in [preferences](#).

There are a minimum of four buttons displayed: buy and sell limit and stop buttons. The buttons reflect the price selected on the DOM area.

Add buy and sell market buttons to increase the number to six.

Add inside market buttons to the limit, stop, and market buttons to increase the number to ten. These buttons also display the current DOM value.

Hover you mouse over a button to display the order details (Sell 1 @Bid 134325 DAY):

Buy 1 134350 LMT DAY	Sell 1 134350 LMT DAY
Buy 1 134325 LMT DAY	Sell 1 134325 LMT DAY
Sell 1@Bid 134325 DAY	
Buy 1 @MKT	Sell 1 50 @Offer 134350
Buy 1 50 @Offer 134350	Sell 1 203 @Bid 134325
Buy 1 203 @Bid 134325	Sell 1 @MKT

Additional limit and stop buttons are displayed if you select trailing limits and stops:

Buy 1 134150 TLMT DAY	Sell 1 134150 TLMT DAY
	LMT
LMT	Sell 1 134150 TSTP DAY
	STP

When the Order Ticket is at its smallest size, the button text changes accordingly:

BUY 1 134150 TLMT DAY	SELL 1 134150 TLMT DAY
	LMT
	SELL 1 134150 TSTP DAY
LMT	STP
Buy 1 @MKT	Sell 1 @Off
Buy 1 @Off	Sell 1 @Bid
Buy 1 @Bid	Sell 1 @MKT

Order Entry field

This field allows you to enter orders from your keyboard, including comments.



Order Entry: Submit

To enable keyboard order entry, click the **Setup** button, and then click **Trading Preferences**. The **Trading Preferences** window opens. In the **Function** buttons area, click the **Keyboard order entry** checkbox.

See also: [To enter an order with the Order Entry field](#) and "[Entering Orders with Comments](#)" on page 152.

Size buttons (Order Ticket)

The size buttons allow you to change the quantity that is used when you place orders.



1 1 5 10 20 50 100

The entry box (the box on the left) displays the default order quantity. You can type a number to override the default.

If you are placing an iceberg order, the entry box contains both the total size and the visible size.



1000,10 1 5 10 20 50

You set the button values in [Risk](#) preferences. The default visible size value is set in [Smart Orders](#) preferences.

Price field (Order Ticket)



85250 - +

Enter a price in the field or use the buttons to increase and decrease the price.

Right-click the price to return to current market.

This field is especially helpful for entering a price that is not visible due to [compression](#) or [split market](#). Type a price, then **Enter** to change the price on the **Buy** and **Sell** buttons.

This field is optional.

Options Model button (Order Ticket)

This button is shown for options.



Click it change the options model you wish to use.

Options Greek value (Order Ticket)

This menu is displayed for options.



Use this drop down to change the **Greek** value that is displayed in the **Greek** column on the Order Ticket.

Order duration menu (Order Ticket)

DAY, **GTC** (good-till-cancelled), **GTD** (good-till-date), **FAK** (fill and kill), **FOK** (fill or kill), **OO** (on open), **OC** (on close), **DAY GTT** (good-till-time), and **ICBG** (Iceberg) are the order duration options on the Order Ticket.

Not all options are available on all exchanges. If you select GTD, a date field is also displayed. If you select DAY GTT, a time field is displayed.



- **DAY** is the default. If a DAY order is unfilled at the close of the trading session, it is automatically canceled.
- **GTC** orders are left open until canceled by the trader.
- **GTD** orders are left open until the date specified by you.
- **FAK** orders require that the remaining quantity of an order be cancelled after a partial fill.

- **FOK** orders require that the entire quantity be executed immediately or the order is cancelled.
- **OO** orders are placed at the market open price. If the order cannot be filled at the open, then it is cancelled. For a limit-on-open order, the market open price must meet the limit condition.
- **OC** orders are filled near the market close. If the order cannot be filled at the close, then it is cancelled. For a limit-on-close order, the order is executed only if the price is better than the limit price.
- **DAY GTT** orders are left working until the time specified by you. (Enabled if GTD orders are enabled.) The date picker is visible only if the difference between the time the order is placed and the end of the last session of the nearest trading day is greater than 24 hours. If you set the time later than the last minute of the last session of the nearest trading day, the time is automatically set to the last minute of the last session. Parked DAY GTT orders retain the GTT setting.
- **ICBG** orders are limit DAY or GTC orders that have both a total quantity and a display quantity that is shown publicly on the order book. These orders must be enabled by CQG and by you in Trading Preferences.

Parked check box

Click this button to hold an order.



The order is not sent until the **Activate** button is clicked (on the Parked window in the Orders and Positions area).

Stop management menu (Order Ticket)

Stop, **Stop Limit**, **DOM Triggered Stop**, and **DOM Triggered Stop Limit** are the stop management options.



- **Stop** is the default. A stop order becomes a market order when the stop price is hit and a stop-limit order becomes a limit order when the stop price is hit.
- **Stop Limit** orders allow the trader to set a difference between the stop price and the limit price.
- **DOM Triggered Stop** orders behave like stop orders, but are not triggered until the bid/ask quantity falls below the order's trigger quantity (DOM threshold). These orders must be enabled by CQG and by you in [Smart Orders Trading Preferences](#).

You can change the default in [Limit & Stop Orders Preferences](#).

Trailing Order menu management (Order Ticket)

Trade trailing limits or stops using this menu.



A trailing limit order tracks the market automatically adjusting its price level position in the exchange's order book. For a buy order, as the best bid/offer/trade (depending on your settings) moves up, your order moves up with it based on the trailing offset. When the best bid/trade/offer trade moves down, your order holds. When the best bid/offer/trade matches your order price, the order executes.

Trailing Stop orders adjust their trigger price in concert to the direction of the market on a tick-by-tick basis, initially trailing the market with the same distance to the market price when the order is first placed. The trigger price of a trailing sell stop order automatically steps higher with the market for each up tick, but does not step lower.

These orders must be enabled by CQG and by you in [Smart Orders Trading Preferences](#).

Manual Fills button (Order Ticket)

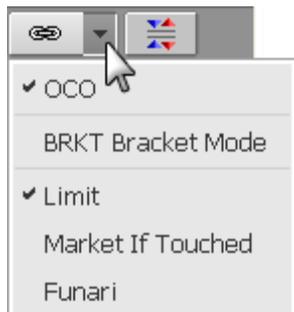
You have the ability to enter fills manually for those trades that did not occur through CQG to be reconciled against the statement. All electronic and pit contracts can be entered. Once the statement for the day is received, the manual fills are reconciled against the statement and then permanently removed.

Click this button to indicate the next order you place is a manual fill.



To learn how to enter Manual Fills, see "[Entering Manual Fills](#)" on page 156.

Special Orders button (Order Ticket)



The Special Orders menu offers order-cancels-order, bracket, limit, market-if-touched, and Funari order types.

OCO: A multi-part order. If one part of the order is executed, then all other parts are cancelled.

Bracket: A type of order-places-order (OPO) where filling, for example, a buy order triggers either a sell OCO (a profit target order and a stop loss order), a profit target order, or a stop loss order. In the case of an OCO, if one of those orders is filled, then the other order is cancelled.

These orders must be enabled by COG and by you in [Smart Orders Trading Preferences](#).

LMT: An order that is triggered when the your specified limit price is hit.

Market-If-Touched: An order that becomes a market order when a specified price is reached. The order is executed at the first available price at the time the specified price is reached.

Funari: For this order type, any unfilled order quantity is executed as a market order at either the morning close or afternoon close.

To learn how to place an OCO, see "[Entering Order-Cancels-Order \(OCO\) Orders](#)" on page 166.

To learn how to enter bracket orders, see "[Entering Bracket Orders](#)" on page 159.

Compression button (Order Ticket)

Symbols HUE, NGE, RBE, HOE, PLE, and NGH can be compressed, which means that ticks can be viewed in a quantity different from the exchange default. The default value for compression is five.

Click the compression button to turn compression on (orange background) and off (gray background).



Data is aggregated in the opposite direction of the market. Bids are aggregated down, and asks are aggregated up. The traded volume is aggregated to the closest visible price up. The daily high price is rounded up, and the daily low price is rounded down.

Actual ticks, and not compressed ticks, are used for the offset value for stop limit orders. Order types are also determined by actual ticks.

Orders with fixed prices are visible only if those price values match the compressed price value displayed.

Split Market Compression tool (Order Ticket)

Use this tool with symbols that have a gap between best bid and best ask, as it compresses prices between the best bid and best ask.

Click to move from no compression to maximum compression. Right-click to move the other way.

There are four compression modes:



No compression (default).



Compress to hide gap but show nearest best bid and ask prices: price rows are hidden if they are between the price in DOM ladder below best bid and the price above the best ask.



Compress to hide market gap: price rows are hidden if they are between the best bid and best ask.



Compress to hide empty prices: price rows are hidden if they are between rows with DOM values. All bids and asks are displayed without gaps.

Orders and Positions area

The **Orders and Positions area** provides order detail information in six tabs: All, Working, Filled, Cancelled, Exceptions, and Parked. It is a version of our [Orders and Positions](#) window.

	Size	Symbol	Ty	Price
<input type="checkbox"/> X RPL MKT <input type="checkbox"/>	B 100	CLEH2	<input type="checkbox"/>	9970
<input type="checkbox"/> X RPL <input type="checkbox"/>	S 5	ENQH2	<input type="checkbox"/>	243875
<input type="checkbox"/> X RPL <input type="checkbox"/>	B 5	SPREAD(0.5'EP-0.2'ENQ)	<input type="checkbox"/>	16750
<input type="checkbox"/> X RPL <input type="checkbox"/>	B 10	ZNEH2	<input type="checkbox"/>	129300
<input type="checkbox"/> X RPL <input type="checkbox"/>	B 10	TYAH2	<input type="checkbox"/>	129300
<input type="checkbox"/> X RPL <input type="checkbox"/>	B 20	AGGR(TYA&ZNE)	<input type="checkbox"/>	129300
<input type="checkbox"/>	B 10	EPH2		
+ <input type="checkbox"/>	B 100	CLEH2	<input type="checkbox"/>	10058
+ <input type="checkbox"/>	B 100	CLEH2	<input type="checkbox"/>	10057
+ <input type="checkbox"/>	B 20	CLEH2	<input type="checkbox"/>	10057
+ <input type="checkbox"/>	B 10	CLEH2		
<input type="checkbox"/>	B 1	CLEH2		

Buttons at the bottom: X(5) Buys, X(1) Sells, X(6) All, X(6) Global, X All Liq All

Click the left and right arrows buttons to view tabs that are out of view. Click the **All** button to see all symbols and not only the symbol associated with that tab.

To learn more about using this area to manage orders, see "[Managing Orders and Positions](#)" on page 249.

Cancel buttons (Order Ticket)

These buttons at the bottom of the Order Ticket are used to cancel groups of orders. The number of orders that will be cancelled is displayed on the button in parentheses.



X Buys = cancels all buy orders for that symbol and contract month

X All = cancels all orders for that symbol regardless of contract month

X All/Liq All = cancels all orders for all symbols on the current account and liquidates all positions for the current account

X Global = cancels all orders for all accounts

X Sells = cancels all sell orders for that symbol and contract month

If orders of the given type have not been placed, the button is not be available and appears dimmed.

To display cancel buttons, go to the **Display** tab in Trading Preferences and select the **Cancel/Activate All** buttons check box and the check boxes for each button you want displayed.

Resizing Window Elements



The Order Ticket areas can be re-sized using the splitter bar between the DOM area and the buttons and between the buttons and the Orders and Positions area.

Place your mouse cursor over the splitter bar until it looks like one of the pictures above. Drag the bar until you have the configuration you want.

Order Ticket Toolbar

The Order Ticket toolbar includes these buttons:

Logon button

This button opens the Order Routing Logon window.

To read more about logging on to trade, see "[Logging On](#)" on page 113.

Logoff button

This button disconnects you from order routing.

To read more about logging off, see "[Logging Off](#)" on page 113.

Center button

This button returns the display to the current bid/ask.

Fill Report button

This button opens a [fill report](#).

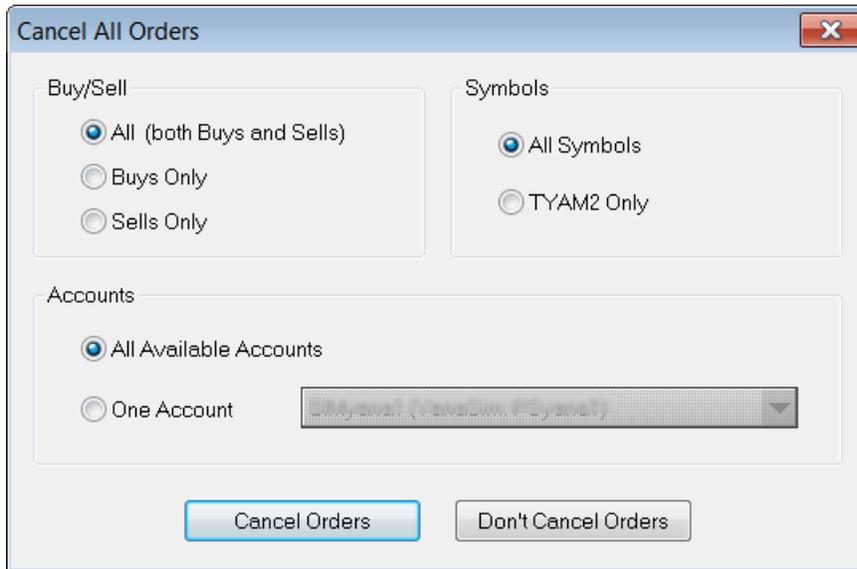
OrdPos button

This button opens the Orders and Positions window.

X Global button

Click this button to cancel all working orders.

Right-click this button to open a window that allows you to select the account, side, and symbol to cancel:



Activate All

Click this button to return suspended orders to working.

Park All

Click this button to suspend all working orders. Right-click this button to select which orders to suspend: all, buys, sells, all symbols, a particular symbol, all accounts, a particular account.

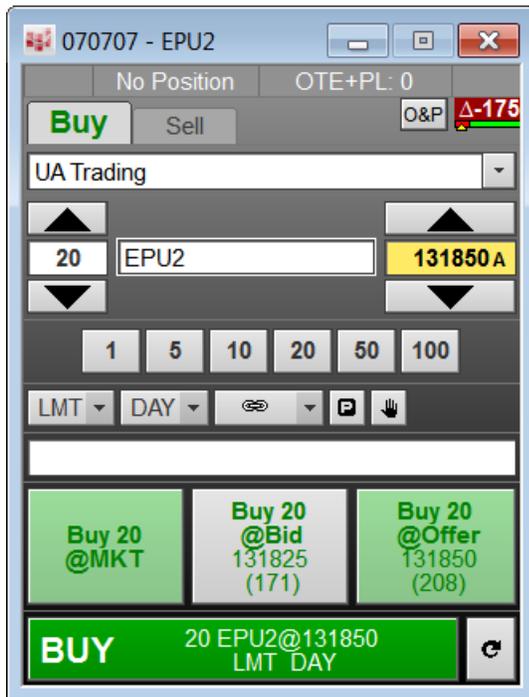
Params button

Opens the Set Up Trading Parameters window.

Order Desk

BETA

Order Desk provides flexibility to those traders who prefer to use separate applications for market data and order placement. You can link Order Desk to any of CQG's market monitoring tools to enhance your views of the markets you're trading.

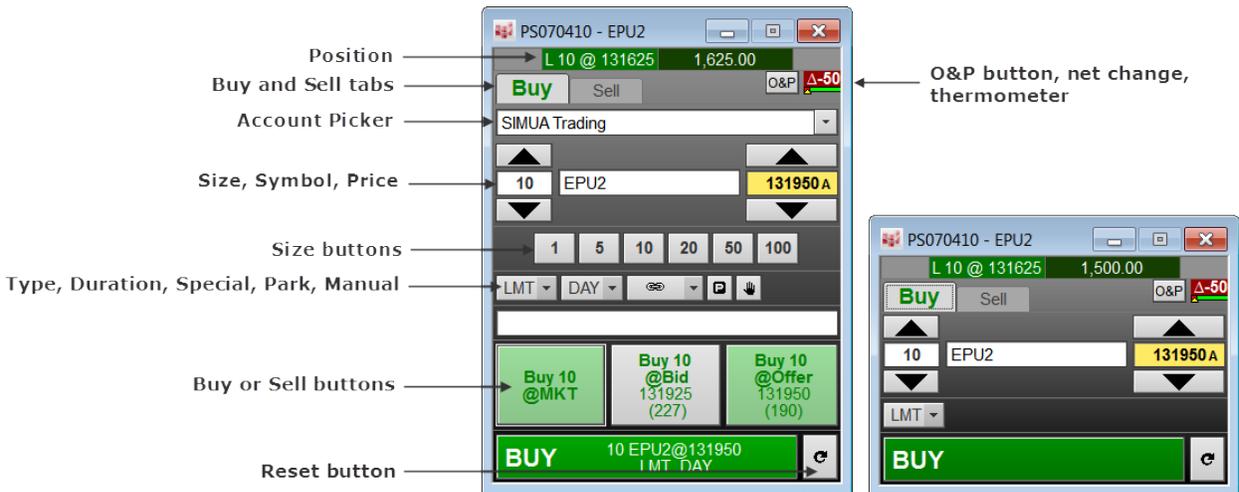


To open Order Desk, click the **OrdDesk** button on the toolbar. If the **OrdDesk** button is not displayed, click the **More** button, and then click **Order Desk**. You can also click the **Trade** button and then click **Order Desk** or right-click the **Order** button and then click **Add Order Desk**.

Order Desk requires an enablement.

Order Desk Components

Order Desk [preferences](#) allow you to see as much or as little as you want as part of the display. This image on the left shows the Order Desk with every component displayed, while the image on the right shows the Order Desk with only required components displayed. Preferences also allow you to change the placement of components.



The Order Desk window components change based on whether you're trading outright or synthetic strategies.

Outrights display includes:

Component	Required
Account Picker	No.
Size/Symbol/Price	Yes. Includes Order Size, Symbol, and Price.
Order Size Buttons	No.
Type/Duration/Strategy	Type = yes Duration, Special Orders, Park Order Mode, and Manual Order Mode= no.
Order Comment	No.
Inside Market Buttons	No. Includes Market, Bid, and Offer.
Place Order/Reset	Yes.

Strategies display includes:

Component	Required
Account Picker	No.
Size/Symbol/Price	Legs button = no. Order Size, Symbol, and Price = yes.
Order Size buttons	No.
Type/Duration/Strategy	Ratio, Leg to Work, and Type = yes. Duration and Aggregation Mode = no.
Order Comment	No.
Inside Market Buttons	No. Includes Market, Bid, and Offer.
Place Order/Reset	Yes.

By default all rows and all controls are turned on.

The window is not resizable.

Current working orders, position, and OTE (Order Ticket)

The Order Desk displays the current position and Open Trade Equity (OTE) or OTE +PL (closed profits and losses for the day) for the selected symbol and account at the top of the window. If there is no position for this account, the display states, "No position."

Right-click the position details to reverse or liquidate the position. Double-click the position to open the Orders and Positions window.

To the left of the position is the number of working buy orders. On the right of the OTE is the number of working sell orders.

10 working buy lots, long 6, up \$1575.00:

10 L 6 @ 124900 1,575.00

If related instruments are part of a strategy's position, an "N" is displayed near the position to indicate the combined net position.

Buy and Sell tabs



Switch between **Buy** and **Sell** tabs either by clicking the other tab or by using B and S keys on your keyboard.

When you select **Place Order** from another application, such as QSS, Portfolio Monitor, or a chart, and Order Desk is opened, the tab and price are automatically selected:

- Ask = Sell tab populated with ask price
- Bid = Buy tab populated with bid price

O&P button



Click this button to open the Orders & Positions window.

Net change and thermometer



Net change is displayed above the thermometer.

The thermometer represents the current market standing of the symbol as well as the symbol. The thermometer gives a graphic indicator of the current market standing relative to its opening, high and low prices. It shows the High to Last (Red), Low to Last (green), and Open (yellow triangle) for that symbol for the current day. The close or last price is indicated by the change of color from red to green. If the thermometer displays all yellow, the data is not available, and you cannot trade the symbol.

Account Picker

Click the arrow on the **Account Picker** field to change accounts.

See also: [Using Sub-Accounts with Order Desk](#)

Size



Size can be changed in three ways:

- type a new value
- use the up and down arrows
- use [Size buttons](#)

For iceberg orders, the total order size is followed by the display size.

Symbol and Legs

EPH2

Type a symbol, formula, or QNumber in this field.

Right-click the Order Desk to create or edit a QFormula.

Strategy symbols include a **Legs** button, which opens an Order Desk for each symbol in the strategy. Right-click the **Legs** button to choose which trading application the legs open in:



Price



Either type a price value or use the up and down arrows to change the price.

If the selected price is equal to the best bid or ask, "B" or "A" indicates so. If market is closed, a checkmark is displayed.

Right-click the price or arrows to return to current market.

Coloring works in this way:

Buy side:

- When the price is below market, the cell background is the bid color selected in preferences.
- When price is at best ask or above, the cell background is the aggressive color selected in preferences.
- When the limit/stop preference tick level is hit, the aggressive color becomes darker:



Sell side:

- When the price is above market, the cell background is ask color selected in preferences.
- When the price is at best bid or below, the cell background is the aggressive color selected in preferences.
- When the limit/stop preference tick level is hit, the aggressive color become darker.

If the market is closed, the settlement price is displayed with a gray background.

If the order is a market order, the background is gray also.

In all other cases, the background is white.

[Go to Buy/Sell Color Preferences](#)

Size buttons



Click a button to change the order quantity.

You set the button values in Risk trading preferences. The default visible size value is set in Smart Orders trading preferences.

Type menu



Select an order type from this menu, which contains all available order types for the current symbol and account.

For buys, when the price is below the market, order type shall be set to default limit order type; if the price is above the market, order type shall be set to default stop order type. - For sells, when the price is below the

market, order type shall be set to default stop order type; of the price is above the market, order type shall be set to default limit order type. The distance from the market is specified by 'Range from the current B/A for forcing limits instead of stops' setting in 'Limit

- **Stop** is the default. A stop order becomes a market order when the stop price is hit and a stop-limit order becomes a limit order when the stop price is hit.
- **Stop limit** orders allow the trader to set a difference between the stop price and the limit price. When you select this option, an offset field is displayed:



The image shows a small window with a dropdown menu containing 'STL' and a text input field below it containing the number '12'.

If a negative offset is set in preferences, the field will have a yellow background. Best bid and best ask indicators are shown if the correspondent price is selected.

- **Trailing stop** orders adjust their trigger price in concert to the direction of the market on a tick-by-tick basis, initially trailing the market with the same distance to the market price when the order is first placed. The trigger price of a trailing sell stop order automatically steps higher with the market for each up tick, but does not step lower.
- **Trailing limit** orders track the market automatically adjusting their price level positions in the exchange's order book. For a buy order, as the best bid/offer/trade (depending on your settings) moves up, your order moves up with it based on the trailing offset. When the best bid/trade/offer trade moves down, your order holds. When the best bid/offer/trade matches your order price, the order executes.
- **DOM-triggered stop** orders behave like stop orders, but are not triggered until the bid/ask quantity falls below the order's trigger quantity (DOM threshold).

Duration menu

All durations available for the symbol and account are displayed. They include: **DAY**, **GTC** (good-till-cancelled), **GTD** (good-till-date), **FAK** (fill and kill), **FOK** (fill or kill), **OO** (on open), **OC** (on close), **DAY GTT** (good-till-time), and **ICBG** (Iceberg).

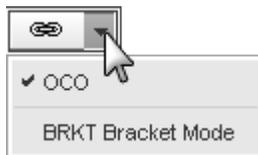
Not all options are available on all exchanges. If you select GTD, a date field is also displayed. If you select DAY GTT, a time field is displayed.



The image shows a dropdown menu with 'DAY' selected. The menu is open, showing a list of options: DAY (with a checkmark), GTC, GTD, FAK, FOK, OO, OC, DAY GTT, and ICBG DAY.

- **DAY** is the default. If a DAY order is unfilled at the close of the trading session, it is automatically canceled.
- **GTC** orders are left open until canceled by the trader.
- **GTD** orders are left open until the date specified by you.
- **FAK** orders require that the remaining quantity of an order is cancelled after a partial fill.
- **FOK** orders require that the entire quantity be executed immediately or the order is cancelled.
- **OO** orders are placed at the market open price. If the order cannot be filled at the open, then it is cancelled. For a limit-on-open order, the market open price must meet the limit condition.
- **OC** orders are filled near the market close. If the order cannot be filled at the close, then it is cancelled. For a limit-on-close order, the order is executed only if the price is better than the limit price.
- **DAY GTT** orders are left working until the time specified by you. (Enabled if GTD orders are enabled.) The date picker is visible only if the difference between the time the order is placed and the end of the last session of the nearest trading day is greater than 24 hours. If you set the time later than the last minute of the last session of the nearest trading day, the time is automatically set to the last minute of the last session. Parked DAY GTT orders retain the time setting.
- **ICBG** orders are limit DAY or GTC orders that have both a total quantity and a display quantity that is shown publicly on the order book. These orders must be enabled by CQG and by you in Trading Preferences.

Special Orders button



The Special Orders menu offers order-cancels-order and bracket order types.

OCO: A multi-part order. If one part of the order is executed, then all other parts are cancelled.

Bracket: A type of order-places-order (OPO) where filling, for example, a buy order triggers either a sell OCO (a profit target order and a stop loss order), a profit target order, or a stop loss order. In the case of an OCO, if one of those orders is filled, then the other order is cancelled.

To learn how to place an OCO, see "[Entering Order-Cancels-Order \(OCO\) Orders](#)" on page 166.

To learn how to enter bracket orders, see "[Entering Bracket Orders](#)" on page 159.

Parked Order Mode button



Click this button (shown on) to place an order that is not sent until the **Activate** button on the [Parked Orders window](#) in Orders and Positions is clicked.

Manual Order Mode button



Click this button (shown on) to indicate the next order you place is a manual fill.

You have the ability to enter fills manually for those trades that did not occur through COG to be reconciled against the statement. All electronic and pit contracts can be entered. Once the statement for the day is received, the manual fills are reconciled against the statement and then permanently removed.

To learn how to enter manual fills, see "[Entering Manual Fills](#)" on page 156.

Order Comment field

Type a comment to accompany your order in this field. The comment can be used to [identify a sub-account](#).

Buy or Sell buttons



Click one of these buttons to place an order at the price indicated on the button. Hover your mouse over the bottom button for order details.

The number in parentheses on button is DOM data.

Reset button



Click this button to:

- remove comments
- change price to market
- change tab to Buy
- select the first (logged on) account in the Account Picker
- return quantity, order type, and duration to default values
- turn off special orders, parked mode, and manual fills

Order Desk Toolbar

Logon button

This button opens the Order Routing Logon window.

To read more about logging on to trade, see "[Logging On](#)" on page 113.

Logoff button

This button disconnects you from order routing.

To read more about logging off, see "[Logging Off](#)" on page 113.

Center button

This button returns the display to the current bid/ask.

Fill Report button

This button opens a [fill report](#).

OrdPos button

This button opens the Orders and Positions window.

X Global button

Click this button to cancel all working orders.

Right-click this button to open a window that allows you to select the account, side, and symbol to cancel:



Activate All

Click this button to return suspended orders to working.

Park All

Click this button to suspend all working orders. Right-click this button to select which orders to suspend: all, buys, sells, all symbols, a particular symbol, all accounts, a particular account.

Params button

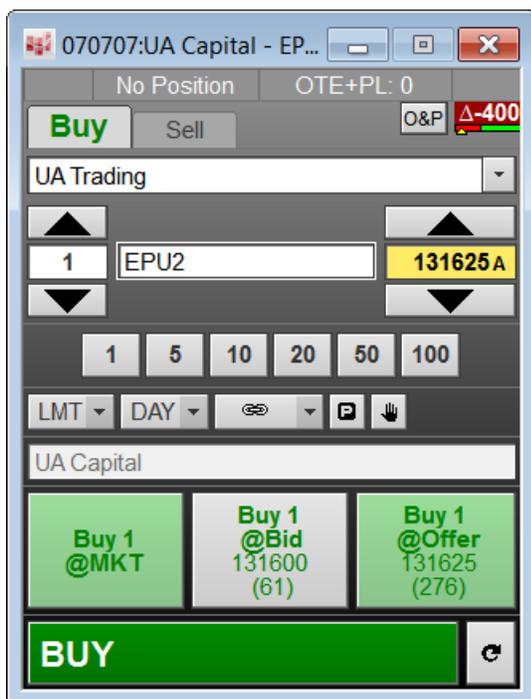
Opens the Set Up Trading Parameters window.

Using Sub-Accounts with Order Desk

Brokers who trade multiple customer accounts can use a sub-account to identify customer orders while trading from a single account. The sub-account identifier is entered as a [comment](#). For example, adding the comment "Acct ABC" to an order creates an Acct ABC sub-account.

When **Enable sub-accounts** is selected in [preferences](#), order comments are displayed in the [Account Picker list](#). All previously created sub-accounts are displayed. You can also [create a new sub-account](#).

The sub-account selected in the Account Picker list is automatically entered in the order comments field. For example, in this image account UA Capital is selected:



The sub-account is also listed in the order comments field on the order confirmation window.

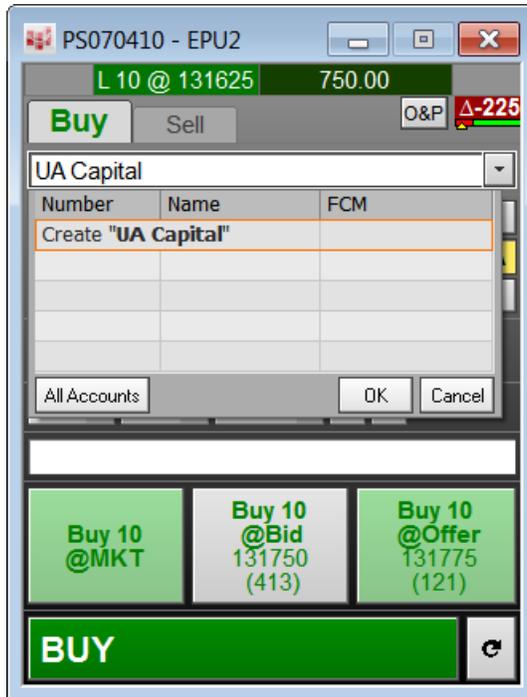
When a sub-account is used:

- The number of working orders and open position applies only to the selected sub-account.
- Cancelling working orders results in cancelling only orders for that sub-account.
- Liquidating or reversing a position results in an order applied to that sub-account.

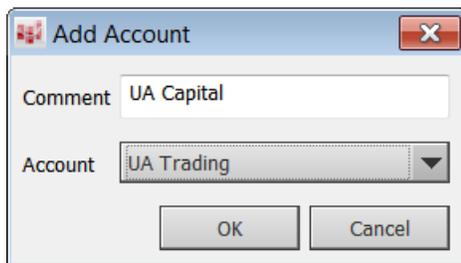
Sub-accounts are also used with the [Orders and Positions window](#).

To create a new sub-account

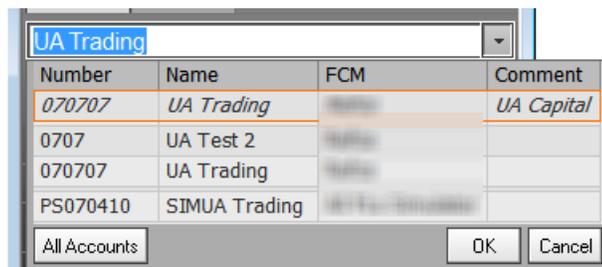
1. Type the name of the sub-account in the **Account** field, and **Enter**. In this example, we've used UA Capital.



2. Map the sub-account to an account, and click **OK**.



The newly created sub-account is then listed on the Account Picker:



DOMTrader

Market transparency is vital for trading on the electronically-traded futures markets. CQG's DOMTrader provides that market transparency as well as the order routing functionality traders need.

The DOMTrader is comprised of a [depth-of-market ladder](#) that displays a range of bid and offer prices; the best bid and offer with size; and trading tools, including order type selectors, buy and sell buttons, quantity buttons, and cancel buttons.

Traders can use the keyboard, the mouse, or a combination of both for order entry. CQG's unique HeadsUp display can also be used with the DOMTrader.

To open DOMTrader, click the **DOMTrd** button on the toolbar. If the **DOMTrd** button is not displayed, click the **More** button, and then click **DOMTrader**. You can also click the **Trade** button and then click **DOMTrader**.

More than one DOMTrader can be opened at a time.

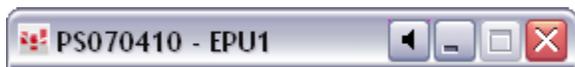
DOMTrader Components

Some of the DOMTrader components are optional and are displayed based on the preferences you have set up.

To check or change those preferences, click the **Setup** button, and then click **Trading Preferences**.

For more information about DOMTrader Display Preferences, see "[_d2h_bmk_Ref190658529_518](#)" on page 39.

Title bar (DOMTrader)



The DOMTrader title bar displays the symbol and account number. Optionally, it also displays the [Sound Board button](#).

Hover your mouse on the title bar to open a tool tip with contract, account, and position information.

To learn how to change accounts, see "[Account Picker](#)" on page 133.

Symbol tabs (DOMTrader)

The DOMTrader has a maximum of four tabs, so that you can monitor and trade more than one symbol on a single DOMTrader.



The tabs are color-coded:

Red (burgundy) tab = short

Green tab = long

Black tab = working order with no position

A thermometer representing the current market standing of the symbol as well as the symbol are displayed on each tab. The thermometer is a graphic indicator of the current market standing relative to its opening, high, and low prices. It shows the High to Last (Red), Low to Last (green), and Open (yellow triangle) for that symbol for the current day. The close or last price is indicated by the change of color from red to green. If the thermometer displays all yellow, then data is not available, and you cannot trade the symbol.

The numbers on the right are the net change and total volume for the day for that contract. For options, instead of volume, the current strike price is displayed.

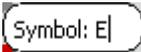


To add a symbol to a tab

With fewer than four tabs in use, the next tab (+) is blank.

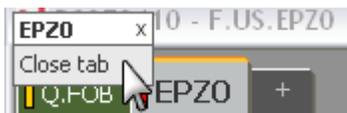
1. Click the blank tab. The tab displays the symbol of the previous tab.
2. Start typing a symbol. This field is displayed: 
3. When you have finished typing the symbol, **ENTER**. The tab displays the symbol.

To change the symbol on a tab

1. Click the tab.
2. Start typing the symbol. This field is displayed: 
3. When you have finished typing the symbol, **ENTER**. The tab name is changed.

To remove a tab

- Right-click the tab you want to remove.
- Click **Close tab**.



To edit a QFormula

1. Right-click the tab.
2. Click **Edit QFormula**.



The Define User Formulas window opens.

3. Make changes.
4. Click **Close**.

Current working orders, position, and OTE (DOMTrader)

DOMTrader displays the current position and Open Trade Equity (OTE) or OTE +PL (closed profits and losses for the day) for the selected symbol and account just below the tabs. If there is no position for this account, the display states "No position."

Right-click the position details to reverse or liquidate the position. This field is [optional](#).

To the left of the position is the number of working buy orders. On the right of the OTE is the number of working sell orders.

Working 4 buy order, long 5, down \$410.00, and working 1 sell order:

4	L 5 @ 137150	(410.00)	1
---	--------------	----------	---

No working orders, short 1, and up \$1,460.00:

S 1 @ 5154	1,460.00
------------	----------

Note: For aggregation, if the position for an aggregated contract is zero, the position reads: "No Position" if every leg of the aggregated contract is flat or "Offset Position" if any leg of the aggregated contract has a non-zero open position.

If related instruments are part of a strategy's position, an "N" is displayed near the position to indicate the combined net position:



Options Model button (DOMTrader)

This button is displayed for options.



Click it to change the options model you wish to use.

Options Greek value (DOMTrader)

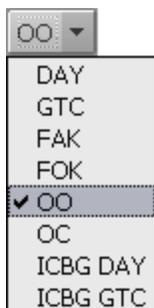
This menu is displayed for options.



Use this drop down to change the **Greek** value that is displayed in the **Greek** column on the DOMTrader.

Order duration menu (DOMTrader)

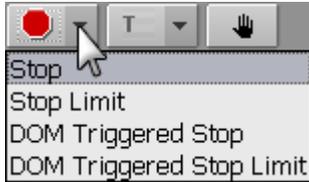
DAY, **GTC** (good-till-cancelled), **FAK** (fill and kill), **FOK** (fill or kill), **OO** (on open), **OC** (on close), and **ICBG** (iceberg) are the order duration options that you can choose on this DOMTrader menu.



- **DAY** is the default. If a DAY order is unfilled at the close of the trading session, it is automatically canceled.
- **GTC** orders are left open until canceled by the trader.
- **FAK** orders require that the remaining quantity of an order is cancelled after a partial fill.
- **FOK** orders require that the entire quantity be executed immediately or the order is cancelled.
- **OO** orders are placed at the market open price. If the order cannot be filled at the open, then it is cancelled. For a limit-on-open order, the market open price must meet the limit condition.
- **OC** orders are filled near the market close. If the order cannot be filled at the close, then it is cancelled. For a limit-on-close order, the order is executed only if the price is better than the limit price.
- **ICBG** orders are limit DAY or GTC orders that have both a total quantity and a display quantity that is shown publicly on the order book. These orders must be enabled by CQG and by you in [Smart Orders Trading Preferences](#).

Stop management menu (DOMTrader)

Stop, **Stop Limit**, **DOM Triggered Stop**, and **DOM Triggered Stop Limit** are the stop management options you can choose on this menu.



- **Stop** is the default. A stop order becomes a market order when the stop price is hit and a stop-limit order becomes a limit order when the stop price is hit.
- **Stop Limit** orders allow the trader to set a difference between the stop price and the limit price.
- **DOM Triggered Stop** orders behave like stop orders, but are not triggered until the bid/ask quantity falls below the order's trigger quantity (DOM threshold). These orders must be enabled by CQG and by you in [Smart Orders Trading Preferences](#).

You can change the default in [Limit & Stop Orders Preferences](#).

Trailing Order management menu (DOMTrader)

Trade trailing limits or stops using this menu.



A trailing limit order tracks the market automatically adjusting its price level position in the exchange's order book. For a buy order, as the best bid/offer/trade (depending on your settings) moves up, your order moves up with it based on the trailing offset. When the best bid/trade/offer trade moves down, your order holds. When the best bid/offer/trade matches your order price, the order executes.

Trailing stop orders adjust their trigger price in concert to the direction of the market on a tick-by-tick basis, initially trailing the market with the same distance to the market price when the order is first placed. The trigger price of a trailing sell stop order automatically steps higher with the market for each up tick, but does not step lower.

These orders must be enabled by CQG and by you in [Smart Orders Trading Preferences](#).

Manual Fills button (DOMTrader)

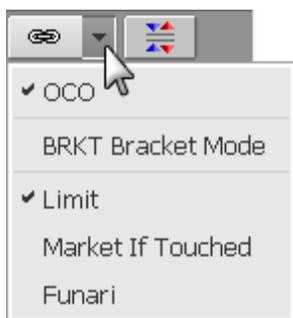
You have the ability to enter fills manually for those trades that did not occur through COG to be reconciled against the statement. All electronic and pit contracts can be entered. Once the statement for the day is received, the manual fills are reconciled against the statement and then permanently removed.

Click this button to indicate the next order you place is a manual fill.



To learn how to enter Manual Fills, see "[Entering Manual Fills](#)" on page 156.

Special Orders button (DOMTrader)



The Special Orders menu provides options for order-cancels-order, bracket, limit, market-if-touched and Funari order types.

- **OCO:** A multi-part order. If one part of the order is executed, then all other parts are cancelled.
- **BRKT:** A type of order-places-order (OPO) where filling, for example, a buy order triggers either a sell OCO (a profit target order and a stop loss order), a profit target order, or a stop loss order. In the case of an OCO, if one of those orders is filled, then the other order is cancelled.
- These orders must be enabled by COG and by you in [Smart Orders Trading Preferences](#).
- **Limit:** An order that is triggered when the your specified limit price is hit.
- **Market-If-Touched:** An order that becomes a market order when a specified price is reached. The order is executed at the first available price at the time the specified price is reached.
- **Funari:** For this order type, any unfilled order quantity is executed as a market order at either the morning close or afternoon close.

To learn how to place an OCO, see "[Entering Order-Cancels-Order \(OCO\) Orders](#)" on page 166.

To learn how to enter bracket orders, see "[Entering Bracket Orders](#)" on page 159.

Compression button (DOMTrader)

Symbols HUE, NGE, RBE, HOE, PLE, and NGH can be compressed, which means that ticks can be viewed in a quantity different from the exchange default. The default value for compression is five.

Click the compression button to turn compression on (orange background) and off (gray background).



Data is aggregated in the opposite direction of the market. Bids are aggregated down, and asks are aggregated up. The traded volume is aggregated to the closest visible price up. The daily high price is rounded up, and the daily low price is rounded down.

Actual ticks, and not compressed ticks, are used for the offset value for stop limit orders. Order types are also determined by actual ticks.

Orders with fixed prices are visible only if those price values match the compressed price value displayed.

Split Market Compression tool (DOMTrader)

Use this tool with symbols that have a gap between best bid and best ask, as it compresses prices between the best bid and best ask.

Click to move from no compression to maximum compression. Right-click to move the other way.

There are four compression modes:



No compression (default).



Compress to hide gap but show nearest best bid and ask prices: price rows are hidden if they are between the price in DOM ladder below best bid and the price above the best ask.



Compress to hide market gap: price rows are hidden if they are between the best bid and best ask.



Compress to hide empty prices: price rows are hidden if they are between rows with DOM values. All bids and asks are displayed without gaps.

Buy and Sell buttons (DOMTrader)

One of the ways to place a market order is by clicking the **Buy MKT** or **Sell MKT** order buttons at the top of the DOMTrader.



TAKE = buy at offer

HIT = sell at bid

The default position for the sell button is on the right side of the pane. You set button location in [Trading Preferences](#).

Order Type indicator (DOMTrader)

If fast-click mode is selected in [Trading Preferences](#), the order type button is displayed between the buy and sell buttons. The button displays the applicable limit or stop icon depending on the settings for the current symbol, such as:



If an order is being placed using drag and drop, the order type is determined by whether the price is above or below the market, and which column, buy or sell, the order is dropped into.

Cancel buttons (DOMTrader)

These buttons below the DOM ladder are used to cancel groups of orders. The number of orders that will be cancelled is displayed on the button in parentheses.



- **X Buys** = cancels all buy orders for that symbol and contract month
- **X All** = cancels all orders for that symbol regardless of contract month
- **X All/Liq All** = cancels all orders for all symbols on the current account and liquidates all positions for the current account
- **X Global** = cancels all orders for all accounts
- **X Sells** = cancels all sell orders for that symbol and contract month
- If orders of the given type have not been placed, the button is not be available and appears dimmed.

To display cancel buttons, go to the **Display** tab in [Trading Preferences](#) and select the **Cancel/Activate All** buttons check box and the check boxes for each button you want displayed.

Size buttons (DOMTrader)

The size buttons allow you to change the quantity that is used when you place orders.



The entry box (the box on the left) displays the default order quantity. You can type a number to override the default.

If you are placing an iceberg order, an additional size box is displayed if the order size buttons are arranged vertically:

Buy 1000 MKT	Bid	Offer	Sell 1000 MKT
1000	21K	133775	2183
10	23K	133750	1702
1	LMT 28K	133725	1207 LMT
5	46K	133700	395
10	LMT 46K	133675	445 LMT
20	36K	133650	1592
50	LMT 36K	133625	1552 LMT
100	29K	133600	2179
	LMT 3819	133575	2282 STP
	1623	133550	2419
	551	133525	2855
	LMT 633	133500	3211 LMT
	479	133475	2525

If the order size buttons are arranged horizontally, the entry box contains both values:



You set the button values in [Risk](#) preferences and the button locations in [Display](#) preferences.

The default visible size value is set in [Smart Orders](#) preferences.

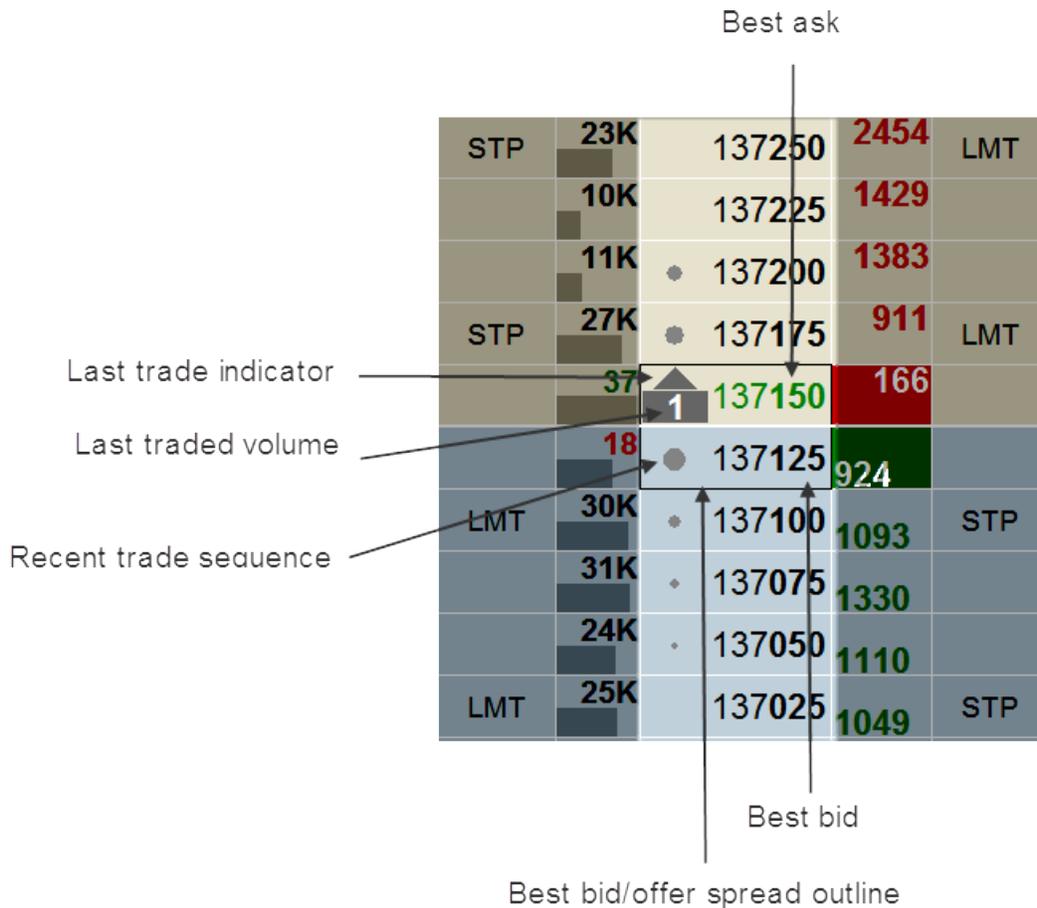
DOMTrader Ladder

Some of the DOMTrader Ladder elements are optional and are displayed based on the preferences you have set up.

To check or change those preferences, click the **Setup** button, and then click **Trading Preferences**.

For more information about DOMTrader Display Preferences, see "[_d2h_bmk_Ref190658529_518](#)" on page 39.

Price column



The center column on the DOMTrader ladder is the **price column**. This column is always displayed.

The **last trade indicator** shows whether the last trade was higher (up arrow) or lower (down arrow) than the previous trade. If the last trade was at the same price as the previous trade, then no arrow is displayed. Displaying the **last traded volume** on the indicator is optional.

Pre-open indicative volume and price are represented like this: **6** ▶ **116950**. Both outright and synthetic spreads are included in the calculation.

The **best bid** and **best ask** are indicated by green and red highlighting. The best bid/offer spread outline is indicated by the rectangle, in the case, around 136800-136750. This outline is optional.

Recent trade sequence is represented by circles of varying size indicating the prices that have been active most recently. The larger the circle, the most recently that price was traded. Recent trade sequence is optional and off by default.

You can also highlight for the spread between best bid and ask, highlight theoretical value for options, show the high and low, and highlight the average fill price. For details about configuring the price column display, see "[Price column](#)" on page 61.

Total volume column

	STP	23K		137250	2454	LMT
		10K		137225	1429	
Numeric volume		11K	●	137200	1383	
Graphic volume	STP	27K	●	137175	911	LMT
Cumulative best bid and ask volume		37	▲	137150	166	
		18	●	137125	924	
	LMT	30K	●	137100	1093	STP
		31K	●	137075	1330	
		24K	●	137050	1110	
	LMT	25K		137025	1049	STP

The column to the immediate left of the price column is the last trade volume column. This column is optional.

Volume can be represented both graphically and numerically.

Volume can be measured as the total for the day or for a session.

The best bid and best ask volume, measured cumulatively or based on the last trade, can be displayed in this column.

For details about configuring the total volume column display, see "[Total volume column](#)" on page 63.

Depth of market (DOM) column

STP	23K	137250	2454	LMT
	10K	137225	1429	
	11K	• 137200	1383	
STP	27K	• 137175	911	LMT
	37	▲ 137150	166	
	18	● 137125	924	
LMT	30K	• 137100	1093	STP
	31K	• 137075	1330	
	24K	• 137050	1110	
LMT	25K	137025	1049	STP

The column to the immediate right of the price column is the Depth of Market column. The data in this column is continuously updated while the market is active. This column is optional and displays combined, outright, or implied DOM data. Each type of DOM data is color-coded. For example, with the classic light theme:

5069	55	5068	25	5066	
5068	27	5067	35	• 5065	6
5067	31	TLMT	• 5066	24	TLMT
• 5066	13	• 5065	1	• 5063	
▲ 1 5065	5	▼ 1 5064	15	▼ 1 5062	2
• 5064	25	TLMT	• 5063	14	STP
• 5063	15	• 5062	30	• 5060	
• 5062	20	• 5061	22	5059	

Combined Outright Implied

You also have the option of separating bids and asks into two columns:

	1311
	1266
	1355
	229
767	
731	
922	
1358	

For details about configuring the depth of market column display, see "[Depth of market \(DOM\) column](#)" on page 65.

Order columns

	1022		65915		
STP	1047		65910		LMT
	1030		65905		
	1028	*	65900		
5	808	*	65895		LMT
	866	*	65890		
	0	●	65885	5	
9	2	1	65880	3	LMT
1F	684		65875		
	892	*	65870		100

The columns to the far left and the far right of the ladder are the order columns. These columns are always displayed. Watermarks, seen here as STP and LMT, are optional. Other watermark options include order size and buy/sell.

When you drag a price to either column, a [visual representation](#) of your order is displayed.

For details about configuring the order columns display, see "[Buy/sell columns](#)" on page 63.

Jump to orders out of view

	3716	136175	14	
	4	136150	37	
LMT	1	136125	22	LMT
	3820	136100	58	
	3732	136075	35	
LMT	3979	136050	62	STP
	3537	136025	55	
	3237	136000		
LMT	2458	135975		STP
	1699	135950		
	1538	135925		
LMT	1966	135900		STP
	1452	135875		
<input type="checkbox"/>				

When you scroll up or down the DOMTrader and your working orders are no longer visible, this bar is displayed. Click the square to jump to the order. Click this square each time you want to jump to the next order that is out of view.

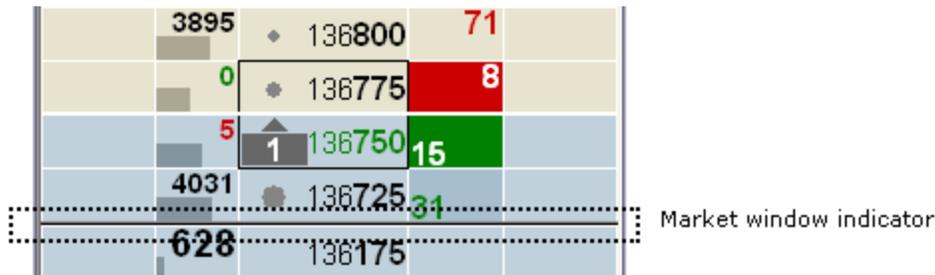
Market lines

STP	735	99575			← Market line
	113	99572			
STP	11	99570	70	LMT	
		99567			
	9	99565	91		
LMT	10	10	99562	8	LMT
		99560			← Market line

DOMTrader displays three market lines: high, low, and market. The green and red lines represent the maximum and minimum trade prices for the contract during the current trading day.

If there are valid best bid and best ask values, and the best ask is equal to the best bid plus tick size value, the market line is displayed. If best bid or best ask prices are not valid for the contract, or if there is a gap between the best bid and best ask rows, the market line is not displayed.

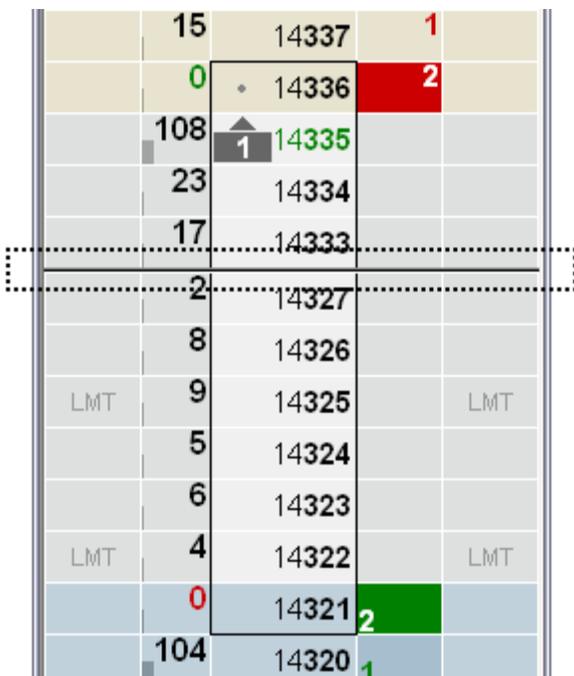
Market window



When you scroll to a price that is far enough from the current market value that the current market value would normally scroll off the screen, the system prevents that from happening.

The line across the DOMTrader ladder indicates that the market window is above the selected price. Every time the current market price changes, the market window re-centers the market price row, so that it is always displayed.

If the best bid and best ask are both displayed on the DOMTrader and market movement results in DOMTrader not being to accommodate both (too great a spread), then an indicator is displayed between the two. It lets you know that there are prices missing, so that you can see both best bid and ask on the ladder. Notice the gap in this image:



DOMTrader Toolbar

The DOMTrader toolbar includes these buttons:

Logon button

This button opens the Order Routing Logon window.

To read more about logging on to trade, see "[Logging On](#)" on page 113.

Logoff button

This button disconnects you from order routing.

To read more about logging off, see "[Logging Off](#)" on page 113.

Center button

This button returns the display to the current bid/ask.

Fill Report button

This button opens a [fill report](#).

OrdPos button

This button opens the Orders and Positions window.

X Global button

Click this button to cancel all working orders.

Right-click this button to open a window that allows you to select the account, side, and symbol to cancel:



Activate All

Click this button to return suspended orders to working.

Park All

Click this button to suspend all working orders. Right-click this button to select which orders to suspend: all, buys, sells, all symbols, a particular symbol, all accounts, a particular account.

Params button

Opens the Set Up Trading Parameters window.

Setting Trading Preferences

Trading Preferences include:

- **Display** settings allow you to choose the columns and buttons you wish to display and the data you wish to see. You can also choose a color theme.
- **Price Display** settings control the number of digits and highlighting for prices.
- **Notifications** settings allow you to identify when and how you will be notified of events relating to your orders.
- **Risk** settings allow you to set maximum order size and maximum position size as well as the values for quantity buttons. You choose which settings apply to all instruments and which settings apply to specific instruments.
- **Limits and Stops Orders** settings allow you to define Stop, Stop Limit, DOM-Triggered Stop, and DOM-Triggered Stop Limit values.
- **Smart Orders** settings allow to you enable and configure smart orders.
- **Strategy Orders** settings apply to spread and other strategy orders.
- **Keyboard Keys** settings allow you to manage keyboard shortcuts.

Some display settings apply to the individual trading window, while other display settings apply to all trading applications.

Price Display, Notifications, Risk, Limit & Stop Orders, Smart Orders, and Strategy Orders preferences apply to all trading applications.

To set trading preferences, click the **Setup** button and then click **Trading Preferences**.

Setting DOMTrader Display Preferences

Display settings allow you to choose the columns and buttons you wish to display and the data you wish to see. You can also choose a color theme.

Preferences that apply to all trading windows are described in [Setting Display Preferences that Apply to All Trading Applications](#).

Select a theme and organize columns (DOMTrader)

Select a color theme for current tab

- Light theme classic
- Light theme 1
- Light theme 2
- Light theme 3
- Dark theme 1
- Dark theme 2
- Dark theme 3
- Dark theme 4

Buy	Vol	Price	Bid	Ask	Sell	Yield	Greeks
		1010		32		0.990	0.675
	55	1005		44	10 <small>LMT</small> <small>TOF</small>	0.995	0.512
		1000				1.000	0.349
	78	99	995	21		1.005	0.186
		990	50			1.010	0.023

Select one of the eight color schemes. You can see what each theme looks like by selecting it and referring to the preview grid. Some themes have different colors for above and below market. For example, notice the difference between light theme one and light theme two.

STP	280	85350		LMT	STP	280	85350		LMT
	482	85325	73			482	85325	73	
	852	85300	90			852	85300	90	
STP	1335	85275	137	LMT	STP	1335	85275	137	LMT
	667	85250	32			667	85250	32	
	5	85225	10			5	85225	10	
LMT	2	85200	12	LMT	LMT	2	85200	12	LMT
	723	85175	43			723	85175	43	
	595	85150	134			595	85150	134	
LMT	611	85125	108	STP	LMT	611	85125	108	STP
	665	85100	111			665	85100	111	
	61	85075				61	85075		

Each column currently displayed on the DOMTrader is shown in the preview grid, with a pair of buttons below each column. Click the buttons to move columns to the left or right one column at a time.

Price column (DOMTrader)

Price column

Show volume on last trade

Last tick
 Last trade filled
 Aggregate since last price move

Show recent trade price sequence
(larger dots show the most recent)

Highlight the spread between best bid and offer with an outline

Highlight theoretical value for options

Show high and low for

Day
 Current Session

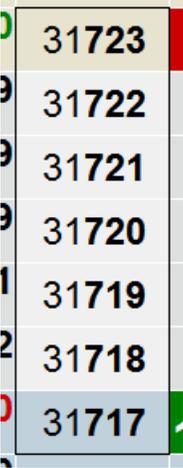
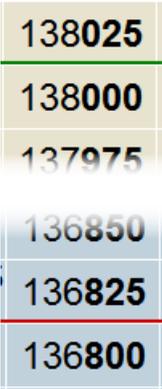
Highlight average fill price

Underline
 Background
 Underline and background

Row Shading

Select the check box for each element you would like to add to the [price column](#).

Preference	Details
Show volume on last trade	<p>Last traded volume is indicated above or below the last trade indicator.</p>  <p>Last tick = volume of the last tick, which could be last trade, best ask change or best bid change</p> <p>Last trade filled = volume of the last trade only</p> <p>Aggregate since last price move = last trade volume is aggregated and is reset to 0 when the last trade price changes</p>
Show recent trade price sequence	<p>Recent trade sequence is represented by circles of varying size indicating the prices that have been active most recently. The larger the circle, the most recently that price was traded. It is off by default.</p>

Preference	Details
	
<p>Highlight the spread...</p>	<p>The spread between best bid and offer is indicated by two vertical lines to each side of the price column.</p> 
<p>Highlight theoretical value...</p>	<p>Theoretical values are highlighted with a T.</p>
<p>Show high and low...</p>	<p>The high for the day or session is indicated by a green line across the display. Low is indicated by a red line.</p> 

Preference	Details
Highlight average fill...	The average fill price can be indicated with a line, shading, or both.
Row Shading	<p>Every fourth row is shaded for decimal tick size of 25/100 and tick sizes: 1/4, 1/8, 1/16, 1/32, 1/64, 1/128, 1/256, 1/512, 1/2 of 1/64, 1/8 of 1/32, 1/4 of 1/32, 1/2 of 1/32.</p> <p>Every fifth row is shaded for decimal tick size.</p> <p>In the case of fraction A/B or A/B of 1/C:</p> <ul style="list-style-type: none"> • If B is less than 7, then every Bth row is shaded. • If B is greater than 7 and divisible by 5, then every 5th row is shaded. • If Bth is greater than 7 and not divisible by 5, then every B row is shaded.

Total volume column (DOMTrader)

Total volume column

Numeric volume

Total for day

Total for session

Display best bid or ask volume as:

Cumulative

Last Trade

Graphic volume

Check either the **Numeric volume** or **Graphic volume** check box to show volume.

Under **Numeric volume**, you may choose to display the total for the day or for the session and to display the best bid or ask volume cumulatively or by last trade.

If you do not want the total [volume column](#) displayed on the DOMTrader, then both the numeric volume check box and the graphic volume check box must be unselected.

Buy/sell columns (DOMTrader)

Buy/Sell columns

Show watermark

Order size

Buy/Sell

Limit/Stop mode

Color the Buy/Sell Columns

Select the **Show watermark** check box to display [watermarks](#) on the DOMTrader. Watermarks serve as reminders for you about the results of actions you take in DOMTrader. The watermark is repeated in every fourth row.

Then, select which watermarks you would like displayed:

- **Order size** – Displays current order quantity.
- **Buy/Sell** – Displays **Buy** or **Sell**.
- **Limit/Stop mode** – Displays **LMT** or **STP**.

Select the **Color the Buy/Sell Columns** check box to highlight the buy and sell columns with other colors, like this:

151	*	6952	26	
LMT 331	*	6951	23	LMT
1	▲	6950	1	
290	*	6949	12	

To change the color, go to **Buy/Sell colors** in display preferences for all trading applications. Color is off by default.

Depth of market (DOM) column (DOMTrader)

Depth of market (DOM) column

Separate bids and asks

Color cells that have bids and asks

Color the entire column

Combined DOM

Implied DOM

Outright DOM

Show toggle buttons in toolbar

When the [DOM column](#) check box is selected, depth-of-market (DOM) volume data is displayed. The total volume size of the best bid price and several prices below the best bid are displayed and are colored green. The total volume size of the best offered price and several prices above the best offer are displayed and colored red.

Further, you can choose:

- whether to separate bids and asks.
- whether to color cells or not (only available with separate bids and asks).

Combined bids and asks

	10K	123800	2776	
	5861	123775	2637	
LMT	11K	123750	2384	STP
	14K	123725	1791	
	9933	123700	280	
STP	2095	123675	216	STP
		123650	2048	
		123625	2380	
STP		123600	3351	LMT
		123575	2557	

Bids and asks colored

	5861	123775	2458	
STP	11K	123750	2160	LMT
	14K	123725	2034	
	9953	123700	1960	
LMT	2858	123675	825	LMT
	2089	123650	538	
	48	123625	1772	
LMT		123600	3086	STP
		123575	2497	
		123550	2490	

Entire column colored

STP	11K	123750	2214	LMT
	14K	123725	2089	
	9953	123700	1999	
LMT	2902	123675	1709	LMT
	3442	123650	548	
	63	123625	1436	
LMT		123600	2957	LMT
		123575	2537	
		123550	2526	
LMT		123525	2266	STP

- whether to display combined, implied, or outright DOM data.
- whether to display Combo, Implied, and Outright buttons on the DOMTrader toolbar:



Greek column for options (DOMTrader)

Greek column for options (incl. IV)

Select this check box to add a column for Greek values on the DOMTrader.

Other functions (DOMTrader)

Other functions

Show tabs

If you would like to hide the [tabs](#) on the DOMTrader, unselect this button.

Price scale behavior (DOMTrader)

Price scale behavior

- Responsive scale
 Dynamic scale

Select one of the two price scale types.

- **Responsive Price Scale** - The inside market moves up and down the DOMTrader ladder until the inside market reaches the top or bottom of the window and then returns to the center.
- **Dynamic Price Scale** - The inside market stays in the middle of the DOMTrader grid. If the result of the adjusted market price calculation falls between two prices, the scale shifts to the greater value.

Show split market compression tool (DOMTrader)

Show split market compression tool
 Show when large Bid/Ask spread exists
 Always show

Select this check box to include the split market compression button on the DOMTrader.

This tool compresses prices between the best bid and best ask, which is useful for markets with a large gap between those prices.

You can choose whether to show it all the time or only when necessary.

Order placement methods (DOMTrader)

Order placement methods

Certain methods may be disabled by your FCM

Enable fast-click mode

Enable middle-click to place order using second default order size

Enable sweep mode

Enable fast-click mode allows you to place orders by clicking the **Buy** or **Sell** column next to the order price. This enablement is determined by your FCM. Please contact your FCM for more information.

Enable middle-click allows you to place an order at the [second default size](#) by clicking your middle mouse button.

Enable sweep mode allows you to enter [sweep orders](#).

To learn how to place orders, see "[Placing Orders on the DOMTrader](#)" on page 146.

Function buttons (DOMTrader)

Buy/Sell mkt buttons

Inside market buttons

HIT and TAKE buttons

Limit orders

Trailing limit orde

Order size buttons
(configure on Risk page)

Bottom ▾

Cancel/Activate All buttons

Liquidate button

X Buys button

X Sells button

X All button

X Global button

Select these checkboxes to display [buy/sell market](#), [inside market](#), [order size](#), and [cancel](#) buttons.

Also choose where to display the size buttons: at the top, bottom, left, or right of the DOMTrader.

Net change (DOMTrader)

Net Change
 Day
 Current Session

Choose whether to display net change and, if so, whether it should be based on the day or current session. It is off by default.

Display cumulative volume (DOMTrader)

Display cumulative volume

Select this check box to display cumulative volume on the DOMTrader. It is off by default.

Setting Order Ticket Display Preferences

Display settings allow you to choose the columns and buttons you wish to display and the data you wish to see. You can also choose a color theme.

Preferences that apply to all trading windows are described in [Setting Display Preferences that Apply to All Trading Applications](#).

Select a theme and organize columns (Order Ticket)

Select a color theme for current tab

- Light theme classic
- Light theme 1
- Light theme 2
- Light theme 3
- Dark theme 1
- Dark theme 2
- Dark theme 3
- Dark theme 4

Buy	Vol	Price	DOM	DOM-B	Sell	Yield	Buy Buttons	Sell Buttons
Buy		1020			Sell	0.980	Buy 20 10050 STP	EPU Sell 20 10050 LMT
		1015	37	■		0.985		
		1010	49	■		0.990	Buy 20 10050 LMT	
Buy	98	1005	13	■	10 LMT 10F	0.995	Buy 20 @MKT	Sell 20 @Offer (13)
		1000				1.000	Buy 20 @Offer (13)	Sell 20 @Bid (12)
	63	995	12	■		1.005	Buy 20 @Bid (12)	Sell 20 @MKT

Select one of the eight color schemes. You can see what each theme looks like by selecting it and referring to the preview grid.

Some themes have different colors for above and below market. For example, notice the difference between light theme one and light theme two.

STP	280	85350		LMT	STP	280	85350		LMT
	482	85325	73			482	85325	73	
	852	85300	90			852	85300	90	
STP	1335	85275	137	LMT	STP	1335	85275	137	LMT
	667	85250	32			667	85250	32	
	5	85225	10			5	85225	10	
LMT	2	85200	12	LMT	LMT	2	85200	12	LMT
	723	85175	43			723	85175	43	
	595	85150	134			595	85150	134	
LMT	611	85125	108	STP	LMT	611	85125	108	STP
	665	85100	111			665	85100	111	
	61	85075				61	85075		

Each column currently displayed on the Order Ticket is shown in the preview, with a pair of buttons below each column. Click the buttons to move columns to the left or right one column at a time.

Price column (Order Ticket)

Price column

Show volume on last trade

Last tick
 Last trade filled
 Aggregate since last price move

Show recent trade price sequence
 (larger dots show the most recent trades)

Highlight the spread between best bid and offer with an outline

Highlight theoretical value for options

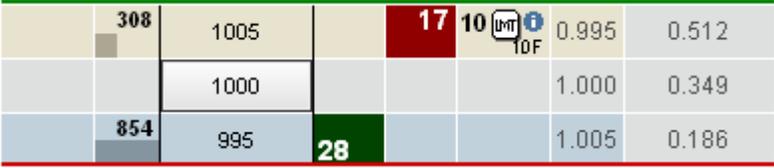
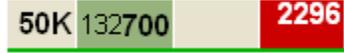
Highlight average fill price

Underline
 Background
 Underline and background

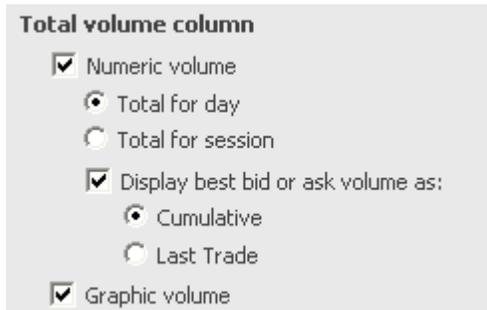
Row Shading

Select the check box for each element you would like to add to the price column.

Preference	Details
Show volume on last trade	<p>Last traded volume is indicated above or below the last trade indicator.</p>  <p>Last tick = volume of the last tick, which could be last trade, best ask change or best bid change</p> <p>Last trade filled = volume of the last trade only</p> <p>Aggregate since last price move = last trade volume is aggregated and is reset to 0 when the last trade price changes</p>
Show recent trade price sequence	<p>Recent trade sequence is represented by circles of varying size indicating the prices that have been active most recently. The larger the circle, the most recently that price was traded.</p> 
Highlight the spread...	<p>The spread between best bid and offer is indicated by two vertical lines to each side of the price column.</p>

Preference	Details																		
	<table border="1" data-bbox="521 264 678 422"> <tr><td>1005</td></tr> <tr><td>1000</td></tr> <tr><td>995</td></tr> </table>	1005	1000	995															
1005																			
1000																			
995																			
Highlight theoretical value...	Theoretical values are highlighted with a T.																		
Show high and low...	<p>The high for the day or session is indicated by a green line across the display. Low is indicated by a red line.</p>  <table border="1" data-bbox="521 642 1295 810"> <tr><td>308</td><td>1005</td><td>17</td><td>10</td><td>0.995</td><td>0.512</td></tr> <tr><td></td><td>1000</td><td></td><td></td><td>1.000</td><td>0.349</td></tr> <tr><td>854</td><td>995</td><td>28</td><td></td><td>1.005</td><td>0.186</td></tr> </table>	308	1005	17	10	0.995	0.512		1000			1.000	0.349	854	995	28		1.005	0.186
308	1005	17	10	0.995	0.512														
	1000			1.000	0.349														
854	995	28		1.005	0.186														
Highlight average fill...	<p>The average fill price can be indicated with a line, shading, or both.</p> 																		
Row Shading	<p>Every fourth row is shaded for decimal tick size of 25/100 and tick sizes: 1/4, 1/8, 1/16, 1/32, 1/64, 1/128, 1/256, 1/512, 1/2 of 1/64, 1/8 of 1/32, 1/4 of 1/32, 1/2 of 1/32.</p> <p>Every fifth row is shaded for decimal tick size.</p> <p>In the case of fraction A/B or A/B of 1/C:</p> <ul style="list-style-type: none"> • If B is less than 7, then every Bth row is shaded. • If B is greater than 7 and divisible by 5, then every 5th row is shaded. • If Bth is greater than 7 and not divisible by 5, then every B row is shaded. 																		

Total volume column (Order Ticket)



Total volume column

- Numeric volume
 - Total for day
 - Total for session
- Display best bid or ask volume as:
 - Cumulative
 - Last Trade
- Graphic volume

Select either the **Numeric volume** or **Graphic volume** check box to show volume.

Under **Numeric volume**, you may choose to display the total for the day or for the session and to display the best bid or ask volume cumulatively or by last trade.

If you do not want the total volume column displayed on the DOMTrader, then both the numeric volume check box and the graphic volume check box must be unselected.

Buy/sell columns (Order Ticket)



Buy/Sell columns

- Show watermark
 - Order size
 - Buy/Sell
 - Limit/Stop mode

Select this check box to include the buy and sell columns on the Order Ticket.

Select the **Show watermark** check box to display [watermarks](#) on the DOMTrader. Watermarks serve as reminders for you about the results of actions you take in DOMTrader. The watermark is repeated in every fourth row.

Then, select which watermarks you would like displayed:

- **Order size** – Displays current order quantity.
- **Buy/Sell** – Display Buy or Sell.
- **Limit/Stop mode** – Displays LMT or STP.

Depth of market (DOM) columns (Order Ticket)

Depth of market (DOM) columns

- Depth of market (DOM)
 - Separate bids and asks
 - Color cells that have bids and asks
 - Color the entire column
- Graphic depth of market (DOM-B)
- Cumulative depth of market (C-DOM)
- Graphic cumulative depth of market (C-DOM-B)
- Implied DOM (I-DOM)
- Outright DOM (O-DOM)
- Average price (AvgPrice)

Select the depth of market columns you want displayed in the DOM area.

- **DOM** displays combined DOM data (total volume size).
- **DOM-B** and **C-DOM-B** show volume bars.
- **C-DOM** is an aggregation of the DOM values below it on the DOMLadder. It is useful when using sweep mode.

Further, for the DOM column you can choose whether to separate bids and asks and whether to color cells or not (only available with separate bids and asks).

Greek column for options (Order Ticket)

Greek column for options (incl. IV)

Select this check box to add a column for Greek values on the DOMTrader.

Click the **Select options model** button to set Greek preferences, including Model, Volatility, Interest Rate, Price Filter, Scale, and Update Frequency.

Show split market compression tool (Order Ticket)

Show split market compression tool

- Show when large Bid/Ask spread exists
- Always show

Select this check box to include the split market compression button on the Order Ticket.

This [tool](#) compresses prices between the best bid and best ask, which is useful for markets with a large gap between those prices.

You can choose whether to show it all the time or only when necessary.

Function buttons (Order Ticket)

Select the check boxes for the elements you want displayed on the Order Ticket:

Function buttons

- LMT/STP buttons
- Buy/Sell MKT buttons
- Inside Market buttons
- Price entry
- Order special properties
- Order size entry
 - Entry field only
 - Buttons and entry field
(configure on Risk page)
- Keyboard order entry
- Orders & Positions display
- Cancel/Activate All buttons
 - Liquidate button
 - X Buys button
 - X Sells button
 - X All button
 - X Global button

As you select and unselect the check boxes, the preview on the Trading Preferences window changes, so you know the element that you are removing and can see the consequences of making changes.

Please note that order modification requires that the Orders & Positions area be displayed.

Font size (Order Ticket)

Font size

- Extra small
- Small
- Medium
- Large

Choose one of four font sizes.

Setting Order Desk Display Preferences

Order Desk has some of the most versatile preferences. Display settings allow you to choose the components you wish to display, the order of those components, and the tab order for those components.

In addition to using the **Setup** button, you can open Order Desk Trading Preferences by right-clicking the Order Desk or using a keyboard shortcut.

Preferences that apply to all trading windows are described in [Setting Display Preferences that Apply to All Trading Applications](#).

Outrights and strategies

You can set different visual and tab preferences for outright and strategies. If you want them to use the same preferences, select the check box:



Component display

Order Desk display preferences are comprehensive, allowing to completely rearrange components and hide most of them. Use the arrow buttons to move components, and clear the check boxes to remove components. The display is previewed on the right.

Outrights:

The screenshot shows the 'Outrights' configuration in the Order Desk. On the left, the 'Account Picker' section is checked, with sub-items 'Size/Symbol/Price', 'Order Size', 'Symbol', and 'Price'. The 'Order Size Buttons' section is also checked, with sub-items 'Type/Duration/Strategy', 'Type', 'Duration', 'Special Orders', 'Park Order Mode', and 'Manual Order Mode'. The 'Order Comment' and 'Inside Market Buttons' sections are checked, with sub-items 'Market', 'Bid', 'Offer', and 'Place Order/Reset'. The main window displays a 'Buy' order for 20 EP at price 116450. The order type is LMT DAY. The bottom summary bar shows 'BUY 20 EP@ 116450 LMT DAY'.

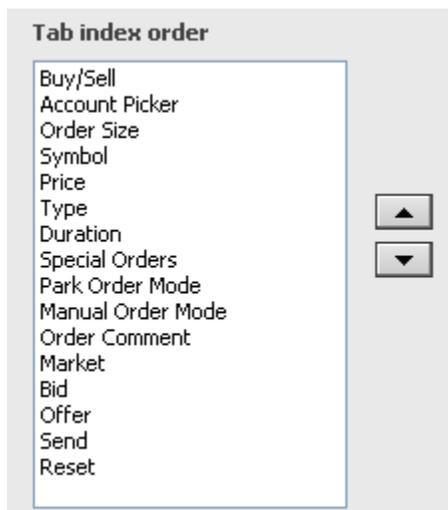
Strategies:

The screenshot shows the 'Strategies' configuration in the Order Desk. On the left, the 'Account Picker' section is checked, with sub-items 'Size/Symbol/Price', 'Order Size', 'Symbol', 'Legs', and 'Price'. The 'Order Size Buttons' section is checked, with sub-items 'Type/Duration/Strategy', 'Ratio', 'Leg to Work', 'Type', 'Duration', and 'Aggregation Mode'. The 'Order Comment' and 'Inside Market Buttons' sections are checked, with sub-items 'Market', 'Bid', 'Offer', and 'Place Order/Reset'. The main window displays a 'Buy' order for 20 EP-ENQ at price 116450. The order type is LMT DAY. The bottom summary bar shows 'BUY 20 EP-ENQ@ 116450 LMT DAY'.

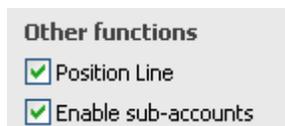
Tab index order

Order Desk navigation can also be customized. Use the arrow buttons to set tab order. You can move components you don't use often to the bottom of the order, that way you can tab to them only when you need to.

Outrights:



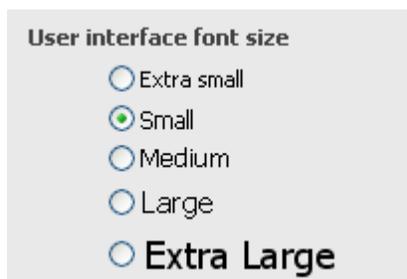
Other functions (Order Desk)



Select the **Position Line** check box to display the position on the Order Desk.

Select the **Enable sub-accounts** check box to display order comments in the Account Picker list. Order comments can be used to [identify sub-accounts](#).

Font Size (Order Desk)



Choose one of five font sizes.

Setting Display Preferences that Apply to All Trading Applications

These preferences apply to both the DOMTrader and the Order Ticket. These preferences are located on the right side of the Trading Preferences window for both the DOMTrader and Order Ticket and on the Orders and Positions Preferences window.

Enable HeadsUp display

Enable heads-up display

A right click on the price in the DOMTrader or the Order Ticket ladder brings up the heads-up display with more types of orders for execution.

When this check box is selected, you can right-click a price in the DOMTrader to [use the HeadsUp display to place an order](#).

This setting will be applied to all trading applications, including DOMTrader, Order Ticket, and Orders and Positions.

Enable manual fills

Enable manual fills

If "Manual" toggle is selected in the DOMTrader or Order Ticket, orders are not routed to the exchange, but are logged in the Orders and Positions Window as manual fills.

Select this check box to enable manual fills and add the [manual fills button](#) to the DOMTrader. You have the ability [to enter fills manually](#) for those trades that did not occur through CQG to be reconciled against the statement. All electronic and pit contracts can be entered. Once the statement for the day is received, the manual fills are reconciled against the statement and then permanently removed.

This setting will be applied to all trading applications, including DOMTrader, Order Ticket, and Orders and Positions.

Highlight digits in price scale

Highlight digits in price scale
(configure on Price Display page)

Select this button to highlight a number of digits in the price on the DOM Ladder. The number of digits is set in Price Display preferences.

This setting will be applied to all trading applications, including DOMTrader, Order Ticket, and Orders and Positions.

Do not reset price scale

Do not reset price scale after order action
(reset price scale by clicking on the symbol tab or by hitting "Home" key)

Select this check box to prevent the price scale from centering when you are acting on orders that are outside the view of a centered scale. An example of an order action is cancellation.

Additionally, when this option is selected, the price remains the same when you switch accounts. Applies to DOMTrader, Order Ticket, and Order Ticket.

Status

Status

Display open trade equity

Open trade equity (OTE)

OTE & P/L

Calculate OTE using:

Last trade

Best Bid/Ask Advanced...

Use TheoV to calculate UPL/MVO for options.

Select the **Display Open Trade Equity** check box to show the [Open Trade Equity](#) (OTE) or OTE & P/L on the DOMTrader.

Also select whether OTE is calculated using the last trade or best bid/ask.

Click the **Advanced** button to open a table of fungible symbols to use for calculating OTE.

Choose whether the TheoV should be used in options calculations.

This setting will be applied to all trading applications, including DOMTrader, Order Ticket, and Orders and Positions.

Use yesterday's settlement price to calculate OTE and PL

Use yesterday's settlement price to calculate OTE and PL.

Select this check box to calculate the OTE and PL using yesterday's settlement price.

Show combined net position for relative commodities

Show combined net position for relative commodities

Select this check box to display combined positions for related contracts.

The related contracts are provided by the Gateway, for example, SP and EP are related. The OTE (open trade equity), MVO (market value of options), and P/L (profit and loss) values for the combined net positions are calculated as a sum of the corresponding values for the combined contracts.

The average price for the net position is calculated as:

$P-O/(N*P2D)$, where

- P = Last quote (trade or best bid/ask) of selected Contract
- O= Combined Net Position OTE
- N=Combined Net Position Quantity
- P2D = Price to Dollar multiplier for selected contract.

Given that the last quote is involved, the average price for the net position fluctuates.

This preferences is cleared and disabled if **Group spread positions by filled spread orders** is selected.

This setting will be applied to all trading applications, including DOMTrader, Order Ticket, and Orders and Positions.

Strategies



Use native strategy quotes to calculate OTE

Choose whether to calculate OTE for native strategies using leg quote data or strategy quote data (if available from the exchange). For example, CLEN3 and CLEQ3 (leg) or CLES1N3 (strategy). Select the **Use native strategy** checkbox, or leave it unselected to use leg quote data.

This preference is selected and disabled if **Group spread positions by filled spread orders** is selected.

This setting is applied to all trading applications, including DOMTrader, Order Ticket, and Orders and Positions.

Group spread positions by filled spread orders

This preference is used to select the spread position calculation modes: *by execution* or *by exchange trades*.

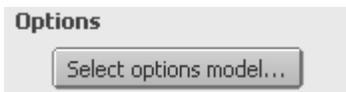
On = calculate native and synthetic spread positions by execution of the strategy (based on trade data)

Off = calculate native and synthetic spread positions by outright leg positions (based on clearing data)

When this option is selected, the **Use native strategy quotes to calculate OTE** check box is selected and disabled, and the **Show combined net position for relative commodities** check box is cleared and disabled.

The *by execution* preference also governs Quote SpreadSheet; Enhanced Quote SpreadSheet; Portfolio Monitor; and Open Trade Equity, Position, and Profit & Loss trading studies. Additionally, the Order Display trading study shows fills of spreads and the Spread Matrix and Spread Pyramid display positions for strategies as well as for their legs.

Options model



Click the **Select options model** button to set Greek preferences, including Model, Volatility, Interest Rate, Price Filter, Scale, and Update Frequency.

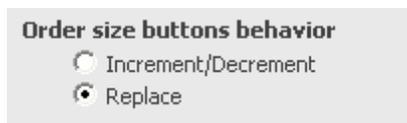
Chrome style



Chrome styles control the appearance of the buttons. Click the radio button for your preferred style.

This setting is applied to all trading applications, including DOMTrader, Order Ticket, and Orders and Positions.

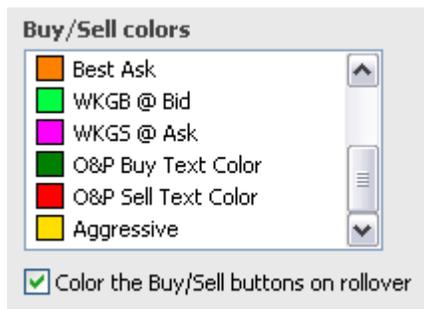
Order size buttons behavior



Choose whether the [order size buttons](#) will replace the current value or increment and decrement the current value.

This setting will be applied to all trading applications, including DOMTrader, Order Ticket, and Orders and Positions.

Buy/sell colors



You can choose to color various prices and fields:

- Buy
- Sell
- Bids
- Asks
- Best Bid
- Best Ask
- WKGB @ Bid (working at bid)

- WKGS @ Ask (working at ask)
- O&P Buy Text Color
- O&P Sell Text Color
- Aggressive ([how this works](#))

To change a color, click the colored square to open the standard color palette. Click **No Color** to turn off coloring for a particular element.



Select the check box if you would like the buy and sell buttons to change color when you hover your mouse over them. The **Buy/Sell** colors indicate the color of those buttons.

Add Sound Board button

Enable Sound Board icon on header bar.

Select this check box to display the **Sound Board** button on the DOMTrader or Order Ticket title bar. This setting applies to all DOMTrader and Order Ticket windows.

In order to play sounds, they must also be configured. To configure sounds, right-click the **Sound Board** button.

The Sound Board plays sounds to indicate new trades, changes to best bid and ask, and changes to the DOM book.

Setting Price Display Preferences

Price display preferences apply to all DOMTrader and Order Ticket windows. Set these preferences for all symbols or for particular symbols.

Price Display

These settings will apply to ALL order entry displays for ALL trading accounts.

Tradable symbols	Price display settings for all symbols
<Default>	Enter the number of digits to display: <input type="text" value="12"/>
	Enter the number of digits to highlight: <input type="text" value="3"/>
<input type="button" value="Add symbol"/> <input type="button" value="Delete symbol"/>	

Set how many digits of a price should be displayed. This setting applies to the last digits of the price, so that if you select 3, then "750" is displayed for "123750." Leading zeros are omitted, so that if you select 12, then "523750" is displayed for "523750." Setting this value to zero removes any restriction on the number of digits to display. Type a value from 0-12.

Set how many of price digits should be highlighted, that is in bold font. Type a value from 0-9.

Setting Notifications Preferences

Notification settings allow you to identify when and how you will be notified of events relating to your orders.

Before setting preferences, choose whether the settings will apply to all accounts or to a particular account using the drop down:

Symbol settings for trading account:

The default settings will not overwrite settings you select for a specific account or instrument.

Limit Notifications to Your Actions

Notify only of order actions associated with michelle

Select this check box to be notified only of the order actions attributed to your account.

Confirm

Confirm

- New, cancel, modify, and parked orders
- Cancel multiple orders: buy/sell, all, global, or trade out
- Liquidating or reversing of position

Select the confirm check boxes to receive confirmation messages for the listed situations.

Popups

Popups

- When an order is filled
- When an order is partially filled
- Notify me when an order hasn't been acknowledged in sec.
- Notify me when a market order hasn't been filled in sec.
- When warning message is received

Select the popup check boxes to receive notification when orders are filled or partially filled and when an order hasn't been acknowledged or filled in a certain amount of time.

To eliminate warning message notifications, unselect the warning message check box.

Change Trading Interface Background Color

Change Trading Interface Background Color

When an order is filled

When an order is partially filled

Highlight Background 1 sec.

Highlight Background 1 sec.

Blink Background

Blink & Highlight

Select the check boxes to either highlight, blink, or both highlight and blink the DOMTrader or Order Ticket when an order is filled or partially filled. A highlight is an uninterrupted color change to the display, which lasts a few seconds. If you choose both blink and highlight, then the blink is followed by the highlight.

In this image the left side of the DOMTrader is highlighted in green.

Buy 1	Bid	Offer	Sell 1
1104	139100		
1242	139075		
LMT 1879	139050	183	STP
2766	139025	218	
3017	139000	154	
LMT 2833	138975	51	STP
3	138950	27	
0	138925	32	
STP 2657	138900	75	LMT
2616	138875	157	
2081	138850	144	
STP 2608	138825	171	LMT
2870	138800		

Buttons: X Buys, X All, X All Liq All, X Global, X Sells

Values: 1, 1, 5, 10, 20, 50, 100

Sounds

Select these check boxes to hear sounds for certain order events.

Sounds	
<input checked="" type="checkbox"/> When an order is filled	Filled <input type="button" value="Test"/>
<input checked="" type="checkbox"/> When an order is partially filled	Partially_filled <input type="button" value="Test"/>
<input checked="" type="checkbox"/> When an order is rejected	Rejected <input type="button" value="Test"/>
<input checked="" type="checkbox"/> When an order is acknowledged	Acknowledged <input type="button" value="Test"/>
<input checked="" type="checkbox"/> When you are placing a buy order	Buy_order <input type="button" value="Test"/>
<input checked="" type="checkbox"/> When you are placing a sell order	Sell_order <input type="button" value="Test"/>
<input checked="" type="checkbox"/> When an order is incomplete	Alert <input type="button" value="Test"/>

Several sound (.wav) files are included with CQG. Select one from the drop down menu. You may also select a .wav file from another source by clicking **Browse** in the drop down menu.

Turn on cross trade warning

Warn of potential cross trades

Select this check box to be warned of a possible cross trade.

Turn on informational messages

Display received informational messages

Select this check box if you would like to see informational messages when they are delivered. This setting does not impact whether you receive the messages.

Turn on system problem warning

Sound when there is a problem communicating with the order routing system (global)

Firealarm

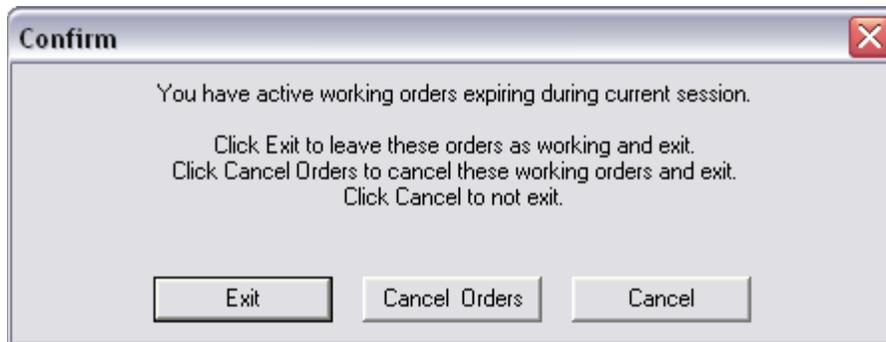
Select this check box to be alerted to an order routing problem with a sound.

Turn on order cancel prompt

If you would like to be prompted to cancel working orders when you log off, select this check box.

Prompt for cancel on logoff

When you log off, you receive this message:



Setting Risk Preferences

Risks settings allow you to set maximum order size and maximum position size as well as the values for quantity buttons.

Before setting preferences, choose whether the settings will apply to all accounts or to a particular account using the drop down:

Symbol settings for trading account:

Also choose whether the settings will apply to all symbols or a particular symbol:



The symbol must be highlighted if you are setting preferences for that symbol.

The default settings do not overwrite settings you select for a specific account or instrument.

You can also add a QFormula to the list.

To add a symbol or QFormula to the Tradable Symbols List

1. Click the **Add Symbol** button.
2. Enter the symbol or formula or select one from the list in the **Add Tradable Instruments** window.
3. Click **OK**.

To remove a symbol or QFormula from the Tradable Instruments list

1. Click a symbol or formula to select it.
2. Click the **Delete Symbol** button. The symbol is removed from the Tradable Instruments list.

Risk management values

Risk management for EP
The system will prompt you with a warning when you place an order above these values:

Maximum order size:

Maximum position size:

Enter the maximum order size and maximum position size. In the example above, the risk management settings apply to the symbol EP.

Order quantities

Order quantities for all symbols.

Enter custom order size button values for all trading interfaces:

Enter a default order size:
Right-clicking on the entry field will reset the size to this value.

Second default order size:
Place an order with this size by clicking the middle mouse button in interfaces that support Fast-Click.

Enter values for the [order quantity buttons](#) and the default order size. The second default order size applies to order placement using the middle mouse button.

You can enter large quantities for default order size:

Enter custom order size button values for all trading interfaces:

Reset order size

Reset order size

Reset order size to default value after placing an order

Reset order size to default value after seconds

To avoid inadvertently placing an order with an unintended size, you can have the system change the order size back to the default after you place an order and after a certain number of seconds.

Setting Limit & Stop Orders Preferences

Limit and Stops settings allow you to define Stop, Stop Limit, DOM-Triggered Stop, and DOM-Triggered Stop Limit values.

Before setting preferences, choose whether the settings will apply to all accounts or to a particular account using the drop down:

Symbol settings for trading account:

Also choose whether the settings will apply to all symbols or a particular symbol:

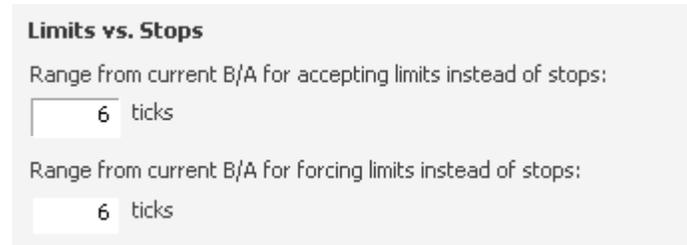


The symbol must be highlighted if you are setting preferences for that symbol.

The default settings will not overwrite settings you select for a specific account or instrument.

You can also add a QFormula to the list.

Limits vs. Stops



Limits vs. Stops

Range from current B/A for accepting limits instead of stops:
 ticks

Range from current B/A for forcing limits instead of stops:
 ticks

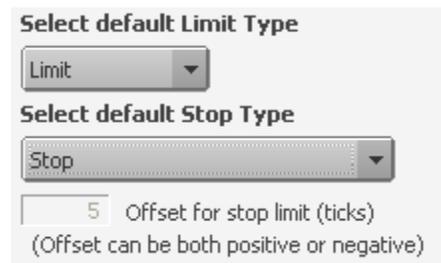
This setting determines the distance in ticks from the current bid and ask values in which the system should place a limit order versus a stop order.

The first setting indicates that the system will not ask you to confirm when you submit limits into the market. The second setting indicates the threshold for allowing stops versus forcing limits.

Range from current B/A for accepting limits instead of stops: If you set this option to 6 and place a LMT sell order 7 ticks below the best bid, you receive a warning: "Price ... is well below market price. Order will probably fill immediately at the market." For 6 or fewer ticks below the market, you are not warned.

Range from current B/A for forcing limits instead of stops: Indicates the number of ticks from market where a limit order versus a stop order is placed while using drag and drop. If you set this value to 6 and drag an order 6 ticks below best bid, a limit order is placed. If the value is 7 ticks or more, a stop order is placed.

Select default limit and stop types



Select default Limit Type

Limit

Select default Stop Type

Stop

Offset for stop limit (ticks)
(Offset can be both positive or negative)

Select which limit or stop type you want the [stop management field](#) to default to.

If you select a stop limit type, you must enter the number of ticks for the stop limit offset. The offset determines the limit price for the order the stop limit becomes when the stop price is hit.

Setting Smart Orders Preferences

Smart Orders settings allow you to set preferences for DOM-Triggered Stops, Iceberg Limits, Brackets, Trailing, and OCO orders.

Before setting preferences for all but OCO orders, choose whether the settings will apply to all symbols or a particular symbol. Click the **Add symbol** button to add symbols to the list.

Smart Orders

Symbol settings for trading account: Default for all accounts

- DOM-Triggered Stops
- Iceberg Limits
- Iceberg Strategies
- Brackets
- Trailing
- OCO
- OCO Strategies
- Market If Touched
- Funari
- Market limit

Iceberg Limits

An iceberg order is a limit day order where the size displayed on the order book is according to the display quantity set by the trader rather than the total size of the order.

<Default>

CLE

DD

DG

DL

DSX

ENQ

EP

HOE

TYA*

USA*

* No iceberg limit parameters have been set for this instrument

Add symbol
Delete symbol

Enable Iceberg Limits

Enter a visible order size:

Percent

Notifications

 Enable confirmations for Iceberg Limits

Please note that this tradable symbols list is a master list for all smart orders, so that all symbols from each tab will be listed here. If preferences for that symbol have not been set on a particular tab, the symbol will be followed by an asterisk.

To set preferences for that symbol, it must be highlighted.

Configure DOM-Triggered Stops

In order [to place DOM-Triggered stop orders](#), you must select the **Enable** check box.

Enter a value for the threshold. The order is triggered only when the bid or ask quantity falls below it.

To receive confirmations related to DOM-Triggered stops, click the **Notifications** check box.

Configure Iceberg Limits

In order [to place Iceberg limit orders](#), you must select the **Enable** check box.

Enter a visible order size. Only this size is displayed on the book.

To receive confirmations related to Iceberg limits, click the **Notifications** check box.

Configure Iceberg Strategies

In order to place Iceberg strategy orders, you must select the **Enable** check box.

You can choose one of four options for the visible quantity (the quantity displayed on the book).

Enter visible order size:

- show a set percentage of the total order (1-100)
- show a set number of contracts (1-9999)

Random order sizes:

- show random sizes between some percent of the order
- show random sizes between some number of contracts

Default = Enter a visible order size of 1 lot.

Select the **When in Iceberg Mode** check box if you want limit orders placed instead of icebergs for order sizes smaller than the one given. This parameter applies if the order size is changed in the DOMTrader. Default = on.

If the **Enable confirmations** check box is not selected, then you are not be able to change the visible order size on a case by case basis. Default = on.

Click **Add symbol** button to set preferences for a particular QFormula.

Configure Brackets

In order [to place bracket orders](#), you must select the **Enable** check box. You can only do that if OCO orders are enabled.

Enter a tick, profit value, or price for the target order. You can also select limit, trailing limit, or iceberg order type.

Enter a tick value for the stop loss order. You can also select stop, stop limit, or DOM-Triggered stop order type.

To receive confirmations related to bracket orders, click the **Notifications** check box. Note that the confirmation allows you to disable either the target order or the stop loss order, so that a single order is triggered rather than an OCO (both target and stop loss).

Configure Trailing

In order [to place trailing stop or limit orders](#), you must select the appropriate **Enable** check box.

Choose the behavior for the trailing limit orders by selecting one of the radio buttons.

Configure OCO

In order [to place OCOs](#), you must select the **Enable** check box.

Configure OCO Strategies

In order to place synthetic strategy OCOs, you must select the **Enable** check box.

Configure Market-If -Touched

[To place market-if-touched orders](#), first enable them on this window. Also choose whether you wish to receive confirmations of these orders.

Configure Funari

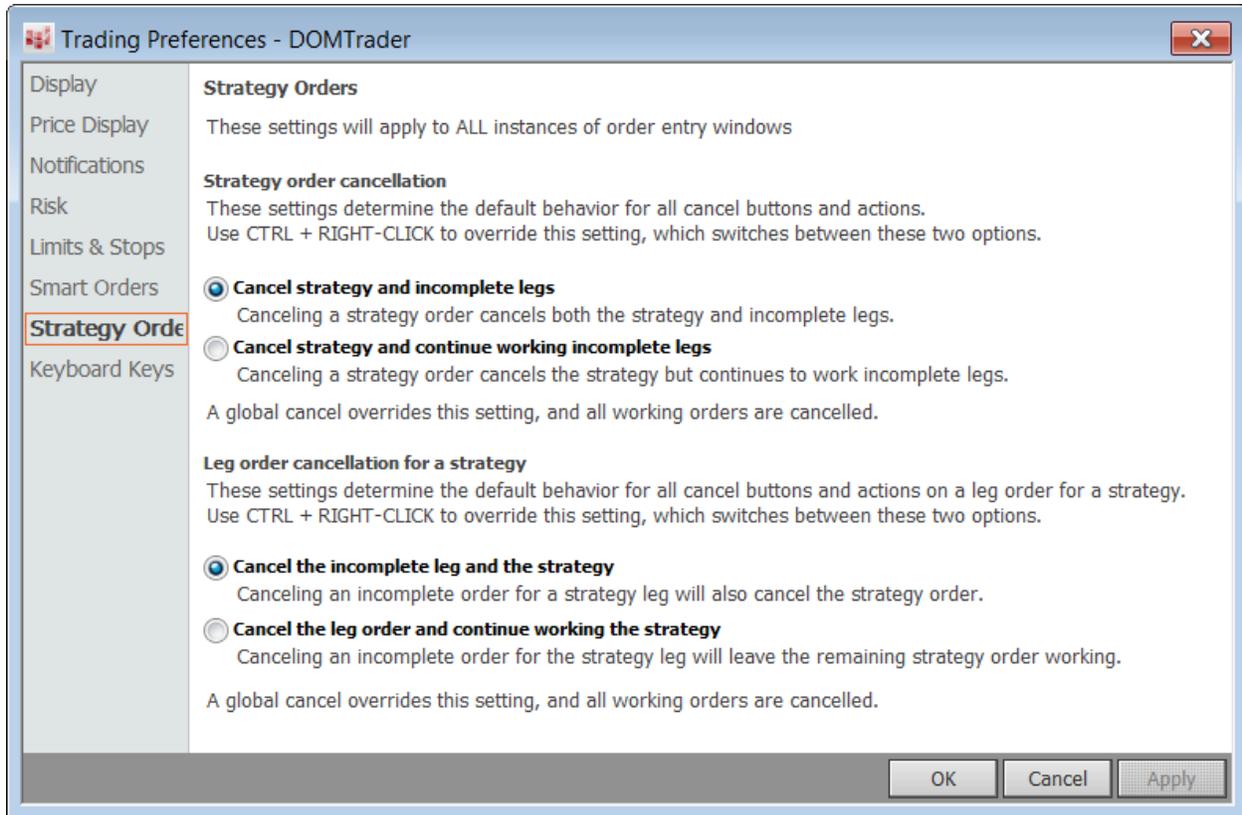
[To place Funari orders](#), first enable them on this window. Also choose whether you wish to receive confirmations of these orders.

Configure Market limit

[To place market limit orders](#) (SFE-specific), first enable them on this window. Also choose whether you wish to receive confirmations of these orders.

Setting Strategy Orders Preferences

These settings apply to strategies on all trading applications.



Strategy order cancellation

One step in managing incomplete orders is to set cancellation behavior.

The first cancellation option, **Cancel strategy and incomplete legs**, tells the system to cancel the strategy and the incomplete legs when you cancel the order.

Suppose you're working a 10 x 10. You're filled 2 and then 6 on one leg. You miss 6 on the other leg, so that leg is now incomplete 6. This option says: I want to cancel the strategy, but leave the 6 I need in the marketplace, so I have a chance of being filled.

The second option, **Cancel strategy and continue working incomplete legs**, tells the system to cancel the strategy but not the incomplete legs when you cancel the order. In this case, you cancel everything in order to manage the risk.

Instead of cancelling the order, you may choose to modify it. Imagine one leg of your strategy is filled, and the market moves away before the second leg can be filled. Drag and drop the second leg to modify it, so that it has a better chance of being filled.

Leg order cancellation for a strategy

These preferences determine how the system handles a leg cancellation.

The first option, **Cancel the incomplete leg and the strategy**, tells the system to cancel both the incomplete leg and the strategy when you cancel the leg order.

The second option, **Cancel the leg order and continue working the strategy**, tells the system to cancel the incomplete leg but not the strategy when you cancel the leg order.

Setting Keyboard Keys Preferences

Keyboard Keys is a comprehensive, customizable set of keyboard shortcuts related to trading.

Each shortcut consists of one or more modifiers - Alt, Ctrl, Shift - followed by some other letter, number, symbol, arrow, or space key.

Shortcuts are either fully modifiable, partially modifiable, or not modifiable.

To change a shortcut, type a new shortcut in the **Shortcut** field. For example, to change a shortcut to Alt+Y, hold down the Alt key and then press the Y key.

To reset the list, click the **Reset Shortcuts** button. You will be asked to confirm this action.

To delete a shortcut, highlight it and then click the **Delete** button.

To print the list, click the print button: 

To expand and collapse the list, click the arrow buttons.

You especially want to be aware of the global buy key and the global sell key, [b] and [s]. See [Placing an Order keyboard shortcuts](#). The Global Buy Key shortcut is a left arrow, so [b] = ←. The Global Sell Key shortcut is a right arrow, so [s] = →. Globally, across all shortcuts, a [b] indicates a left arrow, and [s] indicates right arrow. In the future, you will be able to change the value of these global keys. When you do, all shortcuts that use the global key are changed at one time. That way, you do not have to change each shortcut individually.

Many of these controls depend on focus being on a particular CQG IC window. For example, you can't change the order size on the DOM if focus is on a chart. The window in focus is the active window, which means that commands entered on the keyboard impact that window.

Market Order Mode means that focus is on the market price. Buying at market and buying at limit have the same default shortcut, so it's important to be aware of whether you are in Market Order Mode or not.

Enable keyboard trading

Enable keyboard trading

Select this check box to be able to use the keyboard shortcuts you set in Keyboard Keys preferences.

Default trading window

Allow + to bring the default trading interface to the foreground

Select this check box to be able to open your preferred order entry display (**System Preferences > Misc**) using a shortcut. For example, open an order ticket from a chart, monitor, or quote board by pressing F9 on your keyboard.

Select None or Ctrl and F9 or F12 as the shortcut.

Global keyboard shortcuts (Order Desk)

Shortcut	Description	Modifiable
Open Order Desk	Opens the Order Desk window. Default: Ctrl+Shift+Q	No
Open Buy Order Desk	Opens the Order Desk window. Default: Ctrl+Shift+B	No
Open Sell Order Desk	Opens the Order Desk window. Default: Ctrl+Shift+E	No

Application Level (preferences and parameters) keyboard shortcuts

Shortcut	Description	Modifiable
Open Preferences	Opens the Trading Preferences window. Default: Ctrl+P	Completely
Open Parameters	Opens the Trading Parameters window. Default: Ctrl+M	Completely

Account Selection keyboard shortcuts

Shortcut	Description	Modifiable
Open Account Picker	Press F11 to open the Account Picker.	No
Select another account	Press ↑ and ↓ to move up and down the account list.	No
Use selected account	Press Enter to select the account that's highlighted.	No
Select account 1-9	Press Ctrl + number between 1 and 9 to jump directly to that number in the account list.	No
Close Account Picker	Press F11 or Esc to close the Account Picker.	No

Navigation keyboard shortcuts

Shortcut	Description	Modifiable
Show/Hide Orders Positions Pane (Order Ticket only)	Shows or hides the Orders & Positions area on the Order Ticket window. Default Ctrl+Alt+Space	Not Ctrl+Alt
Bringing Trading Windows Into Focus		
Select next trading window	Moves to the next trading window, especially helpful when you move from a spread trade to one of the legs. Default: Alt+T	Not Alt
Select previous trading window	Moves to the previous trading window. Default: Shift+Alt+T	Not Alt
Selecting Tabs		
New Tab	Opens a new tab. Default: Ctrl+T	Not Ctrl
Select Tab to right	Moves to the tab to the right of the current tab. Default: Ctrl+Page Up	Not Ctrl
Select Tab to left	Moves to the tab to the left of the current tab. Default: Ctrl+Page Down	Not Ctrl
Selecting a Price		
Select the Market Order Mode/Center the Best Bid/Ask	Press Home or Esc to center the best bid and best ask on the DOM ladder and place focus on the market price.	No
Select a Limit Order price	Press ↑ and ↓ or Page Up and Page Down to move up and down the prices on the DOM ladder. You can also use your mouse wheel to scroll.	No
Best Ask	Moves focus to the best ask price on the DOM ladder. Default: Ctrl+Alt+A	Not Ctrl

Shortcut	Description	Modifiable
Best Bid	Moves focus to the best bid price on the DOM ladder. Default: Ctrl+Alt+B	Not Ctrl
Level above Best Ask (Ask +1)	Press Ctrl+1 to move focus to the price above the best ask price on the DOM ladder, press Ctrl+2 to move focus the price two ticks above the best ask price, etc.	No
Level below Best Bid (Bid -1)	Press Ctrl+Alt+1 to move focus to the price below the best bid price on the DOM ladder, press Ctrl+Alt+2 to move focus the price two ticks below the best bid price, etc.	No
Legs		
Open/Close strategy order legs	Opens trading windows for the legs of a strategy order. Default Ctrl+O	Not Ctrl
QFormula		
Create QFormula	Default Ctrl+Q	Not Ctrl
Edit QFormula	Default Ctrl+E	Not Ctrl

Order Properties keyboard shortcuts

Shortcut	Description	Modifiable
Order Size		
Set order size	Press a number key or keys to change the order size to that number.	No
Set order size to match position size	Changes the order size, so that it is identical to position size. Default: Ctrl+Alt+Z	Not Ctrl
Select default order size	Resets the size to the default. Default: Ctrl+Alt+.	Not Ctrl
Order Durations		

Shortcut	Description	Modifiable
Cycle through available durations	Moves from one duration to the next on the duration menu . Default: Ctrl+Alt+Q	Not Ctrl
Good-till-cancelled (GTC)	Changes duration to good-till-cancelled on duration menu. Default: Ctrl+Alt+G	Not Ctrl
Fill and kill (FAK)	Changes duration to fill and kill on duration menu. Default: Ctrl+Alt+F	Not Ctrl
Fill or kill (FOK)	Changes duration to fill or kill on duration menu. Default: Ctrl+Alt+K	Not Ctrl
On-open (OO)	Changes duration to on-open on duration menu. Default: Ctrl+Alt+O	Not Ctrl
On-close (OC)	Changes duration to on-close on duration menu. Default: Ctrl+Alt+C	Not Ctrl
DAY Good-till-time (GTT)	Changes duration to good-till-time on duration menu. Default: Ctrl+Alt+D	Not Ctrl
Iceberg (ICBG)	Changes duration to iceberg on duration menu. If you use this shortcut with a synthetic strategy, then Iceberg Strategies are used. If you use this shortcut with an outright, then Iceberg Limits are used. Default: Ctrl+Alt+I	Not Ctrl
Order Types		
Special		
Order-Cancels-the-Order (OCO) mode on	Turns on order-cancels-order (OCO) mode, as indicated on the special orders button . Default: Ctrl+Alt+=	Not Ctrl
Place OCO order and exit OCO mode	Press Enter to place OCO order, and turn off OCO mode.	No

Shortcut	Description	Modifiable
Exit OCO mode without placing orders	Press Esc to turn off OCO mode; no orders are placed.	No
Bracket Order (BRKT) mode on	Turns on bracket order mode, as indicated on the special orders button . Default: Ctrl+Alt+[	Not Ctrl
BRKT mode off	Turns off bracket order mode. Default: Ctrl+Alt+]	Not Ctrl
Limits		
Cycle through available limits	Moves from one limit type to the next. Default: Ctrl+Alt+L	Not Ctrl
Limit (LMT)	Changes the order type to limit. Default: Ctrl+Alt+M	Not Ctrl
Stops		
Cycle through available stops	Moves from one stop type to the next in the stop management menu . Default: Ctrl+Alt+N	Not Ctrl
Stop (STP)	Changes the stop type to stop. Default: Ctrl+Shift+Alt+P	Not Ctrl
Stop Limit (STL)	Changes the stop type to stop limit. Default: Ctrl+Shift+Alt+L	Not Ctrl
DOM-Triggered Stop (DTS)	Changes the stop type to DOM-triggered stop. Default: Ctrl+Shift+Alt+O	Not Ctrl
DOM-Triggered Stop Limit (DTSL)	Changes the stop type to DOM-triggered stop limit. Default: Ctrl+Shift+Alt+K	Not Ctrl
Trailings		
Cycle through available trailings	Moves from one trailing type to the next in the trailing order management menu . Default: Ctrl+Alt+T	Not Ctrl

Shortcut	Description	Modifiable
Trailings Off	Turns trailing orders off. Default: Ctrl+Shift+Alt+F	Not Ctrl
Trailing Limit	Changes the trailing type to trailing limit. Default: Ctrl+Shift+Alt+T	Not Ctrl
Trailing Stop	Changes the trailing type to trailing stop. Default: Ctrl+Shift+Alt+S	Not Ctrl
Trailing Limit Trailing Stop	Changes the trailing type to trailing limit and trailing stop. Default: Ctrl+Shift+Alt+G	Not Ctrl

Placing an Order keyboard shortcuts

Please note that if you change the shortcuts associated with order placement, and if you use the default instead of your custom shortcut, the system changes your shortcut back to the default. For example, if you change **Buy Limit @ Last Price** to **Ctrl+E** and instead use **Ctrl+←**, then the default value is reset to **Ctrl+[b]**.

Shortcut	Description	Modifiable
Park Mode (Order Ticket only)	Selects the Parked checkbox on the Order Ticket. Default: Ctrl+Shift+Y	Not Ctrl
Price Entry Control Focus (Order Ticket only)	Press Ctrl+Shift+N to move focus to the price field on the Order Ticket.	No
Keyboard Order Entry Focus (Order Ticket only)	Moves focus to the order entry field on the Order Ticket. Default: Ctrl+Alt+E	Not Ctrl
Global Buy Key [b]	This value, Left, is assigned to all instances of [b] in shortcuts, so [b] = ←.	No
Global Sell Key [s]	This value, Right, is assigned to all instances of [s] in shortcuts, so [s] = →.	No
In 'Market Order Mode'		

Shortcut	Description	Modifiable
Buy @ the market	In Market Order Mode, places a buy order at the market price. Default: [b]	Completely
Sell @ the market	In Market Order Mode, places a sell order at the market price. Default: [s]	Completely
Buy Limit @ last price	In Market Order Mode, places a buy limit order at the last price. Default: Ctrl+[b]	Not Ctrl
Sell Limit @ last price	In Market Order Mode, places a sell limit order at the last price. Default: Ctrl+[s]	Not Ctrl
Buy Limit @ Best Bid	In Market Order Mode, places a buy order at the best bid. Default: Alt+[b]	Not Alt
Sell Limit @ Best Offer	In Market Order Mode, places a sell order at the best offer. Default: Alt+[s]	Not Alt
Buy Limit @ Best Offer	In Market Order Mode, places a buy order at the best offer. Default: Shift+[b]	Not Shift
Sell Limit @ Best Bid	In Market Order Mode, places a sell order at the best bid. Default: Shift+[s]	Not Shift
With the Selected Price Above or Below the Market		
Buy using a Limit or Stop[/Limit] Order	With the selected price above or below the market, places a buy limit, stop, or stop limit order. Default: [b]	Completely
Sell using a Limit or Stop[/Limit] Order	With the selected price above or below the market, places a sell limit, stop, or stop limit order. Default: [s]	Completely

Shortcut	Description	Modifiable
Buy using the Alternate Stop[/Limit] Order	With the selected price above or below the market, places a buy alternate stop or stop limit order. For example, if [b] places a stop, then Ctrl+[b] places a stop and a limit. Default: Ctrl+[b]	Not Ctrl
Sell using the Alternate Stop[/Limit] Order	With the selected price above or below the market, places a sell alternate stop or stop limit order. For example, if [s] places a stop, then Ctrl+[s] places a stop and a limit. Default: Ctrl+[s]	Not Ctrl
Buy Limit @ Best Bid	With the selected price above or below the market, places a buy order at the best bid. Default: Alt+[b]	Not Alt
Sell Limit @ Best Offer	With the selected price above or below the market, places a sell order at the best offer. Default: Alt+[s]	Not Alt
Buy Limit @ Best Offer	With the selected price above or below the market, places a buy order at the best offer. Default: Shift+[b]	Not Shift
Sell Limit @ Best Bid	With the selected price above or below the market, places a sell order at the best bid. Default: Shift+[s]	Not Shift
Study Following Orders		
Select price with study - up	Used with Study Following Orders. Press Ctrl+Shift+↑ to locate prices that have study indicators above your current location.	No
Select price with study - sown	Used with Study Following Orders. Press Ctrl+Shift+↓ to locate prices that have study indicators below your current location.	No
Place Study Following Order on selected Buy Price	Used with Study Following Orders. Press Ctrl+Shift+[b] to place a buy Study Following Order at that price.	No
Place Study Following Order on selected Sell Price	Used with Study Following Orders. Press Ctrl+Shift+[s] to place a sell Study Following Order at that price.	No

Modifying Orders keyboard shortcuts

Shortcut	Description	Modifiable
Selecting an Order		
Select the nearest Working Order (repeat to cycle)	Press Ctrl to move to the nearest working order.	No
Select the newest Working Order (repeat to cycle)	Press Ctrl+N to move to the most recent working order.	No
Select order closest to offer	Default: Ctrl+Shift+A	Not Ctrl+Shift
Select order closest to bid	Default: Ctrl+Shift+D	Not Ctrl+Shift
Select order closest to market	Default: Ctrl+Shift+K	Not Ctrl+Shift
Open Stacked Order Popup in line	Opens summary list of stacked orders near the order column. Default: Shift+→	Completely
Close Stacked Order Popup in line	Closes summary list of stacked orders near the order column. Default: Shift+←	Completely
Open Buy Stack in Position Line	Opens summary list of stacked orders near the position summary. Default: Ctrl+Space	Not Ctrl
Open Sell Stack in Position Line	Closes summary list of stacked orders near the position summary. Default: Ctrl+Shift+Space	Not Ctrl+Shift
Highlight Order in the stacked order popup	Press Alt+↑ or ↓ to move up or down the stacked order list.	No
With a Working Order Selected		
Select another Working Order up	Press Alt+↑ to move from selected working order to another on the DOM ladder.	To ↑
Select another Working Order down	Press Alt+↓ to move from selected working order to another on the DOM ladder.	To ↓

Shortcut	Description	Modifiable
Modify Order Price up	Press ↑ to increase the price of an order (moves the order up the DOM ladder). If this value is set to Alt+↑ , then scrolling with your mouse results in moving between working orders.	To Alt+↑
Modify Order Price down	Press ↓ to decrease the price of an order (moves the order down the DOM ladder). If this value is set to Alt+↓ , then scrolling with your mouse results in moving between working orders.	To Alt+↓
Cancel the selected Order	Press Delete to cancel a selected working order.	No
Activate the selected Buy Order	Press ← and → to activate the working order and move focus to the price column, allowing you to move the order to a different price, for example.	No
Activate the selected Sell Order	Press ← and → to activate the working order and move focus to the price column, allowing you to move the order to a different price, for example.	No
View selected order details	Press the spacebar to see the details of a selected working order.	No
Dismiss selected order details	Press the spacebar or Esc to close the details of a selected working order.	No
Return to 'Market Order Mode'	Press Home to place focus on the market price.	No
Return all trading windows to 'Market Order Mode'	Press Ctrl+Home to place focus on the market price on all open trading applications.	No
With a Working Order Active		
Modify the order size	With a working order highlighted, type a new order size using the number keys.	No
Modify 1 tick up	With a working order highlighted, moves the order up one tick. Default: Ctrl+Alt+Up	Not Ctrl+Alt

Shortcut	Description	Modifiable
Modify 1 tick down	With a working order highlighted, moves the order down one tick. Default: Ctrl+Alt+Down	Not Ctrl+Alt
Modify x number of ticks up	With a working order highlighted, press Ctrl+2 to move the order up two ticks, press Ctrl+3 to move the order up three ticks, etc.	No
Modify x number of ticks down	With a working order highlighted, press Ctrl+Alt+2 to move the order down two ticks, press Ctrl+Alt+3 to move the order down three ticks, etc.	No
Submit the modified Order (order side arrow key)	With a working order highlighted, either press Enter or press → (buy) or ← (sell) to submit the order.	No
Discard the order modifications (opposite side arrow key)	With a working order highlighted, either press Esc or press ← (buy) or → (sell) to cancel the order.	No
Cancel the active order	With a working order highlighted, press Delete to cancel the order.	No
View active order details	With a working order highlighted, press the spacebar to view order information.	No
Dismiss active order details	With a working order highlighted and the order details open, press either the spacebar or Esc to close the order details.	No
Deselect order and return to 'Market Order Mode' (current trading window)	With a working order highlighted, press Home to return to Market Order Mode.	No
Deselect order and return to 'Market Order Mode' (all open trading windows)	With a working order highlighted, press Ctrl+Home or Ctrl+Esc to return to Market Order Mode on all open trading windows.	No
Convert to Market Order	Cancels selected outright order(s) and places market order(s) instead. Only incomplete leg orders for strategies can be converted one by one. Default: Alt+Home	Not Alt

Shortcut	Description	Modifiable
Move to join Best Bid	Moves order to best bid price. Default: Alt+B	Not Alt
Move to join Best Offer	Moves order to best ask price. Default: Alt+A	Not Alt
With Stacked Working Orders Selected		
Expand to view all orders or collapse expanded orders (toggle)	For stacked working orders. Press the spacebar to expand and collapse the list of all orders in the stack.	No
Cancel/Liquidate		
Cancel All in this account	Cancels all orders for all symbols for current account. Default: Ctrl+Shift+Alt+X	Not Ctrl
Cancel All orders in all accounts	Cancels all orders for current symbol for all accounts. Default: Ctrl+Shift+Alt+E	Not Ctrl
Cancel All Buys	Cancels all buy orders for current symbol and current account. Default: Ctrl+Shift+Alt+B	Not Ctrl
Cancel All Sells	Cancels all sell orders for current symbol and current account. Default: Ctrl+Shift+Alt+C	Not Ctrl
Liquidate position for this symbol in this account	Liquidates position for this symbol on this account. Default: Ctrl+Shift+Alt+Q	Not Ctrl
Reverse position for this symbol in this account	Reverses position for this symbol on this account. Default: Ctrl+Shift+Alt+V	Not Ctrl
Cancel All	Cancels all orders for current symbol and current account. Default: Ctrl+Shift+Alt+A	Not Ctrl

Shortcut	Description	Modifiable
Cancel All Liquidate All	Cancels/Liquidates all orders/positions for all symbols for current account. Default: Ctrl+Shift+Alt+N	Not Ctrl
Cancel Global	Cancels all orders for all symbols and all accounts. Default: Ctrl+Shift+Alt+M	Not Ctrl
Enable/Disable Trading-Specific Shortcuts		
Enable trading-specific shortcuts	Allows you to use keyboard shortcuts. Corresponds to the Enable keyboard trading display preference. Default: Ctrl+Shift+Home	Not Ctrl
Disable trading-specific shortcuts	Disables the use of keyboard shortcuts. Corresponds to the Enable keyboard trading display preference. Default: Ctrl+Shift+End	Not Ctrl

Log On and Log Off keyboard shortcuts

Shortcut	Description	Modifiable
Log on	Opens the Order Routing Logon window. Default: Ctrl+L	Not Ctrl
Log off	Logs you off of the trading gateway. Default: Ctrl+Shift+L	Not Ctrl+ Shift

Price Grid Display keyboard shortcuts

Shortcut	Description	Modifiable
DOM		
Combination DOM	Press Ctrl+Shift+U to change the DOM, so that it displays a combination of implied and outright data. If you have these buttons displayed on the toolbar, you'll notice that the button focus changes.	No
Implied DOM	Press Ctrl+Shift+I to change the DOM, so that it displays implied data.	No
Outright DOM	Press Ctrl+Shift+O to change the DOM, so that it displays outright data.	No

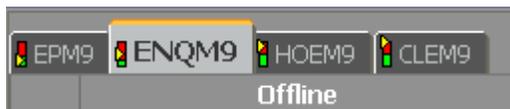
Getting Started

In addition to providing instructions for logging on and logging off, this section describes some of the preliminary tasks for trading, including selecting an account, adding studies and conditions to the display, and using the Sound Board.

Logging On

In addition to logging on to CQG, you must also log on specifically to trade. To log on, you must have an **ID** and a **password** supplied by your FCM.

If you are not logged on to trade, the trading application will state that you are offline:



The Logon button on the toolbar will also be active, while the Logoff button will be inactive.

To log on:

1. Click the **Logon** button on the [toolbar](#) to display the **Order Routing Logon** window.
2. Enter your **User ID** and **Password**.
3. Click the **OK** button.

Logging Off

To log off from trade routing, click the **Logoff** button on the [toolbar](#).

Demo Trading

Demo Trading allows you to view sample pages and place mock trades. Demo Trading can be particularly helpful for new CQG users.

To activate Demo Trading:

1. Click the **Setup** button.
2. Click **Demo Trading**.

A check mark appears next to that menu option. If you click **Login**, the system will automatically log you on with a demo account.

To turn off Demo Trading:

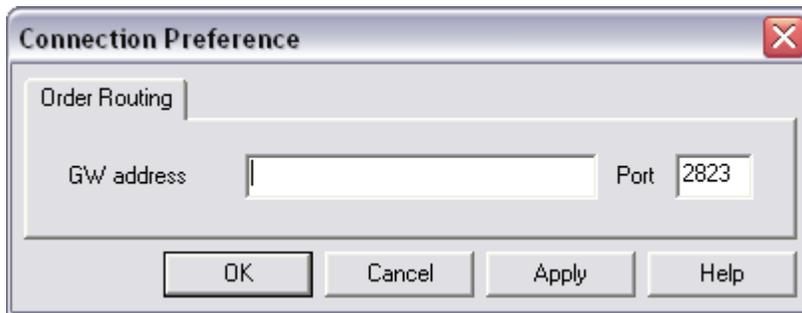
1. Log off if you are logged in.
2. Click the **Setup** button.
3. Click **Demo Trading**.

The check mark is removed, and the next time you log on, you will be prompted for a user name and password.

Connection Preference

Sometimes it is necessary for traders to change their connections to the CQG Gateway.

They do so by clicking the **Setup** button and then clicking **Connection Preference** to open this window:



Changing Your Trading Logon Password



The screenshot shows a dialog box titled "Set New Password". It has three input fields: "Old Password", "New Password", and "Verify". Each field contains a masked password represented by "xxxxxxxx". To the right of the "Old Password" field is a "Change" button, and to the right of the "New Password" field is a "Cancel" button. At the bottom of the dialog box, there is a status bar that says "Ready".

You can easily change your trade routing password after you have logged in to CQG trade routing.

1. Click the **Setup** button.
2. Select **Change Password**.
3. Enter your old password.
4. Enter your new password.
5. Enter your new password again in the **Verify** field.
6. Click the **Change** button. The window will close, and you will receive notification of a successful password change.

Order Types Supported

CQG offers these order types:

Type	Description
Bracket	A type of order-places-order (OPO) where filling, for example, a buy order triggers either a sell OCO (a profit target order and a stop loss order), a profit target order, or a stop loss order. In the case of an OCO, if one of those orders is filled, then the other order is cancelled.
DOM-Triggered Stop	A market order that is triggered only when the inside market bid/ask quantity falls below the order's trigger level.
DOM-Triggered Stop Limit	A limit order that is triggered only when the inside market bid/ask quantity falls below the order's trigger level.
Funari	For this order type, any unfilled order quantity is executed as a market order at either the morning close or afternoon close.
Iceberg	A limit day order that has both a total quantity and a display quantity that is shown publicly on the order book.
Limit	An order at a specified price.
Market	An order at the best available current price.
Market-If-Touched	An order that becomes a market order when a specified price is reached. The order is executed at the first available price at the time the specified price is reached.
Market Limit	SFE-specific. An order that is filled according to the three best prices.
Order-Cancels-Order	An OCO is a multi-part order. If one part of the order is executed, then all other parts are cancelled.
Stop	A market order that is triggered when the stop price is hit.
Stop Limit	A limit order that is triggered when the stop price is hit.
Trailing Limit	An order that tracks the market and automatically adjusts its price level position in the exchange's order book. For a buy order, as the best bid/offer/trade (depending on your settings) moves up, your order moves up with it based on the trailing offset. When the best bid/trade/offer trade moves down, your order holds. When the best bid/offer/trade matches your order price, the order

Type	Description
	executes.
Trailing Stop	Trailing stop orders adjust their trigger price in concert to the direction of the market on a tick-by-tick basis, initially trailing the market with the same distance to the market price when the order is first placed. The trigger price of a trailing sell stop order automatically steps higher with the market for each up tick, but does not step lower.
Trailing Stop Limit	An order that adjusts its trigger price in concert to the direction of the market on a tick-by-tick basis, initially trailing the market with the same distance to the market price when the order is first placed. The trigger price of a trailing sell stop order automatically steps higher with the market for each up tick, but does not step lower.

CQG offers these times in force (durations):

Time in Force	Description
Day	Day orders are cancelled at the end of the trading day.
Fill and Kill	FAK orders require that any remaining quantity after a partial fill be cancelled.
Fill or Kill	FOK orders require that the entire quantity be executed immediately or the order is cancelled.
Good-till-Cancelled	GTC orders are left open until canceled by the trader.
Good-till-Date	GTD orders are left open until the date specified by the trader.
Good-till-Time	An order that remains open until a specified time. At that time, any unfilled lots are cancelled.
On Close	An order to be filled near the market close. If the order cannot be filled at the close, then it is cancelled. For a limit-on-close order, the order is executed only if the price is better than the limit price.
On Open	An order at the market open price. If the order cannot be filled at the open, then it is cancelled. For a limit-on-open order, the market open price must meet the limit condition.

Adding the Sound Board to the DOMTrader and Order Ticket

The Sound Board application plays sounds to indicate:

- new trades;
- changes to the best bid and ask; and
- changes to the DOM book.

By default, DOMTrader and Order Ticket have a **Sound Board** button on their [title bars](#). You can [remove these buttons](#).

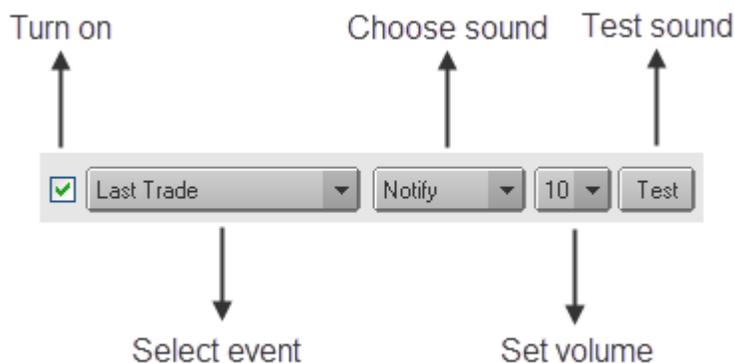
In order to play sounds, you'll need [to configure them](#) first.

Once sounds are configured, the Sound Board is activated. Please note that both the **Enable Sound Board icon** check box and at least one **Play Sound** check box must be selected in order to hear the sound alerts.

The Sound Board is easily [muted](#) by window or by application.

It is also available on Quote Board, Order Ticker, Time and Sales, and Portfolio Time and Sales.

To turn on and configure the Sound Board



1. Right-click the **Sound Board** button on the window's title bar.
2. Click **Configure**.
3. Select the check boxes for the sound alerts you want to activate.
4. Click the arrow buttons to choose the type of event, such as last trade, the sound, and the volume of the sound.
5. Click the **Test** button to preview your selection.
6. Click **OK**.

You can use your own sound files, but they cannot be over 4 seconds long.

To mute the Sound Board

Click the **Sound Board** button. You can also right-click the button to mute sounds on all windows.

To remove the Sound Board button

Sound Board buttons are displayed by default and are controlled by a display preference.

1. Click the **Setup** button.
2. Click **Trading Preferences**.
3. Go to **Display** preferences for all trade entry displays.
4. Unselect the **Enable Sound Board icon on header bar** check box.

Displaying Study Values on the DOM

Instead of having to move from your trading application to a Chart to see the latest values associated with one your studies, you can place these values directly on the DOM on both the DOMTrader and Order Ticket.

You begin with a chart to which you have added a study. From the chart, you select to display the study values on the trading applications, both the DOMTrader and the Order Ticket.

Only studies that can be placed as an overlay on a chart can be linked to the DOM. The Chart Analog Overlay (Analog) is an exception; it cannot be displayed.

Your study values are maintained on the DOM even if you:

- create a new tab with this symbol;
- open a new DOM with this symbol;
- change the symbol on the chart;
- change the study or its parameters;
- change or restore the page;
- upgrade; or
- log off.

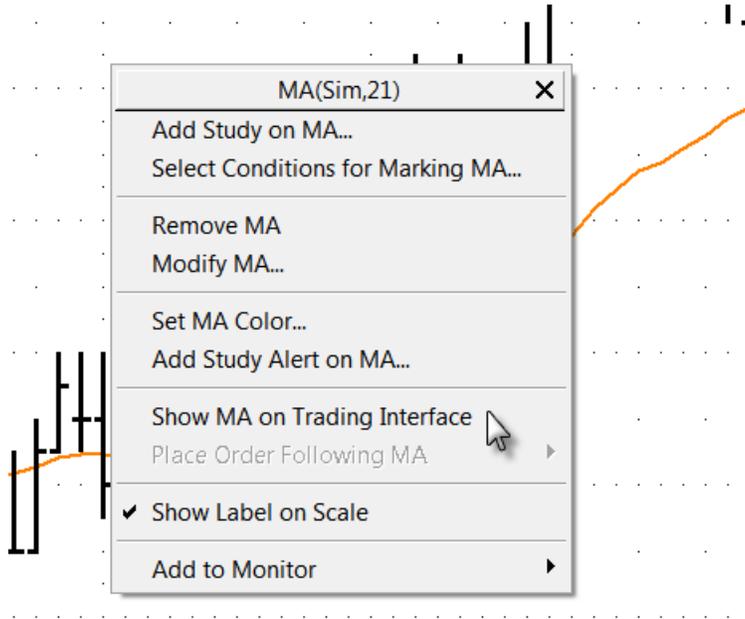
You can add up to twenty additional studies.

The study values are removed if you chose to remove them or if the symbol expires.

[To place an order based on study values](#)

To add study values

1. Open a chart and add a study.
2. Right-click the price label associated with study, and click **Show [study name] on trading application**.



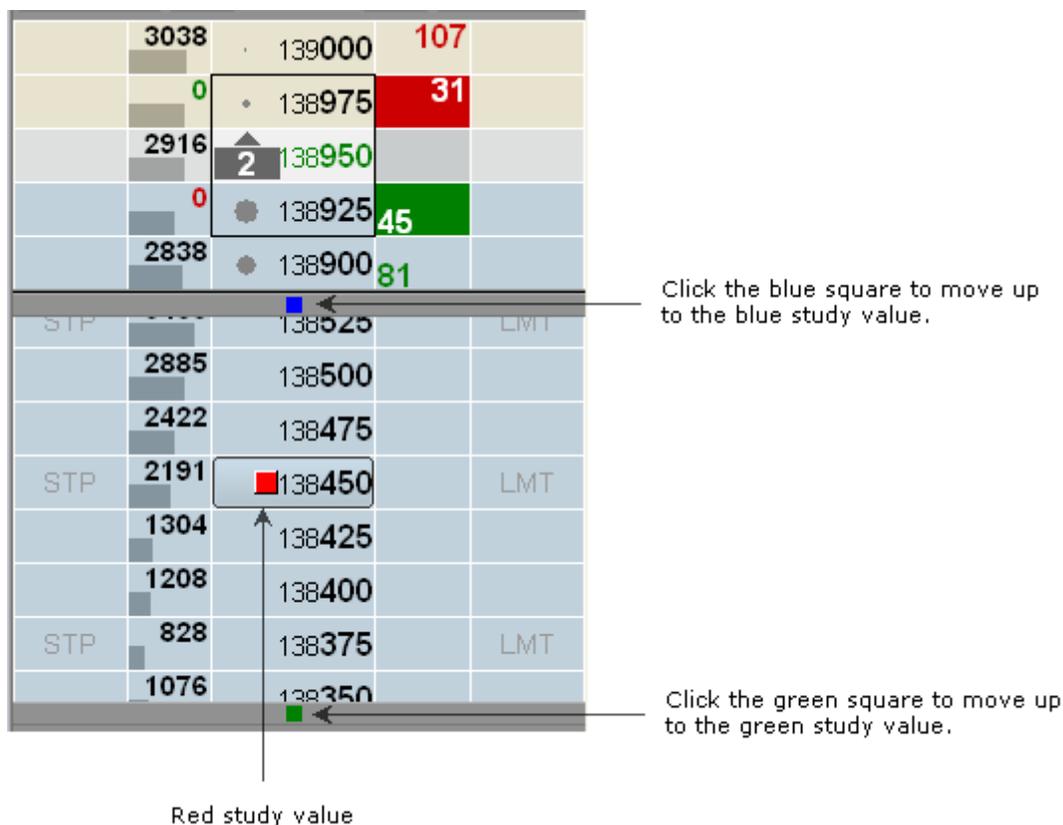
The DOM displays squares, in the same colors as the study lines, on the price row that corresponds to the study curve price value, like this:

		1	138500	52	
	5	1	138475	85	
Buy	647		138450	95	Sell
	751		138425	183	
	1642		138400	185	
Buy	908		138375	118	Sell
	3		138350		

MA=1384.14
MA [Sim,21]
EPM2,5

When you hover the mouse over the study value square, the study value box tooltip pops up. It includes: the study name, the price, the symbol, the parameters, and the chart interval (in this case, 5-minute).

If a study has several lines, such as the Moving Average Cross, each line is represented on the DOMTrader according to the color of the line on the chart. If study values are at the same price, the study value square will alternate color every second.



To select your rounding preference

If the study value is not aligned to the tick size (applies to compressed data also), then it is rounded.

1. Right-click the study icon (square) on the DOM.
2. Select **[Study] value rounding**, and then select the method. You have three choices:
 - **Use standard rounding method** (default): If study curve value is not aligned to the visible tick size, then it shall be rounded to the closest visible row according to standard mathematical rules.
 - **Round toward the current price**: If study curve value is not aligned to the visible tick size, then it shall be rounded to the closest visible row located to the market direction.
 - **Round away from the current price**: If study curve value is not aligned to the visible tick size, then it shall be rounded to the closest visible row located out of the market direction.

To remove study values

Right-click the study icon (square) and then select your removal choice:

- Remove the study from this individual trading application.
- Remove the study from all trading applications.
- Remove all studies from all applications for a particular symbol.

Displaying Condition Values on the DOM

Instead of having to move from your trading application to see latest condition values, you can place these values directly on the DOM on both the DOMTrader and Order Ticket.

You can add up to four conditions. You will have to remove one to add another. Please note that you may have to resize the window in order to see all four.

If the condition is false, then the condition icon will have a black border.

If the condition is for a commodity, such as EP, then it will rollover to the active contract after expiration of the previous contract. If the condition is for a specific contract, such as EPZ8, then it will be removed after the contract expires.

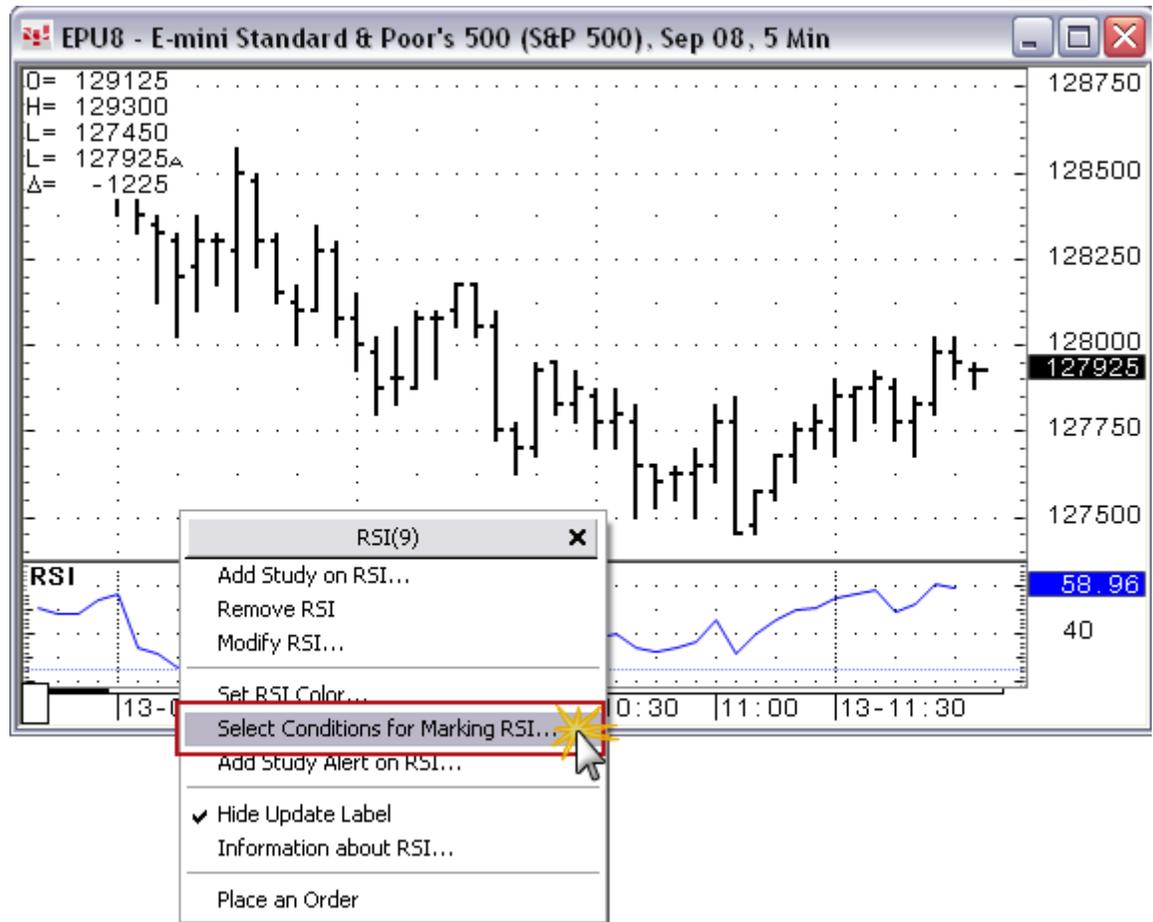
Custom condition values will be updated if you change the custom condition.

The condition values are maintained on the DOM even if you:

- create a new tab with this symbol;
- open a new DOM with this symbol;
- move to another page with a DOM for this symbol;
- change the symbol on the chart;
- remove the condition from the chart;
- change or restore the page;
- upgrade; or
- restart CQG IC.

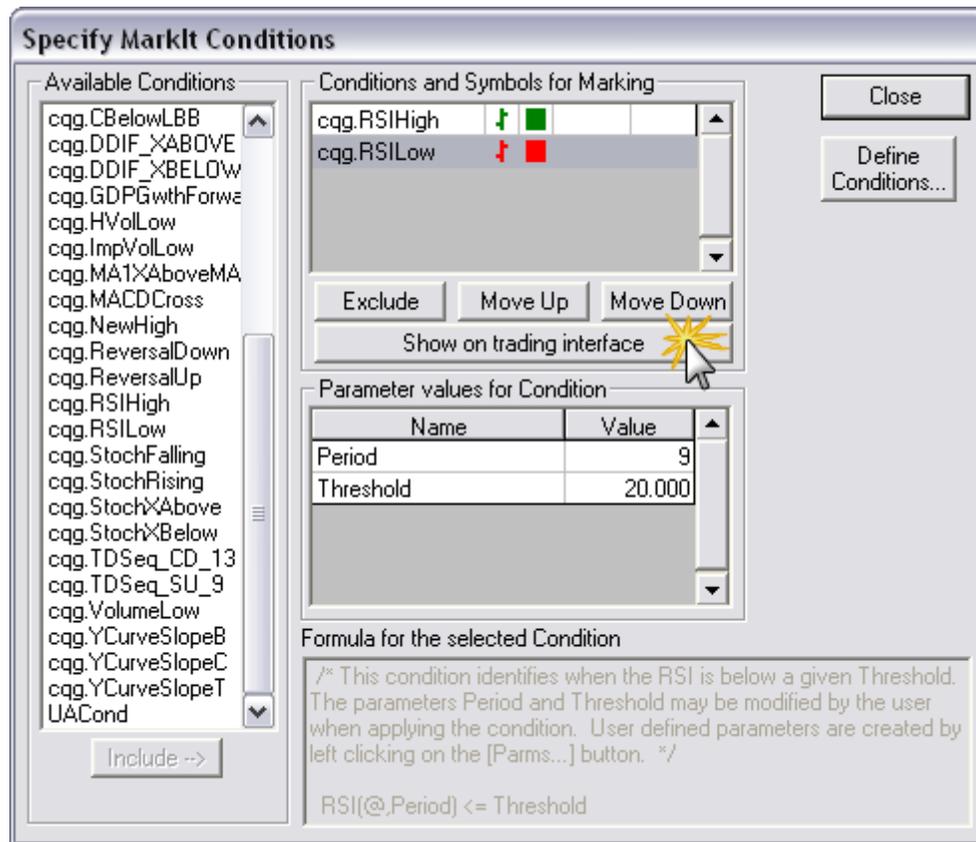
To add condition values

1. Open a chart and add a study.
2. Right-click on a study bar and click **Select Conditions for Marking [Study]**.

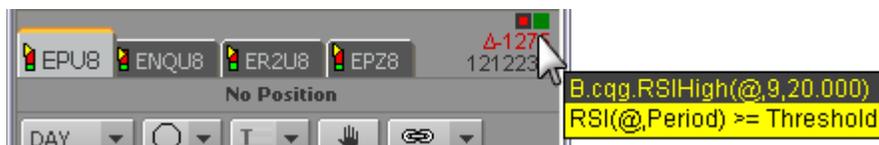


3. On the Specify MarkIt Conditions window, select the conditions you want to display on the DOMTrader.

- Click the **Show on trading application** button.

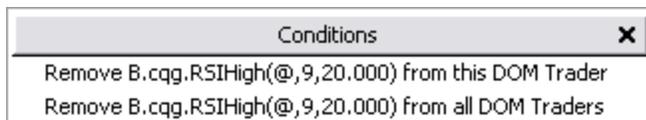


The conditions will be marked at the top of the DOMTrader by colored squares. Hovering your mouse over a square displays the condition data.



To remove condition values

Right-click the condition icon (square), and then choose one of the remove options:



Displaying Variable Tick Size

Some contracts have a tick size that changes when the front month changes. So, there is one tick size for the front contract and a different tick size for future contracts.

In this example, the tick for the front month is 6.25, while the tick for contracts more than two months out from the front month is 12.5.

Eurodollar (Globex) ▼		EDA ▼	
CME on GLOBEX ▼		GLOBEX ▼	
Properties			
Contract Size:	1,000,000 value with 3mo	Limit Move:	None
Quoted In:	Points	Initial Margin:	1215
Tick Size:	0.0025/0.005	Maintenance:	900
Tick Value:	6.25/12.5 USD		
Trading Hours For			
04/09/09 - 01/01/10 ▼	Chicago	London	Tokyo
Name	Open	Close	Open
Globex Night	17:00	07:20	18:00
Globex Day	07:20	14:00	08:20
Globex Day	14:00	16:00	15:00

6.25: active month
12.5: month >= 2

Other contracts have a tick size that changes according to price level. So, there is one tick size when the premium is under 5 and a different tick size when the premium is greater than 5 for the same contract. For EP options, the tick for prices less than or equal to the premium of 5 is 2.5. Prices over the premium of 5 have a 12.5 tick.

The variable tick sizes are listed in the Tick Value field on the Contract Spec window. Hovering your mouse over those values provides a tooltip.

Variable tick size applies to both futures and options.

The DOMTrader, Order Ticket, Snap Trader, and Order Ticker all display variable tick sizes. Orders must be at a tradable price. When a stop limit order is modified, the price slippage between stop and limit prices is kept. If the resulting limit price becomes non-tradable, it is rounded to the nearest tradable price. If the rounded price equals the stop price, a single tick slippage between stop and limit prices of the modified order is set.

To display options in ticks

1. Open any options window.
2. Click **Setup**, then **Options Preferences**.
3. Click the **Greeks Scale** tab.
4. In the **Price scale** field, click **Tick Units**.

When displaying Gamma in ticks, if the underlying contract has different tick sizes depending on its price, the tick size used to calculate the Gamma is the maximum tick size of these tick sizes. When displaying Theta, Vega, and Rho in ticks, if the contract has different tick sizes depending on its premium, the tick size used to calculate the Gamma is the maximum tick size of these tick sizes.

Displaying Spread Positions Information

Exchange-traded spread instrument positions are displayed on the DOMTrader, Order Ticket, and Orders and Positions window (Open Position Summary) for calendar, butterfly, pack, strip, bundle, and intercommodity spreads.

Spread positions entered manually are also included.

The position is calculated synthetically using a matching algorithm. First, the system creates two groups of spreads. The first group includes spreads that were traded on the current system. The second group includes all available exchange-traded spreads for that commodity. Then, the system sorts the spreads by type - calendar, butterfly, pack, strip, and then bundle. One by one, the system attempts to match outright trades to an exchange-traded spread.

For example, you enter **Buy 1 EDAS3M7**. The legs are filled, and your system shows fills **Buy 1 EDAM7** and **Sell 1 EDAU7**. Then, the matching algorithm begins. EDAS3 is in the first group of spreads (those traded on the system). The second group includes all EDA spreads. The spreads are sorted by group, calendar in this case. The system then tries to group orders that match the EDAS3. **Buy 1 EDAM7** and **Sell 1 EDAU7** are appropriate positions for **EDAS3M7**, and so they are grouped. The spread position is then **+1 EDAS3M7**.

Spread position information must be enabled in [Trading Preferences](#).

On the Order Ticket and DOMTrader, spreads are displayed in italic font in OTE area.

Combined net position for relative commodities applies to spreads also, if enabled in [preferences](#).

You can liquidate spread positions using the **X All/Liq All** button.

Spread Position Calculation by Execution

CQG offers the ability to calculate native and synthetic spread positions either

- by execution of the strategy (based on trade data)
- by exchange trades, i.e. outright leg positions (based on clearing data)

By offering two calculation modes: *by execution* and *by exchange trades*, CQG provides a comprehensive picture of the current account state.

The calculation mode is determined in Strategy Order preferences. Select the **Group strategy positions by filled spread orders** check box to calculate position by execution.

When this option is selected, the **Use native strategy quotes to calculate OTE** check box is selected and disabled, and the **Show combined net position for relative commodities** check box is cleared and disabled.

Only the current day is considered in this calculation.

If a synthetic spread has a "bond when issued" leg, then that leg fill is ignored when calculating P&L for the entire spread.

If a synthetic spread has all option legs, then the spread is treated as an option itself and contributes to the MVO and UPL value. If a synthetic spread has a mixture of non-option and option legs, then the spread is treated as a future. The OTE value of its position is a sum of the OTE value accumulated over its non-option legs and the UPL value accumulated over its option legs.

Average price of an open position on yield synthetic spreads is converted to yield units using averaging over prices (converted to yield) of concrete leg positions associated with each of the spread order fills converted into the spread's open position.

The position calculation mode does not apply to aggregation-only strategies (no spreads).

If a synthetic strategy uses a fractional trade ratio, all fills executed for the strategy are taken into account in individual leg positions of this fractional strategy, rather than strategy as a whole.

Incomplete leg fills are not part of the by execution spread calculation.

Expiration information is provided for outrights only.

If synthetic spread legs have different currencies, then the current reporting currency of the account is used. The currency will not be changed later if the reporting currency of the account is changed.

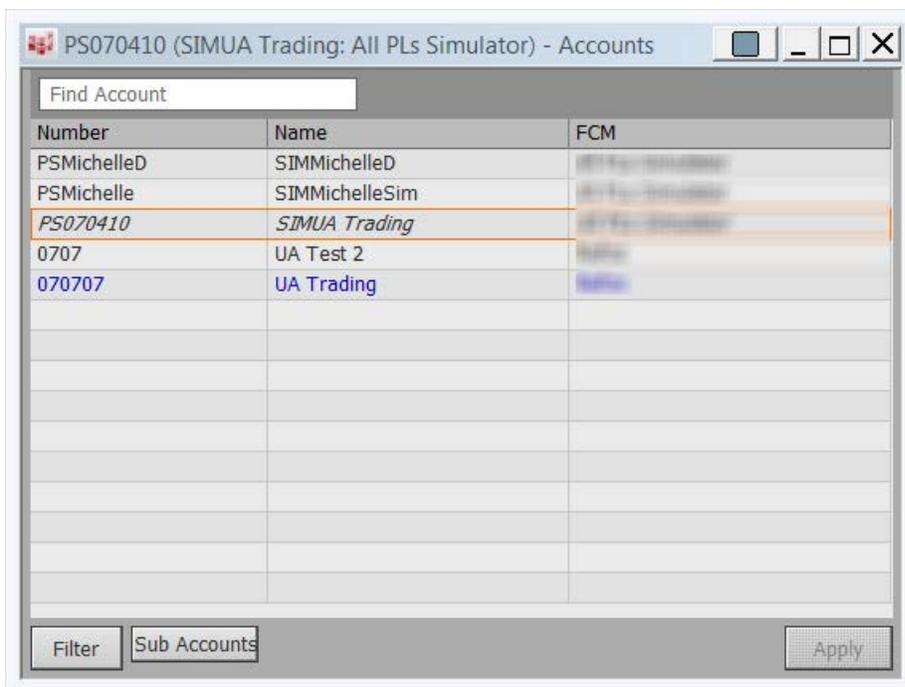
Synthetic strategies that differ only by working leg parameter are considered different synthetic strategies. For example, SPREAD(EP-ENQ, L1,,1:1) shows a long position, while SPREAD(EP-ENQ, L2,,1:1) shows no position.

When you upgrade from a version without this option to a version with this option, you receive a message notifying you that current day position data has been cleared. That data is restored when you log on to trade.

Account Picker

Account Picker is used to change accounts on order entry and order management applications: DOMTrader, Order Desk, Order Ticket, Quote SpreadSheet, SnapTrader, Spreadsheet Trader, and Orders and Positions.

To open Account Picker, click the **Trade** button, then **Accounts**. When you open Account Picker this way, you can [change accounts across all applications](#).



Sort columns by clicking the column heading. Choose which columns to display, set nicknames, and select a default account in [Account Settings](#) preferences.

Account Picker can also be opened directly from a trading application. Right-click the title bar or click F11. When you open Account Picker this way, changing accounts applies only to that window.



Spread traders should note: When the spread and its legs are displayed (for example: DOMTrader CLE-ET, DOMTrader CLE, and DOMTrader ET): If you change the account in the spread (CLE-ET), then the account changes for all open legs (CLE, ET). If you change the account on one leg (CLE), the account for the spread (CLE-ET) and other leg (ET) do not change.

Account Picker Toolbar

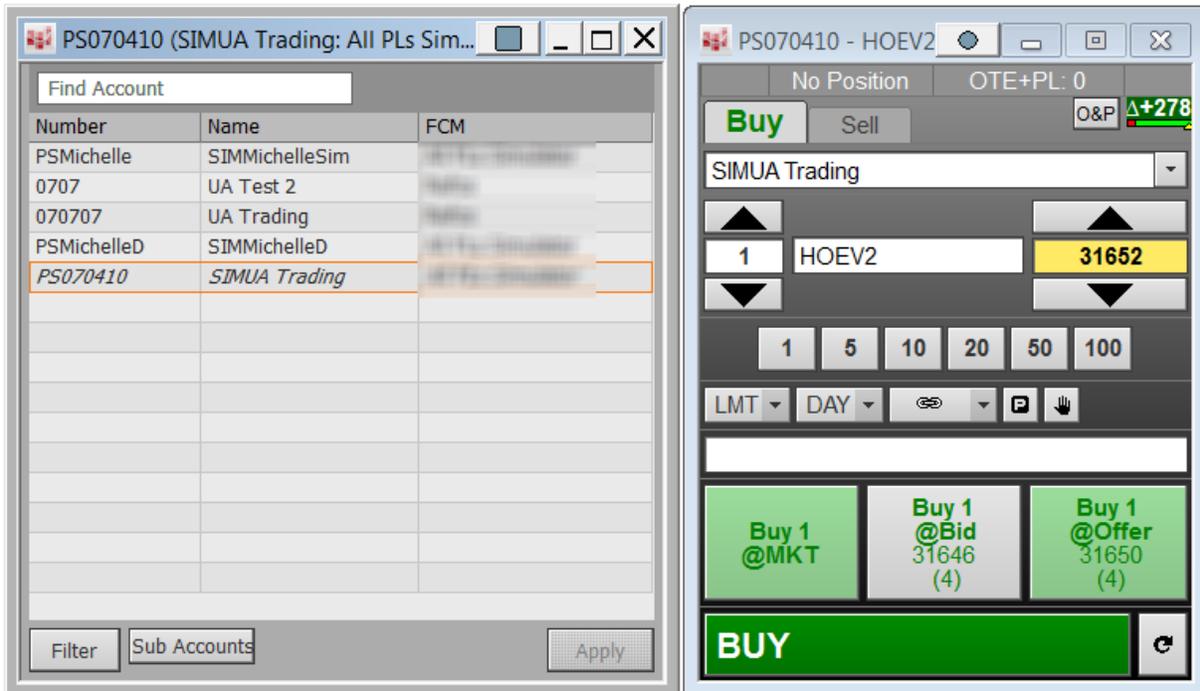
The Account Picker toolbar includes these buttons:

OrdPos button

This button opens the Orders and Positions window.

EditAcct button

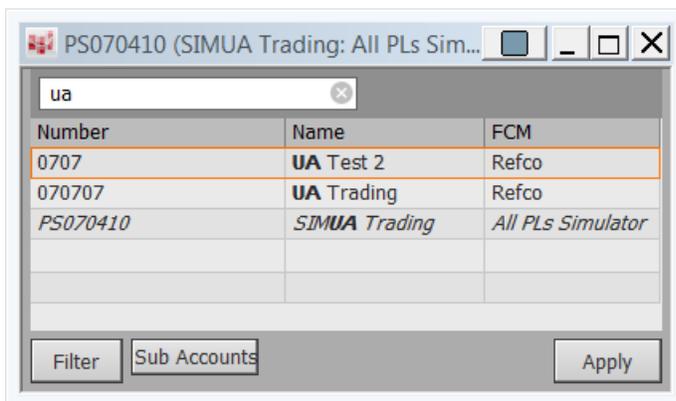
This button opens the Account Setup window. Please see "[Configuring Account Settings](#)" on page 232 for more information.



To change accounts

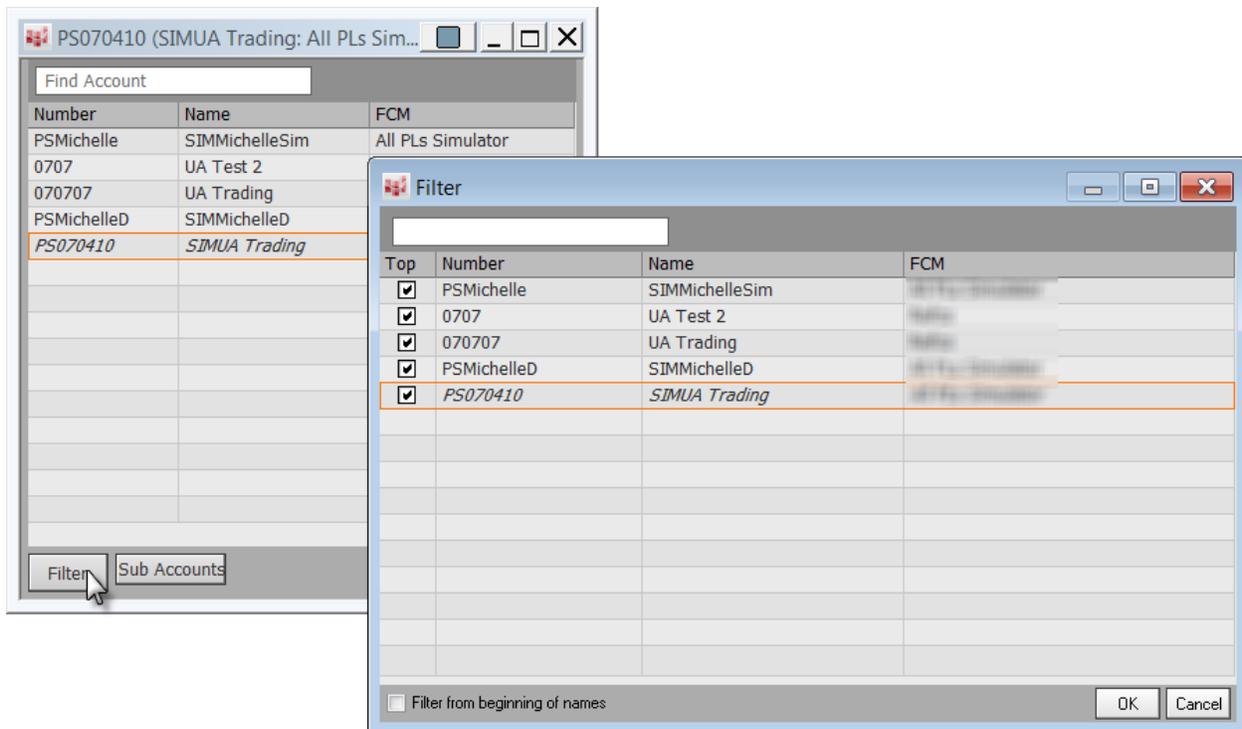
Click the account, then click **Apply**. The account in use is in italic font. (On individual trading applications, click **OK**.)

Search for accounts in the **Find Account** field at the top of the window. This is helpful when you have a long list of accounts.



To change which accounts are listed in the Account Picker

Click the **Filter** button, then select the check boxes to choose which accounts to include in the Account Picker list.



If you try to hide the selected account, it remains displayed. In order to hide it, you first need to change accounts (click the account then click **OK**).

The Filter window also includes a search field. The system searches for a match anywhere in the field. So, if you search for "ma" any word that includes "ma" is displayed in the results. If you would like the search to match only the beginning of the field, click the **Filter from beginning of names** check box. So, if you search for "ma" only those words starting with "ma" are displayed.

To display subaccounts

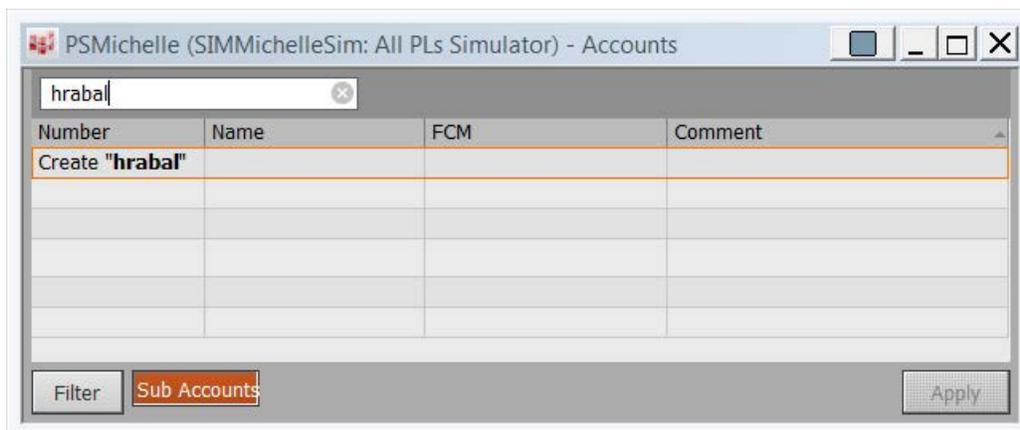
Click the **Sub Accounts** button at the bottom of the Account Picker. Note: This button is not included on individual trading applications.

The **Comments** column is added to the display. [Comments are used for subaccounts.](#)



You may have to click the **Filter** button to add subaccounts to the list.

To enter a new subaccount, start typing.



Please note that subaccounts cannot be used with all trading applications.

Entering Orders

You may to familiarize yourself with the [keyboard shortcuts](#) available to you when you enter orders. They can help improve your workflow.

Placing Orders on the Order Ticket

There are several ways to place an order from the Order Ticket window: using the Buy/Sell buttons, using the Order Entry field, and using the HeadsUp Display.

Note: You can also place orders on the Order Ticket when your focus is on another window. For example, suppose you have an Order Ticket open, but you are currently working with a chart, so that the chart is the active window. Hover your mouse over a buy or sell button on the Order Ticket, use your mouse wheel to scroll to the desired price, and click. The order is placed, and the Order Ticket becomes the active window.

To enter an order with the buy and sell buttons

Place orders at the market, with a limit price, or for best bid or offer.



1. Select your order type and quantity.
2. Click your desired price to populate the buttons with that price. You can also use your keyboard to select a price.
3. Click the **Buy** or **Sell** button for the type of order you want to place. For market orders, click a **Buy @ MKT** button.

If the price is below the market, the Order Ticket will display one standard buy limit button and stop and limit sell buttons.

If the price is above the market, the Order Ticket will display one standard sell limit button and stop and limit buy buttons, as seen in the example above.

To enter an order with the Order Entry field

1. Either click in the **Order Entry** field or press the **Tab** key.
2. Enter the order details, like this:



Order Entry:

The ticket changes as you enter the order. The order details will remain grayed out until you can submit it. Red text indicates an error. If you enter an instrument that is not tradable, it is indicated on the order buttons. If you click or tab out of the field, then the entry is cleared.

3. Click **Submit** or press **Enter** to place your order.

You can also copy and paste an order by using **Ctrl-C** to copy and then **Ctrl-V** to paste.

Format and allowed values

Non-FIT orders should be entered in this format:

[FCM account number] [side] [size] [instrument] [price] [order type] [duration]

Abbreviated versions (add space at end of entry to activate **Submit** button):

[FCM account number] [side] [size] [instrument] = market order

[FCM account number] [side] [size] [instrument] [price] = limit order

[FCM account number] [side] [size] [instrument] [price] [order type] = day order

Order elements are separated by a space.

Allowed values:

FCM account number = type the account number or type **#** to use the current account.

Side = **B** or **S**.

Instrument = Short or full name.

Price = **M** for market or **@price** or **price** for limit.

Type = **LMT**, **STOP**, **STL**, **TSTP**, or **TSTL**.

If **STL/TSTL**, then follow it with the price.

Duration = **DAY**, **GTC**, or **GTD**.

If **GTD**, then follow it with the date in mm/dd/yyyy format.

If you enter a FIT instrument, then the format is:

[FCM account number] [side] [size] [instrument] [@price] [lmt] [aggressive flag] [duration]

Allowed values:

Aggressive flag = **AGGR** or **PASS**.

Duration = **DAY**, **GTC**, **GTD**, **FAK**, or **FOK**. If **GTD**, then follow it with the date in mm/dd/yyyy format.

Entries are not case-sensitive.

Placing Orders on the Order Desk

The procedure for placing orders on the Order Desk depends on the placement of components on the window and your particular practices.

1. Click the **Buy** or **Sell** tab.
2. Select an account.
3. Enter an order quantity or click a quantity button.
4. Enter the symbol or formula.
5. If desired, change the price.
6. Select order type from the menu.
7. Select duration from the menu.
8. Click the appropriate buy or sell button.

Working orders are indicated with a message:

Order State: Working

14:46:34: SIMMi (All PLs Simulator: PSMi)
Buy 1 F.US.EPH12 at 124600 LMT

Placing Orders on the DOMTrader

The DOMTrader window provides more than one way to place an order. You can use the mouse, the keyboard, or a combination of both.

To learn more about order type icons and status icons, see "[Identifying Order Type Icons](#)" on page 192 and "[Viewing Order Status](#)" on page 193.

To enter an order by dragging and dropping a price

1. Set the order qualifiers and quantity for your order using the [buttons on the DOMTrader](#).
2. Click and drag the price you want to buy or sell at to the **Buy** or **Sell** column. The order details will appear like this as you drag:

	85100		
	85075		
LMT	20@85050		TSTP
	85025		
	85000		

3. If you have notifications turned on, then you receive a confirmation message. Click **OK**. Your order is placed, and the order icons are displayed on the DOMTrader like this:

	85100		
	85075		
20	85050		LMT
	85025		
	85000		

To switch between the duration order type and the stop order type, press CTRL. You'll notice the [order icon](#) at the top of the DOMTrader change. For example, suppose you have ICBG DAY set for order duration and DOM-Triggered Stop selected for stop management. If you place an order, the order will be a DAY iceberg order. If you press CTRL while placing the order, the order will be a DOM-Triggered Stop.

Note: The price of a working order does not necessarily correspond to the cursor position at the time of the action, because the market may change before the exchange receives the order.

To enter an order with fast-click

You can place orders in just one click if fast-click mode is activated in the [Trading Preferences](#). Click the buy or sell column at the desired price level.

To switch between the duration order type and the stop order type, press CTRL. You'll notice the [order icon](#) at the top of the DOMTrader change. For example, suppose you have ICBG DAY set for order duration and DOM-Triggered Stop selected for stop management. If you place an order, the order will be a DAY iceberg order. If you press CTRL while placing the order, the order will be a DOM-Triggered Stop.

To enter an order using the buy and sell buttons



Click a buy or sell button at the top of the DOMTrader.

To create stacked orders

You can place orders at the same side of the market, for the same price, and for the same commodity, but with different order types by creating a [stacked order](#).

Simply drag and drop the orders in the same price field. You can also use the keyboard.

Entering Orders Using the Keyboard

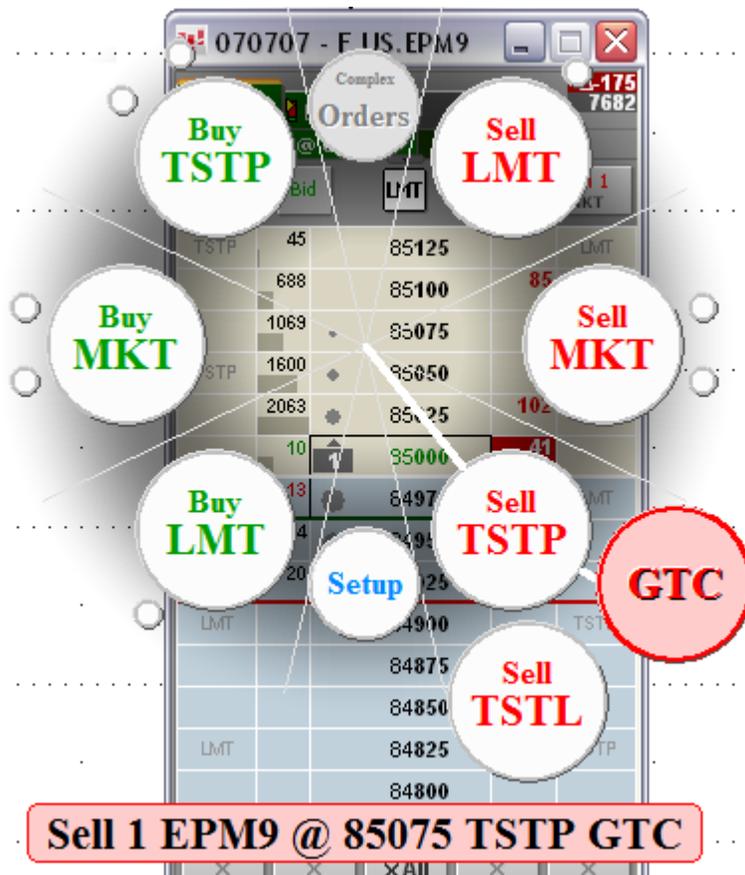
You can place orders using your keyboards. See [Keyboard Keys](#) for a list of keyboard shortcuts and their descriptions.

Entering Orders Using HeadsUp

Use the HeadsUp display on the DOMTrader and Order Ticket to place orders.

The HeadsUp display is overlays the window. Sell actions are red, buy actions are green, and complex orders and setup actions are blue. The small white circles indicate additional order types.

You need [to enable HeadsUp](#) before being able to place orders with it.



1. Right-click the price to open the HeadsUp Display. Continue to hold the mouse down until you wish to close the HeadsUp.
2. Drag the cursor to the Order action you want. When you release the mouse, the selected action is taken, and the results are displayed in the order column.

Entering Orders from Study Values

When you have [study values displayed on the DOM](#), you can place an order using those values, a Study Following Order.

A Study Following Order is a DAY limit, stop, stop limit, DOM-triggered stop, DOM-triggered stop limit, or iceberg order that follows the corresponding study value. OCO and bracket orders are allowed. Trailing and parked orders are not valid.

You can place an order at the value or as an offset. The system automatically modifies the order price based on the study; it will continue to do so when partially filled.

If there is more than one study at a single price, the icon will blink, alternating the color of each.

If a study has a custom session, the study following order will be cancelled automatically when the session ends.

Removing the study from the DOM display does not cancel an order placed from that study.

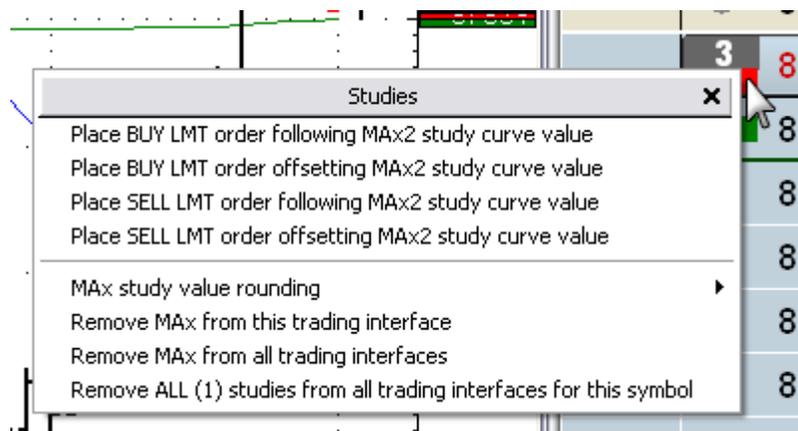
You can also [place these orders from a chart](#).

Placing these orders requires an enablement.

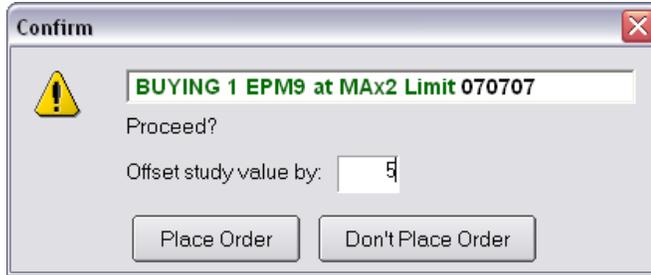
To enter an order

Before entering an order, you must have [study values displayed on the DOM](#).

1. Right-click on the study icon (square) in the [price column](#) to display this menu:



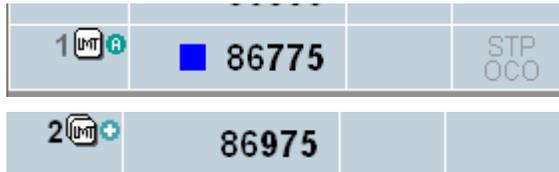
2. Click the type of order you wish to place. If you choose an order type that includes an offset, you will be prompted to enter the offset value:



Study Following Orders will be displayed on the DOM, like this:



OCO orders will include number or letter on the icon, while bracket orders include a +:



Entering Orders with Comments

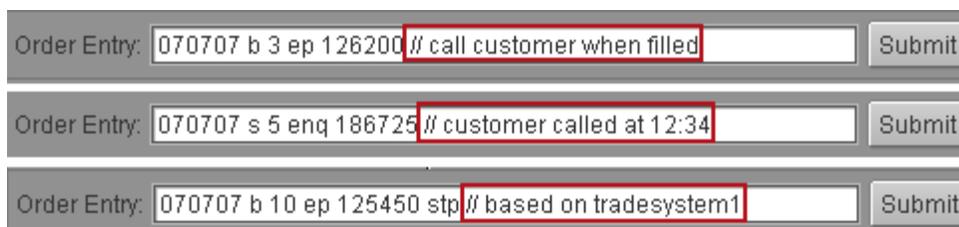
You can add a comment to an order when you enter the order using keyboard order entry on the Order Ticket or when you confirm the order.

Comments are [displayed on the Orders and Positions window](#).

See also: [To use order comments to identify and filter by sub-accounts](#)

To add a comment with keyboard order entry

Type // after the order followed by the comment text, like these:



Three examples of order entry fields with comments. Each field is a text input box followed by a 'Submit' button. The first field contains '070707 b 3 ep 126200 // call customer when filled'. The second field contains '070707 s 5 enq 186725 // customer called at 12:34'. The third field contains '070707 b 10 ep 125450 stp // based on tradesystem1'. The comment text in each field is highlighted with a red box.

To add a comment on the order confirmation window

In order to enter comments on this window, [notifications must be turned on](#) in preferences, and the [comment column must be selected](#) for the Orders and Positions window.

1. Click the comments field.
2. Type your comment.
3. Click **Place Order**.



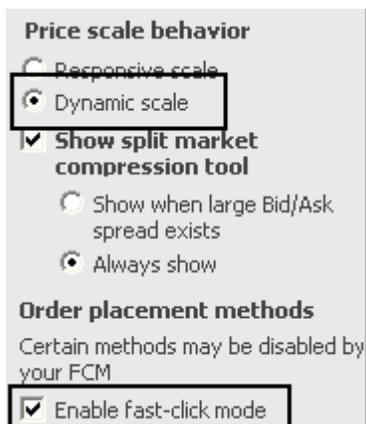
A screenshot of a 'Confirm' dialog box. The title bar says 'Confirm' and has a close button (X). Inside the dialog, there is a yellow warning triangle icon on the left. To its right, a text box displays 'BUYING 1 EPM9 at 88275 Limit 070707'. Below this, there is a text input field with the placeholder text 'Enter order comments here'. At the bottom, the text 'Proceed?' is followed by two buttons: 'Place Order' and 'Don't Place Order'.

Entering Held Orders

When the DOMTrader is in dynamic mode, the DOM Ladder changes rapidly in a fast-moving market. Orders move with the DOM Ladder making it difficult to click those orders to modify or cancel them. Held orders resolve that difficulty.

When you place the mouse over a resting order, that order is held. Your resting order stays in place while the DOMTrader moves. In that way, it's held. A copy or ghost of that resting order in a lighter color moves with the DOMTrader. If you want to cancel or modify the price of that order, simply click that held order.

This functionality applies when fast-click mode is enabled for the dynamic scale. To check your settings, click the **Setup** button, and then click **Trading Preferences**. The **Trading Preferences** window opens. The price scale behavior should be set to **Dynamic scale** and the **Enable fast-click mode** check box should be checked, like this:



To hold an order

Place the mouse cursor over the order. The order is highlighted:

1 UNIT	87000	1963	STP
--------	-------	------	-----

If the price scale moves or if the price scale is scrolled using the keyboard or mouse wheel while the mouse cursor is over the order cell, then the order is held in that place. The original order is displayed as a ghost order and will move with the original price.

1 UNIT	87025	1206	
1 UNIT	87000	1999	STP

For example, this order was originally placed for 87000. While the order was held, the market moved. The order stayed on the same row, now at 87025, and the original order is seen as a ghost order at 87000.

To remove the hold

To remove the hold on the order, you can:

- move the mouse cursor;
- select the order; or
- cancel the order.

The order will not be held if the price of all orders in the held cell are changed using another application or when the market changes for trailing orders.

To enter an additional order

Placing the mouse cursor over the bottom of the order cell highlights it and displays the price:

1 UNIT	87000	1260	STP
000			

Clicking that price places an additional order at that price.

Entering Sweep Orders

A sweep order has a quantity totaling the aggregated depth quantity. Sweep orders are placed by dragging a quantity in the DOM column to the appropriate order column.

The default enablement for Sweep Mode is off. To turn Sweep Mode on, click the **Setup** button and then **Trading Preferences**. On the **Display** window, click the **Enable sweep mode** check box.

To place a sweep order

1. Click a quantity in the DOM column and drag it to the appropriate order column, like this:

		86950	1042	1
STP		86925	1089	LMT
		86900	781	
	1	86875	492	
LMT		86850	761	STP

Before you release the mouse button, the order quantity, price, and type are displayed, like this:

		86950	1101	
		86925	1322	
		86900	1626	
		86875	1131	
LMT	1	86850	569	
		86825	413	

Note that the quantity is equal to the aggregate bid or ask depth ($4648 = 1322 + 1626 + 1131 + 569$). The quantity will continue to update as long as you do not release the mouse button.

2. Release the mouse button. The order appears in the order column.

If you have the Order Placement Notification preference set, you will receive a confirmation message before the order is placed. If the Order Placement Notification preference is not set, then you will not receive a confirmation message before sweep orders are placed. To change the preference in CQG Client, click the **Setup** button, then **Trading Preferences**, and then **Notifications**.

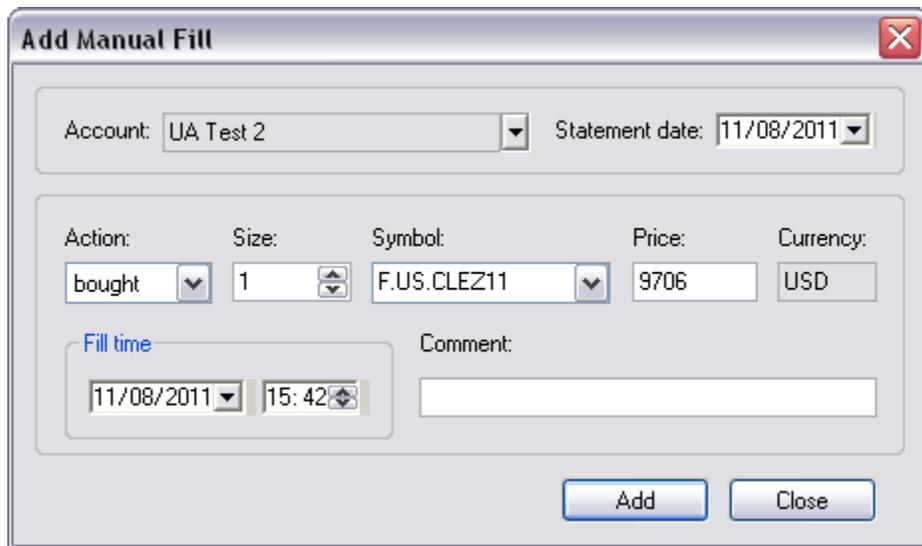
Entering Manual Fills

You have the ability to enter fills manually for those trades that did not occur through COG to be reconciled against the statement. All orders in the FCM account can be reconciled against the statement.

You need [to enable manual fills](#) before being able to enter them.

To enter a manual fill

1. Click the **Manual Fills** button . It turns orange, like this .
2. Enter an order. The **Add Manual Fill** window opens.



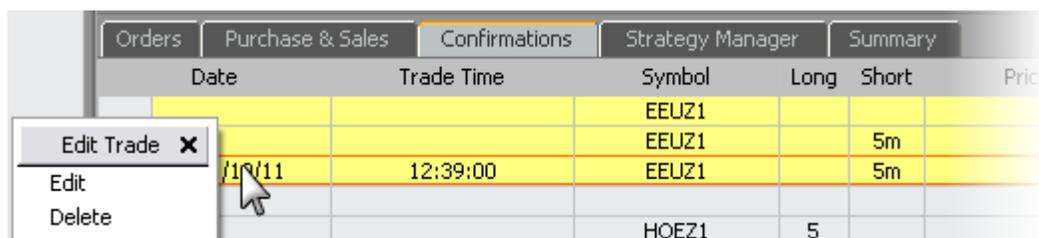
The screenshot shows the 'Add Manual Fill' dialog box with the following fields and values:

Field	Value
Account	UA Test 2
Statement date	11/08/2011
Action	bought
Size	1
Symbol	F.US.CLEZ11
Price	9706
Currency	USD
Fill time	11/08/2011 15:42
Comment	

3. Fill in the fields on the window.
4. Click the **Add** button. Manually filled orders are displayed on the Orders and Positions window and indicated by a lowercase m.

To edit a manual fill

1. Go to the **Confirmations** window on the **Orders and Positions** window.
2. Expand the manual fill order, so that you see all entries associated with it.
3. Right-click one of the trade details to open the **Edit Trade** menu:



4. Click **Edit** to open the **Update Trade** window.
5. Make the desired changes.
6. Click **Update**.

Entering Iceberg Orders

COG offers a suite of Smart Orders that includes iceberg orders. These orders are available for strategies (spread and aggregation) also.

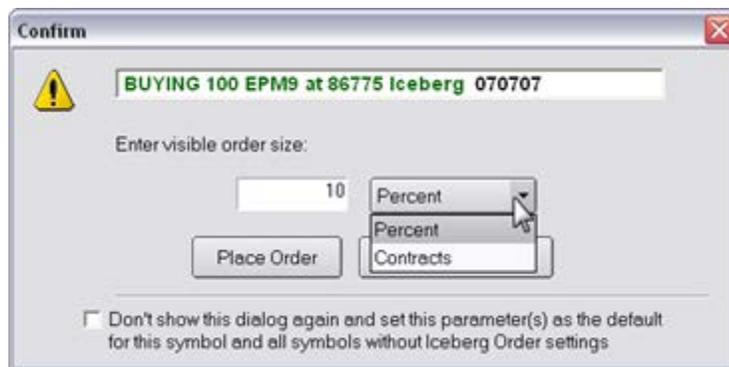
Placing these orders requires an enablement from COG and from you in [Smart Order Preferences](#).

An iceberg order is a limit day order that has both a total quantity and a display quantity that is shown publicly on the order book. These orders are supported on Globex, Ice, Montreal, and BrokerTec.

Add the **Visible Size** column to the Orders and Positions window to quickly identify the visible quantity for iceberg orders across many accounts.

To enter iceberg orders

1. Select **ICBG** from the [duration drop down menu](#). The order type icon changes: .
2. Place your order. This confirmation opens:



3. If necessary, change the quantity or percent that you want displayed.
4. Click **Place Order**. You will see the total quantity or percent of your order , but only the display quantity is visible on the book.

Entering Bracket Orders

CQG offers a suite of Smart Orders that includes Iceberg, Brackets, DOM-Triggered Stops, Trailing, and OCO orders.

Placing these orders requires an enablement from CQG and from you in [Smart Order Preferences](#).

A bracket order is a multiple leg Order Places Order (OPO). The first leg is an order with any regular order type (main leg). Once that leg is filled or partially filled, either one or two additional orders are placed. Options are:

- The main order triggers both a target order (profit leg) and a stop order (loss leg).
- The main order triggers a target order.
- The main order triggers a stop loss order.

In the event that both a profit leg and a stop loss leg are placed, if one of those orders is filled, then the other order is cancelled.

For example, you place a buy bracket order for the E-Mini S&P 500 at 1450.00. You confirm that you want to make an 8-tick profit and suffer no more than a 5-tick loss. Once the buy order is filled or partially filled, a limit offer to sell at 1452.00 and a stop loss order at 1448.75 are placed. If one of those orders is filled, then the other order is automatically cancelled.

The main order cannot be an OCO, but bracket orders can be legs of an OCO. Bracket orders cannot be parked.

Bracket orders are active only when you are logged on to trade. When you log off, you will receive a confirmation messages alerting you that you have active bracket orders and giving you a chance to cancel those orders. If you do not cancel the orders, then the main order is treated as a regular order and the profit and loss legs are cancelled.

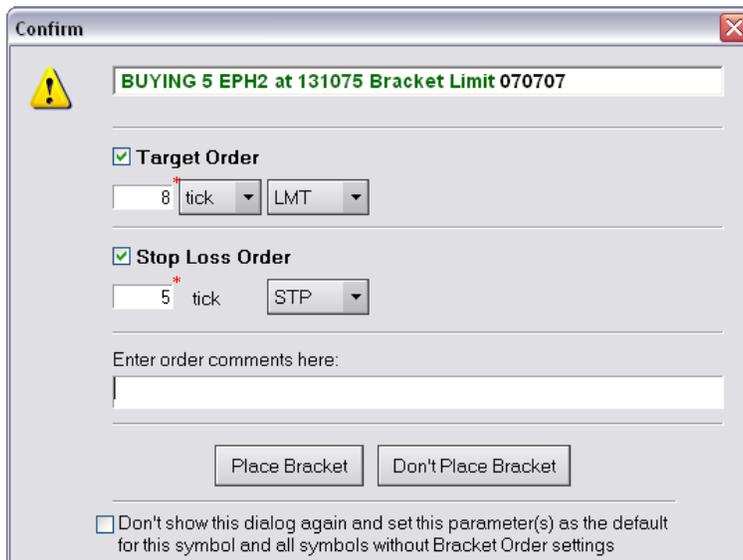
To enter a bracket order

1. Click the **Special Orders** button drop down arrow and select **BRKT Bracket Mode**, like this:



You'll notice that order buttons and watermarks have brackets around them.

2. Place an order. A confirmation window opens.



In this example, once our buy order is filled, two stop orders are triggered, one at an 8-tick profit (target order) and one at a 5-tick loss (stop loss order).

On the confirmation window, you have the option of disabling one of the legs, so that a single order, either target or stop loss, is triggered when our buy order is filled.

3. To set up a target order, make sure the check box is selected. Choose tick, currency, or price for the profit measurement, enter a value, and select an order type.
4. To set up a stop loss order, make sure the check box is selected. Enter a tick value, and select the stop type.
5. Click the **Place Bracket** button.

To modify and cancel a bracket order

Modify and cancel bracket orders as you would for any orders on the DOMTrader or Order Ticket.

If you modify the main order price or quantity, then the profit and loss orders are modified accordingly. Main legs that are rejected, cancelled, or expire result in the same action on the profit and loss legs.

If you cancel the target profit order, then the stop order is cancelled and vice versa.

Bracket orders are indicated on the Orders and Positions window with this bracket icon: .

The profit and loss legs of the order are displayed on the Parked tab until the main leg is filled or partially filled. If the main leg is partially filled, then the profit and loss legs will be placed with the quantity of the partial fill. The open quantity becomes a new OPO with a new OCO (profit and loss) leg.

Once a working is filled or partially filled, then two orders are triggered on the other side of the market, one is stop order and one is a limit order.

The limit order indicates the profit you want to make and the stop order indicates the loss you are willing to take. Once one of those orders is filled, the other is cancelled.

To exit bracket order mode

Select OCO in the linked orders menu.

Entering DOM-Triggered Stop (DTS) Orders

CQG offers a suite of Smart Orders that includes DOM-Triggered Stops.

Placing these orders requires an enablement from CQG and from you in [Smart Order Preferences](#).

A DTS order is any type of stop order that behaves like a stop order, but is not triggered until the bid/ask quantity falls below the order's trigger quantity (DOM threshold). These orders must be enabled by CQG. All DTS orders are supported on all exchanges and are fully synthetic.

To enter DTS orders

1. Select a **DTS order type** from the [stop order drop down](#). The order type icon will change: . The icon is a red octagon with a white border and the letters 'DT' in white.
2. Place your order. A confirmation will appear.
3. Select the DOM size threshold.
4. Click **Place Order**.

Entering Trailing Limit Orders

COG offers a suite of Smart Orders that includes trailing limit orders.

Placing these orders requires an enablement from COG and from you in [Smart Order Preferences](#).

A trailing limit order will track the market automatically adjusting its price level position in the exchange's order book.

For a buy order, as the best bid/offer/trade (depending on your settings) moves up, your order will move up with it based on the trailing offset. When the best bid/trade/offer trade moves down, your order will hold. When the best bid/offer/trade matches your order price, the order will execute.

For a sell order, as the best bid/offer/trade moves down, your order will move down with it.

For example, you're trading the E-Mini S&P 500. The market bid is at 1433.00. You place a trailing limit bid at 1432.00, a trailing offset of 100. If the market bid moves up to 1434.50, then your order moves to 1433.50, always keeping a trailing offset of 100 when the bid is moving up. As the bid comes down, your order stays put. So, if the bid comes down to 1434.00, your order stays at 1433.50. If the bid comes down to 1433.50, your order is executed.

The goal is that the bid is at the front of the order queue automatically due to the speed of the gateway managing the order.

To enter trailing limit orders

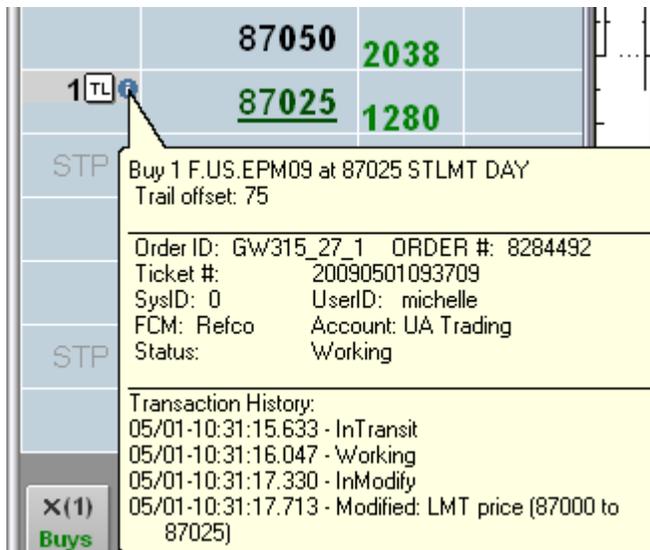
1. Click the **Trailing Order** drop down arrow and select **Trailing Limits**, like this:



Notice the order type indicator and watermarks change:



2. Place your order. It will look like something like this on the DOM:



To modify and cancel trailing limit orders

Modify and cancel trailing limit orders as you would for any orders on the DOM.

To exit trailing limit mode

Click **Trailing Order** drop down arrow and unselect **Trailing Limits**.

Entering Order-Cancels-Order (OCO) Orders

CQG offers a suite of Smart Orders that includes OCO orders.

Placing these orders requires an enablement from CQG and from you in [Smart Order Preferences](#).

An OCO is a multi-part order. If one part of the order is executed, then the all other parts are cancelled.

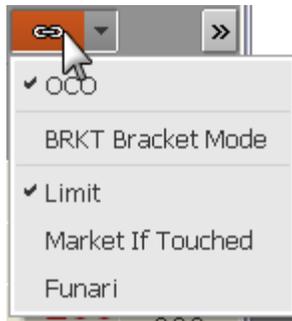
Working OCO orders are uniquely numbered/lettered with a single digit for identification purposes. The single digit is any number from 1-9 and letters of the alphabet except A, L, and S. If you have more than 32 working OCO chains, orders 33 and above are marked with an asterisk.

Please note that numbers and letters do not indicate the sequence in which orders were placed, as numbers and letters are reused when the order is no longer working.

The number/letter is indicated on the order information icon, the order information popup, and on the Orders and Positions window.

To enter an OCO

1. Click the **Special Orders** arrow and select **OCO** from the menu.
2. Click the button to turn OCOs on (the button turns orange), like this:



You can select OCO or BRKT and Limit or MIT or Funari.

3. Place the first order.
4. Place the second order.
5. Continue to place orders for each part of the OCO chain.
6. Click the **OCO** button. You receive an order confirmation message for each of the orders.

Upon execution of one of the orders, the other order(s) are cancelled automatically.

To learn how to add an order to an existing OCO, see "[To create an OCO if you have only one open order](#)" on page 251.

To learn how to create an OCO from existing orders, see "[To combine existing orders into a single OCO](#)" on page 251.

Entering Market-if-Touched Orders

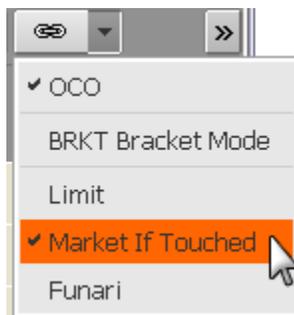
COG offers a suite of Smart Orders that includes market-if-touched orders.

Placing these orders requires an enablement from COG and from you in [Smart Order Preferences](#).

A market-if-touched order becomes a market order when a specified price is reached. The order is executed at the first available price at the time the specified price is reached.

To enter a market-if-touched order

1. Click the **Special Orders** arrow and select **Market If Touched**, like this:



You'll want to ensure that OCO is selected if you do not want to place a bracket order. One or the other must be selected, and OCOs require an additional step to turn on.

Notice that the order type icon and watermarks change:

 A screenshot of a trading interface showing a grid of order types and watermarks. The grid has columns for order type, price, and quantity. The 'Market If Touched' (MIT) order type is highlighted in red.

Order Type	Price	Quantity	Watermark
Buy 1 MKT			
Bid			
	109100		316
	109075		281
STP	109050		263 MIT
	109025		287
	15	109000	412
MIT	666	108975	207 MIT

2. Place the order. If you have confirmations turned on, click OK. It will look like something like this on the DOM:

	27K	◆ 109600		1441	
MIT	29K	● 109575		1498	MIT
	16K	▲ 1 109550		646	
	6847	● 109525	601		
1	3278	● 109500	1284		MIT
	9089	109475	2000		
	14K	109450	2051		
MIT	10K	109425	1832		STP

Entering Funari Orders

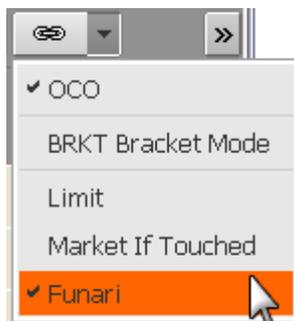
COG offers a suite of Smart Orders that includes Funari orders.

Placing these orders requires an enablement from COG and from you in [Smart Order Preferences](#).

For this order type, any unfilled order quantity is executed as a market order at either the morning close or afternoon close.

To enter a Funari order

1. Click the **Special Orders** arrow and select **Funari**, like this:



You'll want to ensure that OCO is selected if you do not want to place a bracket order. One or the other must be selected, and OCOs require an additional step to turn on.

Notice that the order type icon and watermarks change:

Order Type	Price	Quantity	Order Type
	109100	307	
	109075	261	
STP	109050	261	FUNARI
	109025	292	

- Place the order. If you have confirmations turned on, click OK. It will look like something like this on the DOM:

	27K	109600		337	
FUNARI	29K	6	109575	163	FUNARI
	15K		109550	1257	
	5763		109525	1302	
1	3232		109500	1412	STP
	9089		109475	1938	
	14K		109450	2101	

Entering Market Limit Orders

COG offers a suite of Smart Orders that includes market limit orders (SFE-specific).

Placing these orders requires an enablement from COG and from you in [Smart Order Preferences](#).

These orders are filled according to the three best prices available.

Advanced Trading

These features answer the needs of traders who require more advanced trading options, such as the ability to trade based on [net change](#) and [yield](#) and the ability to trade [large quantities](#).

CQG also offers [spread trading](#) and [aggregation trading](#).

Net Change Trading

With COG, you have the ability to trade instruments spreads based on net change. Net change is the difference between today's current price and the settlement price. (To set settlement price preferences: click the **Setup** button, click **System Preferences**, and go to the **Settlement** tab.)

Order duration is limited to DAY, but all order types are supported.

Symbology

By instrument: NC(EP)

By QFormula: NC(Q1)

By spread: NC(EP-ENQ) which equals NC(EP) – NC(ENQ)

By leg: NC(EP) – ENQ

Net change on trading applications

Net change formulas are identified on the tabs. Note the net change quotes on the DOM ladder for each leg.

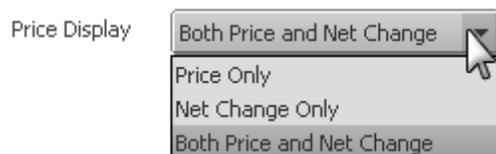
The image displays three screenshots of a trading application's DOM ladder, each showing a different net change formula and its corresponding price changes. The first screenshot shows a formula $0.5 * NC(EP29) - 0.2 * NC(ENQ29)$ with a net change of $\Delta -72$. The second screenshot shows $NC(EP29)$ with a net change of $\Delta -175$ and a price of 11060. The third screenshot shows $NC(ENQ29)$ with a net change of $\Delta -75$ and a price of 1878. Each screenshot includes a control panel with buttons for 'Buy 1 MKT', 'Bid', 'Offer', and 'Sell 1 MKT', and a table of market data with columns for price, quantity, and order type (LMT, STP).

The Fill Report includes a **NC Price** column.

Net change on the Orders and Positions window

You can add net-change-specific columns on the Orders and Positions window. To select those columns:

1. Click the **Setup** button.
2. Click **Orders and Positions Preferences**.
3. On the **Display** window in the **Price Display** field, select **Both Price and Net Change** or **Net Change Only**.



Trading Based on Yield

Trade instruments and spreads based on yield for cash symbols.

When trading yield spreads, the system changes the price of the spread, so that your desired yield is met.

You can trade any order type. Outrights can be traded with any duration. For spreads, only day orders are accepted.

Symbology

By instrument: YIELD(CUS10)

By QFormula: YIELD(Q1)

By spread: YIELD(CUS10-CUS30) which equals YIELD(CUS10)-YIELD(CUS30)

Yield on trading applications

Yield formulas are identified on the tabs. Instead of price in the price column, the difference in yield is displayed. Yields for the legs are displayed in the right-most column of the DOM display. You can change the location of the column in Trading Preferences.

This image shows an example of a yield spread.

Quantity	Price	Yield	Quantity
		-1.127	
		-1.126	
20		-1.125	20
		-1.124	
		-1.123	
20		-1.122	20
		-1.121	
		-1.120	1
20		-1.119	20
		-1.118	
		-1.117	
20	1	-1.116	20
		-1.115	
		-1.114	
20		-1.113	20
		-1.112	
		-1.111	
20		-1.110	20
		-1.109	

The Fill Report includes a **Yield Price** column.

Yield on the Orders and Positions window

You can add yield-specific data to the Orders and Positions window: Yield Limit Price, Yield Avg Fill Price, and Yield Price.

To add **Yield Limit Price** and **Yield Avg Fill Price** columns:

1. Click the **Setup** button.
2. Click **Orders and Positions Preferences**.
3. On the **Display** window in the **Price Display** area, click **Yield**.

Price Display

One or more price display options must be selected.

- Price
- Net Change
- Yield

To add **Yield Price** column:

Click the **Setup** button.

Click **Orders and Positions Preferences**.

On the **Display** window in the **Available Columns and Data** area, click **Yield Price**.

Available Columns and Data

- | | |
|---|---|
| <input checked="" type="checkbox"/> Order Size | <input type="checkbox"/> Place Time |
| <input checked="" type="checkbox"/> Buy/Sell | <input checked="" type="checkbox"/> Order # |
| <input checked="" type="checkbox"/> Symbol | <input type="checkbox"/> Order ID |
| <input checked="" type="checkbox"/> Order Price | <input type="checkbox"/> Unfilled Size |
| <input checked="" type="checkbox"/> NC Order Price | <input type="checkbox"/> Status |
| <input checked="" type="checkbox"/> Yield Order Price | <input type="checkbox"/> Price |
| <input checked="" type="checkbox"/> Order Type | <input checked="" type="checkbox"/> NC Price |
| <input checked="" type="checkbox"/> Limit Price | <input checked="" type="checkbox"/> Yield Price |

Trading Large Quantities

CQG supports large order sizes that are abbreviated using:

- K= thousand
- M = million
- B = billion

You are able to use these new abbreviations when you enter order size on the DOMTrader, Order Ticket, Simple Order Ticket, SnapTrader, and Alerts as well as when you set quantity preferences.

DOMTrader and position quantity is abbreviated to its maximum length of three digits if it is more than 5 digits.

For example:

76,163,344 becomes 76.2M

6,103,344 becomes 6.1M

120,345 becomes 120K

23,345 stays 23,345

Order size, including iceberg display quantity, is abbreviated to its maximum length of four digits.

For example:

76,100,000 becomes 76M

10,000 becomes 10K

123,400 becomes 123K

1000 stays 1000

Any necessary rounding is done according to standard mathematical principles. For example, 12,499 = 12K, 12,500 = 13K, 999,500 = 1M.

Overflow, meaning when the quantity is too large to be displayed, is identified using the plus sign. Values over 2,147,483,647 are represented as "2b+".

The DOMTrader and Order Ticket will display balloons with the full quantity if you hover the cursor over the value.

Invalid quantities, such as 1.234, are in red font.

In addition to your being able to use large numbers and their abbreviations in order entry, CQG uses these abbreviations on the QSS and EQSS, the Orders and Positions window, the Order Ticker, and the chart's Order Book.

Trading Spreads

Please see the [COG Spreader User Guide](#) for details about trading spreads.

Aggregation Trading

Aggregation allows you to place a single order for similar instruments in two or more exchanges and let the system find the market with the best bid or offer.

You can enter aggregated orders on DOMTrader, Order Ticket, Quote SpreadSheet, and Enhanced Quote SpreadSheet using the formula: AGGR(symbol&symbol). For example, AGGR(TYA&ZNE).

Aggregated orders are indicated on the DOMTrader by this icon: 

The account sending an aggregated order must have margin availability as if independent leg orders for the total number of lots were executed. For example: Buy 10AGGR(A&B) would require the account to be approved for Buy 10A and Buy 10B.

Aggregation has two modes: Market Taking (default) and Market Making:

Market Taking Mode: Your order is held on the gateway server until your price becomes available in at least one market; at which time, the gateway server sends an order to the exchange. The configurable parameters for this mode are:

- Trading Distribution
- Partial Fill Control
- Working Threshold
- Order Type

Market Making Mode: Your order is sent immediately to the exchanges based on your trading distribution preferences. The gateway server then manages your orders to get you filled as quickly as possible at your price. The configurable parameters for this mode are:

- Trading Distribution
- Overfill Management

Note: The system works the complete size at one time. If lots cannot be evenly divided by the number of instruments, then the remainder is allocated to the first instrument. For example:

5 AGGR(A&B&C) = 3 A, 1 B, 1 C

6 AGGR(A&B&C) = 2 A, 2 B, 2 C

10 AGGR(A&B&C) = 4 A, 3 B, 3 C

Setting Aggregation Parameters

To set parameters for these modes, go to trading parameters.

If you have not chosen trading parameters on the Define User Formulas window, you can set them from the DOMTrader or Order Ticket.

Calculation parameters, such as tick size and BAT filter, must be selected as part of the QFormula.

To open this window, click the settings button:



There are two primary sets of actions for this window: changing parameters that impact the way your strategy is traded and making changes to the trading parameters window itself.

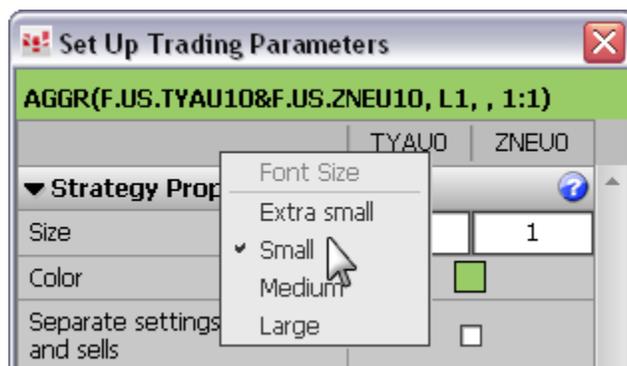
To change numerical parameters

The parameter fields are either buttons, check boxes, or fields that contain numbers. To change those numbers, you can:

- type a new value in the field; or
- click the field and use your mouse wheel to increase and decrease the value.

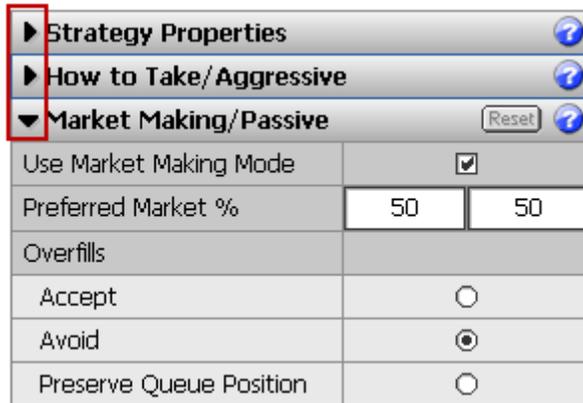
To change the parameter window's font size

1. Right-click anywhere on the window.
2. Click the font size you want: **Extra small**, **Small**, **Medium**, and **Large**.

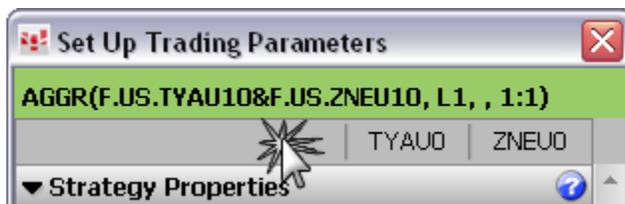


To collapse and expand sections

1. Click the arrows on the left of the section heading to collapse and to expand the sections. **CTRL+click** expands the section and collapses the others.



2. Double-click the top-left empty cell to expand all sections.



To set Strategy properties



Parameter	Description
Size	Indicates the size of each leg.
Color	Click the color button to open a standard color selector.
Separate settings for buy and sell	<p>Creates two windows (indicated by tabs) for how to take and market making parameters, like this:</p>

To set How to Take/Aggressive parameters

Market Taking mode indicates that your order is held on the gateway server until your price becomes available in at least one market; at which time, the gateway server sends an order to the exchange.

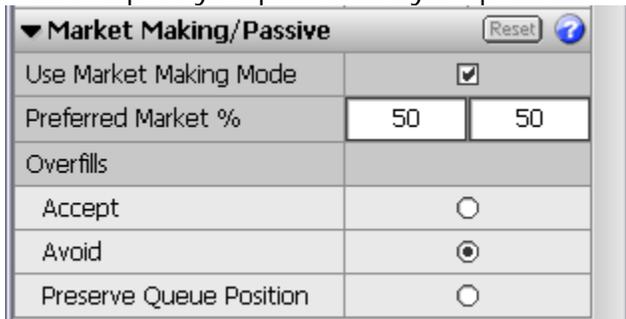
▼ How to Take/Aggressive 		
Preferred Market %	50	50
Partial fills: How long to work a taking order, seconds	30	30
Work Threshold	0	0
Order Type		
LMT	<input checked="" type="radio"/>	<input checked="" type="radio"/>
MKT	<input type="radio"/>	<input type="radio"/>

Parameter	Description
Preferred Market %	<p>Allows you to specify how many lots are placed on each leg provided there is sufficient volume at your target price.</p> <p>In the event that there is NOT sufficient volume at your target price in one or more legs, this preference is ignored, and the gateway server attempts to fill your order at your target price without regard to market preference.</p> <p>The allocations for Market Taking can be different from those set for Market Making.</p> <p>The allocations for Market Taking must equal 100%. The default is 50% – 50%.</p>
Partial fills: how long to work a taking order	<p>Allows you to set how long to work a taking order.</p> <p>This parameter, set independently for each leg, controls the amount of time that the gateway server allows a taking order to work (after exchange acknowledgment) before considering it timed out (and thus canceling it).</p> <p>Default = 0. Zero means that the gateway server never cancels an unfilled taking order.</p>
Work Threshold	<p>This parameter, set independently for each leg, defines a threshold quantity that the gateway server ignores for purposes of determining available quantity on that leg. (e.g. If the best ask is 10 @ 8 and the threshold quantity is 10, then the gateway server treats the best ask as 0 @ 8 and will not place any taking orders on that leg.)</p>

Parameter	Description
Order Type	This parameter, set independently for each leg, controls the order type (LMT v. MKT) that the gateway server uses for any taking order.

To set Market Making/Passive parameters

Market Making mode indicates that your order is sent immediately to the exchanges based on your trading distribution preferences. The gateway server then manages your orders to get you filled as quickly as possible at your price.



▼ Market Making/Passive		Reset	?
Use Market Making Mode	<input checked="" type="checkbox"/>		
Preferred Market %	50	50	
Overfills			
Accept	<input type="radio"/>		
Avoid	<input checked="" type="radio"/>		
Preserve Queue Position	<input type="radio"/>		

Parameter	Description
Use Market Making Mode	Turns on market making mode.
Preferred Market %	Allows you to specify how much of the Aggregation Order is placed on each leg. You can set the percentage allocation up to 100% on each leg. In the event that the target price appears on a leg that is working less than the total order size, the gateway server shifts orders to that leg in accordance with the Overfill Control Preferences. Example: If you place an order to buy 10 AGGR(A&B) and your Trading Distribution is set to 50% - 50%, the gateway server places 5 lots on A and 5 lots on B. The gateway server then works your orders (shifting markets if necessary) as you receive fills. Alternatively, if your Trading Distribution is set to 100% - 100%, the gateway server places 10 lots on A and 10 lots on B and then works your orders (canceling orders as necessary) as you receive fills.
Overfills	The Overfill Control Preferences govern how the gateway server reacts when your target price becomes available on a leg and the leg is working less than the available quantity. Example: If you place an order to buy 10 AGGR(A&B) @ LMT 8 and the best ask on both A and B is greater than 8, assuming the Trading Distribution for A = 80% and B = 20%, the gateway server works Leg 1 (buy 8A @ 8) and Leg 2 (buy 2B @ 8). If the best ask for B moves down to 7 offered @ 8 (the target price), the gateway server

Parameter	Description
	<p>needs to modify Leg 1 from 8 to 3 and place a new order on Leg 2 (buy 5B @ 8) in order to get the 7 available at the target price.</p> <p>Accept: In this mode, the gateway server places the second order on Leg 2 and only then attempts to reduce the quantity on Leg 1.</p> <p>Avoid: In this mode, the gateway server does not place the second order on Leg 2 until it has received an acknowledgement of the reduction (by cancel or modify) of the Leg 1 order.</p> <p>Preserve Queue Position: In this mode, the gateway server places the second order on Leg 2 and then reduces the quantity on Leg 1 only when the Leg 2 orders have been filled.</p>

Managing Orders with DOMTrader and the Order Ticket

You can manage orders directly on the DOMTrader and Order Ticket or on the [Orders and Positions](#) window. You can also use your keyboard. See Keyboard Keys for a list of [order management shortcut keys](#).

Identifying Order Type Icons

These icons help you easily confirm the type selected.

Type	Icon
DOM-Triggered Stop	
DOM-Triggered Stop Limit	
DOM-Triggered Trailing Stop	
DOM-Triggered Trailing Stop Limit	
Funari	
Iceberg	
Limit	
Market	
Market-If-Touched	
Stop	
Stop Limit	
Trailing Limit	
Trailing Stop	
Trailing Stop Limit	

Viewing Order Status

Working orders are displayed on the DOMTrader and on the Order Ticket DOM area like this:

STP	87075		5
	87050		
	87025		
1	87000		LMT
	86975	1044	
	86950	1055	
STP	86925	936	LMT
	86900	747	
	25 86875	334	
100	86850	958	LMT

50

Sell 50 F.US.EP.Z10 at 118275 ICBG 5 DAY

Order ID: SC36GW101_27 ORDER #: 327240011
 Ticket #: 7160957024
 SysID: 0 UserID: stas
 FCM: Wick Account: REFCODGW2
 Status: Working

Transaction History:
 11/23-10:12:33.597 - InTransit
 11/23-10:12:33.687 - Working

Icon	Type	Description
	Stacked	Stacked orders are multiple working orders (possibly of different types) placed on the same side of the market for the same price. Double-click the stacked order icon to see the details for individual orders. You can also use the keyboard.

Icon	Type	Description
	Filled	An order changes its status to filled after the CQG Server receives notification from the exchange that the order has been filled. A filled order is visually represented by the quantity and a checkmark.
	Partially Filled	A partially filled order is a working order with only some of the requested quantity filled. This is visually represented by black quantity text for the working orders and gray text in parenthesis for the filled quantity.
	In Transit	An order in transit has not been acknowledged yet by the exchange. The order type icon is grayed out during this time.

Fill Report

When an order is filled, the **Fill Report** window opens. You can also click the **Fill Report** button on the application toolbar or click the **Trade** button on the main toolbar.

This image shows the Fill Report in its abbreviated format.

Click **Show More** to display working orders, account, user, order number, Q Number, Q Name, formula, and comments. You can also add a **Duplicate** button to place an identical order to the one that was filled.

Fill Time	Symbol	Bought	Sold	Price	<input type="checkbox"/>
15:08:52 12-21-2010	EPH1	5		125025	<input type="checkbox"/>
15:06:08 12-21-2010	EPH1	1		125050	<input type="checkbox"/>
15:06:08 12-21-2010	ENQH1		1	223550	<input type="checkbox"/>
15:06:08 12-21-2010	SPREAD(0.5*EP-0.2*ENQ)	1		17815	<input type="checkbox"/>
15:07:49 12-21-2010	TYAH1	2		120110	<input type="checkbox"/>
15:07:49 12-21-2010	FVAH1		3	117202	<input type="checkbox"/>
15:07:49 12-21-2010	SPREAD(1.5*FVA-TYA,,,3:2)		1	56034	<input type="checkbox"/>
15:10:20 12-21-2010	FVAH1	5		117205	<input type="checkbox"/>
15:10:20 12-21-2010	USAH1		2	121100	<input type="checkbox"/>
15:10:20 12-21-2010	SPREAD(2.5*FVA-USA,,,5:2)	1		172252	<input type="checkbox"/>

Alert on every fill [Configure](#)

Outright Fills/Lots:	4/13	3/6	7/19
Strategy Fills/Lots:	2/2	1/1	3/3

Close

Click the **Position Details** button to open the Orders and Positions window.

Click **Configure** to open Notifications preferences.

For spreads, fills are color-coded according to the color of each spread.

If you do not want to see this window for future fills, clear the **Alert on every fill** check box.

Modifying and Cancelling Orders on the Order Ticket

You can change order quantity and price and cancel orders directly on the Order Ticket, on the DOM area and Orders and Position area.

When you modify orders on the DOM area, the changes are displayed on the Orders and Positions area. If you begin to modify an order on the DOM area, but then switch from the Working window in the Orders and Positions area, the order modifications are cancelled.

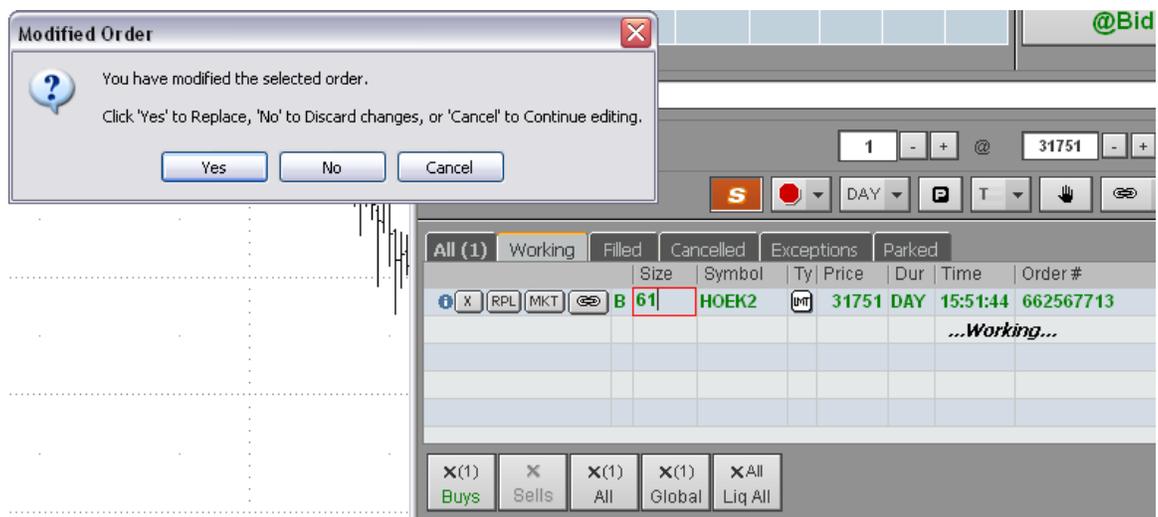
To change order quantity (Order Ticket)

On the DOM area

1. Click the order in the buy or sell column.
2. Type a new quantity value or click a quantity button.
3. **Enter**.

On the Orders and Positions area

1. Click the order on the DOM area. The order is automatically displayed on the Working window in the Orders and Positions area.
2. Click the **Size** field on the Orders and Positions area. A red outline appears, letting you know that field is in focus.
3. Use your mouse wheel to increase or decrease the quantity.
4. Once you've reached the desired quantity, click. If you have notifications turned on, you'll receive a confirmation to modify the order.



To change order price (Order Ticket)

You can change the order price quickly by clicking and dragging the order on the DOM ladder to a different price. Also:

On the DOM area

1. Click the order in the **Buy** or **Sell** column. The order is displayed in the Orders and Positions area at the bottom of the Order Ticket.
2. Use the up and down arrows on your keyboard to move the order up and down the price ladder. Notice that the price changes in the Orders and Positions area.
3. When you have reached the desired price, **Enter**.

On the Orders and Positions area

1. Click the **Price** field.
2. Type a new value or use your mouse wheel to increase or decrease the quantity.
3. **Enter**. If you have notifications turned on, you'll receive a confirmation to modify the order.

To cancel orders (Order Ticket)

You can cancel orders on the Order Ticket on both the DOM area and the Orders and Positions area:

- Click and drag the order off the DOM ladder.
- Right-click the order or stack of orders on the DOM area;
- Click the order on the DOM area and press **Delete** on your keyboard; or
- Click the **X** button on the Orders and Positions area.

You can also use the cancel buttons on the Order Ticket itself to cancel buy orders, sell orders, or all orders.

Modifying and Cancelling Orders on the DOMTrader

You can change order quantity and price and cancel orders directly on DOMTrader.

To change the quantity (DOMTrader)

1. Click the order in the **Buy** or **Sell** column.
2. Type a new quantity value or click a quantity button.
3. **ENTER**.

To change the price (DOMTrader)

1. Click the order in the **Buy** or **Sell** column.
2. Drag and drop it at a new price.
3. If prompted to confirm, click **OK** to apply the change.

To cancel orders (DOMTrader)

There are several ways to cancel orders on DOMTrader:

- Right-click the working order or stack of working orders;
- Use the cancel buttons on the DOMTrader window to cancel buy orders, sell orders, or all orders; or
- Drag and drop
 1. Select the working order cell.
 2. Drag the order cell off the window. The order will be displayed like this:

86900		●	86950	1108	
	10	UNIT	●	86925	675
					ST
			86900	958	
86800					

3. Drop the order.

Suspending Working Orders from a Trading Application

You can suspend working orders of all types, except trailing, for both outright and synthetic strategies. This feature is especially helpful for those traders who need to leave their workstations but don't want orders to continue to work in their absence.

It is not recommended to park or activate orders that are part of an incomplete strategy order. If you park a trailing or bracket, you are warned that the order will be cancelled and not parked.

To park orders from the Order Ticket and Order Desk, click the newly added **Park All** button on the toolbar. Click **Activate All** to work those orders.



See also: "[Suspending Working Orders on the Orders and Positions Window](#)" on page 255.

Please [contact COG Customer Support](#) to be enabled for this feature.

Orders and Positions

The Orders and Positions window allows you to set up accounts and keep track of your open and filled orders.

It is divided into four panes:

- **Account**: This pane on the left of the window displays a hierarchical view of your accounts by date, symbol, or trade system.
- **Filter**: This pane on the top of the window provides a way for you to filter orders and positions data.
- **Orders**: This set of tabbed windows provides order status, order details, fill details, and profit and loss. You can also cancel, cancel/replace, and place orders from this tab.
- **Summary**: The three tabbed windows in this pane display summaries of information about the selected account, including open positions and margin requirements.

To resize the panes, drag the **Accounts** pane border and the **Orders** pane border. Click and drag the **Accounts** pane to move it to the right side of the screen. Click and drag the **Summary** pane to move it to the top of the screen.

You can hide the **Accounts**, **Filter**, or **Summary** pane in [preferences](#).

To open Orders and Positions, click the **OrdPos** button on the toolbar. If the button is not displayed, click the **More** button, and then click **Orders and Positions**. You can also click the **Trade** button and then click **Orders and Positions**.

Orders and Positions Toolbar

The Orders and Positions toolbar includes these buttons:

Logon button

Opens the Order Routing Logon window.

To read more about logging on to trade, see "[Logging On](#)" on page 113.

Logoff button

Disconnects you from order routing.

To read more about logging off, see "[Logging Off](#)" on page 113.

Delete FCM button

This button is used to temporarily remove an FCM from view. The FCM will appear the next time you log in.

EditAcct button

This button opens the Account Setup window. Please see "[Configuring Account Settings](#)" on page 232 for more information.

Delete Account button

Deletes a local account permanently, and deletes a non-local account temporarily.

The next time you log on to trade routing, the deleted account is restored to your system.

You must call Customer Support to delete non-local accounts permanently. Once Customer Support has deleted an account, you can either keep the account record in the Orders and Positions view for archival purposes or delete it. Even after an account has been deleted by Customer Support and removed from your Orders and Positions view, you can reactivate it by calling Customer Support. Once the account is reactivated, you are able to enter orders and keep track of your positions using that account.

X Global button

Click this button to cancel all working orders.

Right-click this button to open a window that allows you to select the account, side, and symbol to cancel.

Activate All

Click this button to return suspended orders to working.

Park All

Click this button to suspend all working orders. Right-click this button to select which orders to suspend: all, buys, sells, all symbols, a particular symbol, all accounts, a particular account.

Orders and Positions Components

The Orders and Positions window is made up of four panes: [account](#), [filter](#), [orders](#), and [summary](#).

The Orders pane has five tabbed windows: Orders, Purchases & Sales, Confirmations, Strategy Manager, and Summary. The Orders tabbed window itself has tabbed windows: Working, Filled, Cancelled, Exceptions, Parked, and All.

The summary pane has three tabbed windows: [Account Summary](#), [Open Position Summary](#), and [Margin Requirements](#).

Orders and Positions: GW OTE: 5,075.00

by Date | by Symbol | by Trade System

Account: SIMasfawSIM (PSasfawSIM) FCM: CQG Sim

Symbol: -all- From: Current Day Apply

Trade System: -all- To: Current Day Current

Filter Panel

Orders | Purchase & Sales | Confirmations | Strategy Manager | Summary

Working | Filled | Cancelled | Exceptions | Parked | All

St	O	Size	B/S	Symbol	Ty	Limit Price	Duration	Avg Fill Price	Place Time
+	✓	1	Buy	EPM0			DAY	115625	14:59:17 022123390

Orders Panel

Account Summary | Open Position Summary | Margin Requirements

	USD	Total(USD)	
Account Balance:	199,999,999,999,400.00	199,999,999,999,400.00	
Profit/Loss:	0.00	0.00	0.00
Open Trade Equity for Futures:	5,075.00	5,075.00	11,362.50
OTE+P.L.:	5,075.00	5,075.00	11,362.50
Unrealized Profit/Loss for Options:	0.00	0.00	0.00
Collateral on Deposit:	0.00	0.00	0.00
Net Liquidity Value:	200,000,000,004,500.00	200,000,000,004,500.00	200,000,000,004,500.00
Market Value of Options:	0.00	0.00	0.00
Cash Excess:	0.00	0.00	0.00

Summary panel

Account panel

If you are not logged on to trade, then the Orders and Position window title bar indicates "offline." The information in the orders and summary panes is displayed in gray. That is an indication to you that the information in those windows may not be current.

Account Pane

The **Account** pane displays a hierarchy of FCM, accounts associated with that FCM, and the orders associated with that account. On this pane, you are able manage FCMs and accounts.

You can view FCMs and accounts by date, by symbol, and by trade system. To change the view, click one of the tabs at the top of the pane. By date presents the information according to FCM, account, year, month, week, and day. By symbol presents the information according to FCM, account, and symbol. By trade system presents the information according to FCM, account, and trade system.



Click and drag the **Account** pane to move it to the right side of the screen.

Icons

FCM icons identify the type of FCM:

-  Default
-  Futures and Options
-  Fixed Income Trading
-  Forex
-  Local FCM
-  Demo
-  Simulator

Day icons identify these statuses:

-  Current day, symbol, trade system
-  Expiring account symbol
-  Statement has corrupt data
-  Statement is downloading from server
-  Reconciliation for statement is complete, no discrepancies have been found
-  Reconciliation for statement is complete, some discrepancies have been found
-  Statement archived and has no data associated with it

Account icons identify these states:

	Account with no expired contract, no trades, net status OK
	Account with no expired contract, with trades, net status OK
	Account with no expired contract, no trades, net status OK
	Account with no expired contract, with trades, net status OK
	Account currently requested or calculating
	Incorrect account
	Account with expired contract, no trades, net status OK
	Account with expired contract, with trades, net status OK
	Account with expired contract, no trades, net status OK
	Account with expired contract, with trades, net status OK
	Account with no expired contract, no trades, <u>no</u> net
	Account with no expired contract, with trades, no net
	Account with no expired contract, no trades, <u>no</u> net
	Account with no expired contract, with trades, no net
	Account with expired contract, no trades, no net
	Account with expired contract, with trades, no net
	Account with expired contract, no trades, no net
	Account with expired contract, with trades, no net

Filter Pane

The Filter pane allows you to filter information by account, symbol, trade system, FCM, and date.

The Filter Pane interface includes the following fields:

- Account: UA Trading (PS070410)
- FCM: All PLs Simulator
- Symbol: EDAU5
- Trade System: -all-
- From: 08/13/2012
- To: 08/17/2012
- Buttons: Apply, Current

The Account filter works like the Account Picker:

The Account Picker dialog box displays a list of accounts with the following columns:

Number	Name	Nickname	Comment
-all-			
0707	UA Test 2	UA	
070707	UA Trading	UAT	
070707	UA Trading	UAT	UA Capital
070707	UA Trading	UAT	Jane Trader
070707	UA Trading	UAT	UA Assets
070707	UA Trading	UAT	UA Wealth Management

Buttons: OK, Cancel

Changing the account changes it on associated trading windows (grouped and linked child). You can change the symbol too if a particular symbol is selected in the filter panel.

The **Orders** and **Summary** panes display the data according to your selections.

When the filter pane is hidden, a filter menu appears:

The screenshot shows a trading window with a table of orders and a filter menu. The table has the following columns:

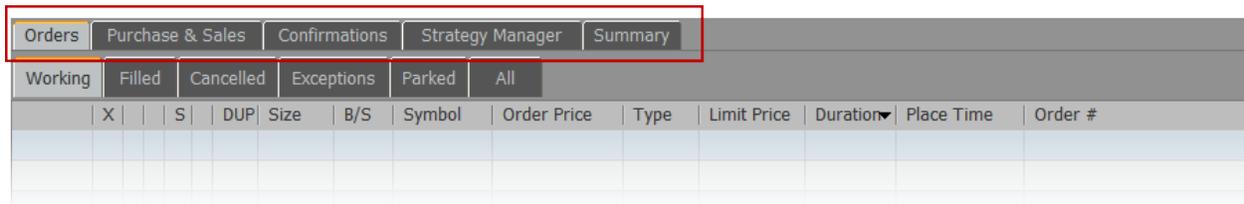
Symbol	WKGB	WKGS	FILLB	FILLS	Avg Buy	Avg Sell	P&L+OTE	inc
CLEQ2			10	16	8576	8576	(140.0	
CLEM3				9		8891	(2,070.0	
CLEN3			18		8908		(4,500.0	
EDAUS							1,750.	
ENQU2		20		5		253975	(150.0	
EPU2							2,000.	
FVAU2								
HOEQ2			17		27660		357.	
TYAU2			15	50	134215	134210	(171.8	
USAU2			35		151210		(10,468.7	
UA_EP_ENQ	20		5		15705		(87.5	
UA_FOB				5		159177	(117.1	
UA_HOE_CLE			3		3040		33.	
UA_Crude_Butterfly				1		-350	(760.00)	1 -10, 20, -10

The filter menu is open, showing a list of symbols: CLEQ2, DBU2, ENQU2, EPU2, HOEQ2, TYAU2, USAU2, CLEM3, CLEN3, EDAUS, UA_EP_ENQ, UA_FOB, UA_HOE_CLE, UA_Crude_Butterfly.

Orders Pane

The Orders pane includes five tabs:

- [Orders](#)
- [Purchases & Sales](#)
- [Confirmations](#)
- [Strategy Manager](#)
- [Summary](#)



The screenshot shows the Orders Pane interface. At the top, there are five tabs: Orders, Purchase & Sales, Confirmations, Strategy Manager, and Summary. The 'Orders' tab is selected and highlighted with a red border. Below the tabs, there are six sub-tabs: Working, Filled, Cancelled, Exceptions, Parked, and All. Below these sub-tabs is a table with the following columns: X, S, DUP, Size, B/S, Symbol, Order Price, Type, Limit Price, Duration, Place Time, and Order #. The table is currently empty.

X	S	DUP	Size	B/S	Symbol	Order Price	Type	Limit Price	Duration	Place Time	Order #

Each of these tabbed windows is explained in this section.

Orders window

Orders														
Purchase & Sales														
Confirmations														
Strategy Manager														
Summary														
Working														
Filled (16)														
Cancelled														
Exceptions														
Parked														
All (16)														
	X	RPL	MKT	OC	DUP	Symbol	B/S	Size	Filled	Workin	Order Pric	Type	Duratio	Type/Dur
	X	RPL	MKT		DUP	TYAH2	Sell	5	0	5	130145		DAY	SDSTL / DAY
	X	RPL	MKT		DUP	TYAH2	Buy	5	0	5	130205		DAY	SDSTP / DAY
	X	RPL	MKT		DUP	TYAH2	Buy	1	0	1	130190		DAY	STSTP / DAY
	X	RPL	MKT		DUP	TYAH2	Buy	100	0	100	130150		DAY	ICBG / DAY
	X	RPL	MKT		DUP	TYAH2	Sell	10	0	10	130205		OC	LMT / OC
	X	RPL				ENQH2	Sell	10	0	10	243500		DAY	LMT / DAY

The Orders window displays order information on these six tabbed windows:

- [Working](#)
- [Filled](#)
- [Cancelled](#)
- [Exceptions](#)
- [Parked](#)
- [All](#)

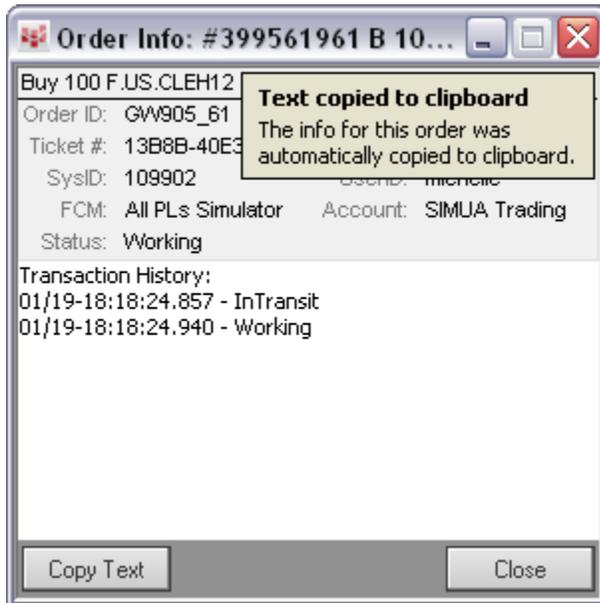
Bold text items on each window indicate actions that were completed since the last time you viewed the data in the selected tab. The number of these new items is reflected in parentheses on the appropriate tab. See the **Filled** and **All** tabs in the image.

To choose the columns to display on this pane and the order in which they are displayed, click the **Setup** button and then click **Orders and Positions Preferences**. You can also choose the order management buttons you wish to display.

The color of the buys and sells is dictated by [Trading Preferences](#).

Several order actions can be taken on this window, including cancel, replace, switch to market, park, and create an OCO.

Hover your mouse over the information icon (i) to see order details. Double click the icon to copy the order information to the clipboard and open an independent window with those details. All information in this window is tab-delimited.



Working window

Working	Filled (16)					Cancelled	Exceptions	Parked	All (16)						
	X	RPL	MKT	OC	DUP	Symbol	B/S	Size	Filled	Workin	Order Pric	Type	Duratio	Type/Dur	
i	X	RPL	MKT	OC	DUP	TYAH2	Sell	5	0	5	130145	D	DAY	SDSTL / DAY	
i	X	RPL	MKT	OC	DUP	TYAH2	Buy	5	0	5	130205	D	DAY	SDSTP / DAY	
i	X	RPL	MKT	OC	DUP	TYAH2	Buy	1	0	1	130190	T	DAY	STSTP / DAY	
i	X	RPL	MKT	OC	DUP	TYAH2	Buy	100	0	100	130150	D	DAY	ICBG / DAY	
i	X	RPL	MKT	OC	DUP	TYAH2	Sell	10	0	10	130205	LMT	OC	LMT / OC	
i	X	RPL				ENQH2	Sell	10	0	10	243500	LMT	DAY	LMT / DAY	

The Working window shows all of the orders that have been entered and have not been either fully filled or cancelled.

Hover your mouse over the **Working** tab to display a summary tooltip:

	X	RPL	MKT	OC	DUP	Symbol	B/S	Size	Filled	Workin	Order Pric
	X	RPL	MKT		DUP	TYAH2	Sell	5	0	5	130145
	X	RPL	MKT		DUP	TYAH2	Buy	5	0	5	130205
	X	RPL	MKT		DUP	TYAH2	Buy	1	0	1	130185
	X	RPL	MKT		DUP	TYAH2	Buy	100	0	100	130150
	X	RPL	MKT		DUP	TYAH2	Sell	10	0	10	130205
								10	0	10	243575

Buy 100 F.US.TYAH12 at 130150 ICBG 10 DAY

Order ID: GW920_42 ORDER #: 399602076
 Ticket #: 93-40E3FC164795CEB2
 SysID: 109902 UserID: michelle
 FCM: All PLs Simulator Account: SIMUA Trading
 Status: Working

Transaction History:
 01/20-10:42:35.540 - InTransit
 01/20-10:42:35.610 - Working

[OCO orders](#) are numbered/lettered:

	X	RPL	MKT	Size	B/S	Symbol	Order Price	T	Limit Price	Duration	Place Time	Order #
	X	RPL	MKT	1	Sell	CLEV2	9690			DAY	10:32:59	OCO #E
	X	RPL	MKT	1	Buy	CLEV2	9671			DAY	10:32:59	OCO #E
	X	RPL	MKT	1	Buy	CLEV2	9670			DAY	10:32:50	OCO #
	X	RPL	MKT	1	Sell	CLEV2	9691			DAY	10:32:50	OCO #
	X	RPL	MKT	1	Sell	CLEV2	9703			DAY	10:32:30	OCO #C
	X	RPL	MKT	1	Buy	CLEV2	9659			DAY	10:32:30	OCO #C
	X	RPL	MKT	1	Buy	CLEV2	9668			DAY	10:32:14	OCO #B
	X	RPL	MKT	1	Sell	CLEV2	9692			DAY	10:32:14	OCO #B
	X	RPL	MKT	1	Buy	CLEV2	9667			DAY	10:32:07	OCO #9
	X	RPL	MKT	1	Sell	CLEV2	9694			DAY	10:32:07	OCO #9

For details about managing your orders on this window, see "[Modifying and Canceling Orders](#)" on page 250.

Filled window

Working		Filled	Cancelled	Exceptions	Parked	All (16)	
	DUP	Size	Filled	Symbol	Typ	Avg Fill Price	
	DUP	1	1	TYAH2	TL	130175	
	DUP	100	100	TYAH2		130175	
		DUP	20	20	HOEG2	UMT	29933
		DUP	5	5	CLEH2	UMT	9819
		DUP	100	100	CLEH2		10058
		DUP	100	100	CLEH2		10057
		DUP	20	20	CLEH2	UMT	10057
		DUP	10	10	CLEH2		10059
	DUP	1	1	CLEH2		10059	

The Filled window shows all filled orders, including partial fills. Orders remain on the Filled tab until the start of trading the following day. Working GTC orders remain displayed until the contract expires.

The **Size** column indicates both total order size and filled size, allowing you to remove the **Filled** and **Working** columns if you choose. In this image, the total order size is 100 and the filled size is 7.

Size	Filled	Work
100[7]	7	93

Hover your mouse over the **Filled** tab to display a summary tooltip.

Cancelled window

Working		Filled	Cancelled	Exceptions	Parked	All (16)				
	M	DUP	Size	B/S	Symbol	Order Pri	Type	Durat	Place Time	Order #
		DUP	50	Buy	USAH2	142110	UMT	FOK	10:41:18	399642092
		DUP	5	Buy	ENQH2	242725	UMT	FAK	10:41:03	399622095
		DUP	10	Sell	USAH2	142210	UMT	OO	10:41:40	399502078

This window shows all orders that have been cancelled.

Exceptions window

Working	Filled	Cancelled	Exceptions	Parked	All (16)				
	DUP	Size	B/S	Symbol	Order Pric	Type	Dura	Place Time	Order #
	<input type="checkbox"/> DUP	10	Sell	USAH2	142210	<input type="checkbox"/> LMT	OO	10:41:40	399502078

The Exceptions window lists orders that were rejected by the FCM, the CQG Order Execution system, or the exchange. This might happen for several reasons including:

- A bad symbol. For example, a symbol that might be valid within CQG but is not valid for the indicated exchange or for the indicated account.
- An order type not supported by the indicated exchange.
- A limit price that is not favorable (a buy above the market or a sell below the market) by the time it reaches the exchange.

Parked window

Working	Filled (1)	Cancelled	Exceptions	Parked	All (1)								
	X	ACT	DUP	Size	B/S	Symbol	Order Price	Type	Duration	Place Time	Order #	Park Until	Time till ACT
	<input type="checkbox"/> X	<input type="checkbox"/> ACT	<input type="checkbox"/> DUP	20	Buy	TYAU2	131255	<input type="checkbox"/> LMT	DAY	11:16:12	414632104	11:46	:04
	<input type="checkbox"/> X	<input type="checkbox"/> ACT	<input type="checkbox"/> DUP	10	Buy	DDM2	64505	<input type="checkbox"/> LMT	DAY	11:29:15	414617113	11:46	:04

The Parked window lists the orders that have been placed but are suspended. These orders return to their working state when they are activated.

To activate an individual order, click the **ACT** button on the order. You can also activate orders in groups: buys, sells, and all orders by clicking the **Activate** buttons at the bottom of the window.

Some orders may have been suspended for a particular amount of time. Those orders are automatically activated. The **Park Until** and **Time till ACT** columns provide details about when these orders will begin working again.

See also: "[Suspending Working Orders on the Orders and Positions Window](#)" on page 255.

All window

		Working	Filled	Cancelled	Exceptions	Parked	All							
	Stat	OC	DUP	Size	B/S	Symbol	Type	Limit Pric	Duration	Avg Fill Pric	Place Time	Order #	Fill Time	
	ACT		DUP	20	Buy	EPH2	INT		DAY		10:44:39	399632050		
	MKT	SE	DUP	5	Sell	TYAH2	D	130120	DAY		10:44:01	399592031		
	MKT	SE	DUP	5	Buy	TYAH2	D		DAY		10:43:41	399542081		
	✓		DUP	1	Buy	TYAH2	TL		DAY	130175	10:43:03	399602077	10:43:03	
	MKT	SE	DUP	1	Buy	TYAH2	T		DAY		10:42:53	399632049		
	MKT	SE	DUP	100	Buy	TYAH2			DAY		10:42:35	399602076		
	✓		DUP	100	Buy	TYAH2			DAY	130175	10:42:27	399582089	10:42:27	
	MKT	SE	DUP	10	Sell	TYAH2	INT		OC		10:42:08	399632048		
	✗		DUP	10	Sell	USAH2	INT		OO		10:41:40	399502078		
	✗		DUP	50	Buy	USAH2	INT		FOK		10:41:18	399642092		
	✗		DUP	5	Buy	ENQH2	INT		FAK		10:41:03	399622095		
+	✓		DUP	20	Buy	HOEG2	INT		01/27	<u>29933</u>	10:40:44	399512042	10:45:11	
+	✓		DUP	5	Buy	CLEH2	INT		GTC	<u>9819</u>	10:40:22	399532052	10:45:11	
		SE		10	Sell	ENQH2	INT		DAY		10:38:23	399652044		
-	✓		DUP	100	Buy	CLEH2			DAY	<u>10058</u>	19-18:18:24	399561961	19-18:21:32	
	✓		✓	83						10058				
	✓		✓	1						10058				
	✓		✓	1						10058				
	✓		✓	1						10058				
	✓		✓	2						10058				
	✓		✓	1						10058				
	✓		✓	2						10058				
	✓		✓	3						10058				
	✓		✓	2						10058				
	✓		✓	2						10058				
	✓		✓	2						10058				
+	✓		DUP	100	Buy	CLEH2			DAY	<u>10057</u>	19-18:13:56	399571962	19-18:15:56	
+	✓		DUP	20	Buy	CLEH2	INT		DAY	<u>10057</u>	19-18:13:36	399551962	19-18:15:56	
+	✓		DUP	10	Buy	CLEH2			DAY	<u>10059</u>	19-18:13:32	399581963	19-18:13:36	
	✓		DUP	1	Buy	CLEH2			DAY	10059	19-18:13:26	399501962	19-18:13:27	

The All window lists all working, filled, cancelled, exceptions, and parked orders.

Purchase & Sales window

Orders								Purchase & Sales								Confirmations								Strategy Manager								Summary							
Date		Symbol		Long		Short		Price		Currency		Profit/Loss																											
+		CLEG2		6		6				USD		11,760.00																											
		Commissions:						0.00		USD																													
+		CLEH2		6		6				USD		12,120.00																											
		Commissions:						0.00		USD																													
-		EPH2		15		15				USD		825.00																											
		01/20/12		EPH2		1		1		130625		USD																											
		01/20/12		EPH2		1		1		130500		USD		62.50																									
		01/20/12		EPH2		9		9		130600		USD																											
		01/20/12		EPH2		9		9		130500		USD		450.00																									
		01/20/12		EPH2		1		1		130600		USD																											
		01/20/12		EPH2		1		1		130475		USD		62.50																									
		01/20/12		EPH2		1		1		130600		USD																											
		01/20/12		EPH2		1		1		130475		USD		62.50																									
		01/20/12		EPH2		1		1		130600		USD																											
		01/20/12		EPH2		1		1		130475		USD		62.50																									
		01/20/12		EPH2		1		1		130600		USD																											
		01/20/12		EPH2		1		1		130475		USD		62.50																									
		01/20/12		EPH2		1		1		130600		USD																											
		01/20/12		EPH2		1		1		130475		USD		62.50																									
		Commissions:								0.00		USD																											
-		HOEG2		4		4				USD		453.60																											
		01/20/12		HOEG2		1		1		29960		USD																											
		01/20/12		HOEG2		1		1		29933		USD		113.40																									
		01/20/12		HOEG2		1		1		29960		USD																											
		01/20/12		HOEG2		1		1		29933		USD		113.40																									
		01/20/12		HOEG2		1		1		29960		USD																											
		01/20/12		HOEG2		1		1		29933		USD		113.40																									
		01/20/12		HOEG2		1		1		29960		USD																											
		01/20/12		HOEG2		1		1		29933		USD		113.40																									
		Commissions:								0.00		USD																											

The Purchase & Sales window shows profit or loss for a completed trade, i.e. a trade for which both sides (purchase and sale) of the transaction have been completed.

The window shows the following for each of the trades for the account, time frame, symbol and trade system selected in the Summary pane: Date, Symbol, Long, Short, Price, Currency, and Profit/Loss.

In addition, a list of transactions accomplished with the CASHADJ button is listed in this tab.

Confirmations window

Orders	Purchase & Sales	Confirmations	Strategy Manager	Summary					
Date	Trade Time	Symbol	Long	Short	Price	Currency	Commission	Trade ID	
		CLEG2				USD	0.00		
+		CLEG2		6	9843	USD	0.00		
		CLEH2	236		10052	USD	0.00		
+		CLEH2		6	9857	USD	0.00		
		EPH2	15		130492	USD	0.00		
+		EPH2		15	130602	USD	0.00		
		HOEG2	20		29933	USD	0.00		
+		HOEG2		4	29960	USD	0.00		
		TYAH2	201		130162	USD	0.00		
-		TYAH2				USD	0.00		
	01/20/12	10:42:27	TYAH2	100	130175	USD	0.00	4201299577	
	01/20/12	10:43:03	TYAH2	1	130175	USD	0.00	4201299578	
	01/20/12	10:52:31	TYAH2	7	130150	USD	0.00	4201299595	
	01/20/12	10:52:31	TYAH2	4	130150	USD	0.00	4201299596	
	01/20/12	10:52:31	TYAH2	25	130150	USD	0.00	4201299597	
	01/20/12	10:52:31	TYAH2	39	130150	USD	0.00	4201299598	
	01/20/12	10:52:31	TYAH2	4	130150	USD	0.00	4201299599	
	01/20/12	10:52:31	TYAH2	4	130150	USD	0.00	4201299600	
	01/20/12	10:52:31	TYAH2	2	130150	USD	0.00	4201299601	
	01/20/12	10:52:31	TYAH2	2	130150	USD	0.00	4201299602	
	01/20/12	10:52:31	TYAH2	4	130150	USD	0.00	4201299603	
	01/20/12	10:52:31	TYAH2	1	130150	USD	0.00	4201299604	
	01/20/12	10:52:31	TYAH2	8	130150	USD	0.00	4201299605	

The Confirmations window shows filled orders. It differs from the Purchase & Sales window in that you see only your side of the trade, and you are able to see it before the transaction has been completed. The Confirmations window also shows commissions for manually filled orders.

See also: [To edit a manual fill](#)

Strategy Manager window

The Strategy Manager window displays spread orders. The Strategy Manager has standard tabs for [working](#), [filled](#), [cancelled](#), [excepted](#), [parked](#), and [all](#) orders and an additional tab, **Incomplete**, for incomplete orders.

The **Incomplete** tab blinks when an order has been added to that window. Also, if you have the Orders and Positions window open, focus moves to that window when an incomplete order is added. You can set **Notifications** preferences, so that a sound is made when an order becomes incomplete.

Summary window

Orders	Purchase & Sales	Confirmations	Strategy Manager	Summary	Filter				
Symbol	WKGB	WKGS	FILLB	FILLS	Avg Buy	Avg Sell	P&L+OTE/MV	Pos.	CP
CLEQ2			10	16	8576	8576	220.00	6	-10
CLEM3				9		8891	(2,070.00)	9	-10
CLEN3			18		8908		(4,500.00)	18	20
EDAU5							1,750.00	70	70
ENQU2		20		5		253975	(25.00)	5	-10
EPU2							1,500.00	40	45
FVAU2									-25
HOEQ2			17		27660		0.00	17	20
TYAU2			15	50	134215	134210	(718.75)	35	-35
USAU2			35		151210		(10,000.00)	15	25
UA_EP_ENQ	20		5		15705		(25.00)	5	45, -10
UA_FOB				5		159177	195.31	5	-25, 25
UA_HOE_CLE			3		3040		150.00	3	20, -10
UA_Crude_Butterfly				1		-350	(700.00)	1	-10, 20, -10
∨ Total	20	20	103	86			(14,223.44)	OPEN	

The Summary window provides brokers an overview of the state of orders for each account.

You choose which columns to display. For a list of columns and their descriptions, see [Choose columns to display](#) in Orders and Positions display preferences.

Use the filter menu to hide working orders and display only filled orders.

Summary Pane

You have a choice of three summary views: [account](#), [open position](#), and [margin](#).

Click and drag the **Summary** pane to move it to the top of the screen.

Account Summary window

Account Summary	Open Position Summary	Margin Requirements			
	EUR	GBP	USD	Total(USD)	Total Change(USD)
Account Balance:	(240.00)	0.00	95,668,664.61	95,668,320.51	(13,002.50)
Profit/Loss:	0.00	0.00	(13,002.50)	(13,002.50)	44,144.38
Open Trade Equity for Futures:	(3,825.00)	0.00	55,721.10	50,236.93	N/A
OTE+P/L:	(3,825.00)	0.00	42,718.60	37,234.43	N/A
Unrealized Profit/Loss for Options:	0.00	0.00	0.00	0.00	N/A
Collateral on Deposit:	0.00	0.00	0.00	0.00	0.00
Net Liquidity Value:	(4,065.00)	0.00	95,776,419.28	95,770,591.00	95,770,591.00
Market Value of Options:	0.00	0.00	0.00	0.00	N/A
Cash Excess:	0.00	0.00	0.00	0.00	0.00
Yesterday's OTE:	0.00	0.00	52,033.56	52,033.56	N/A
Conversion Rates to the Reporting Currency					
	1.4338	1.6154	1.0000		

The **Account Summary** displays by currency: account balance, profit/loss, open trade equity for futures, OTE & P/L, unrealized profit/loss for options, collateral on deposit, net liquidity value, market value of options, and cash excess. The **Total Change** column shows the difference between the current day's values and last trading day statement (usually the day before).

Open Position Summary window

Account Summary		Open Position Summary			Margin Requirements			
Date	Symbol	L	S	CP	Price	Currency	OTE	
+ x	DGU2	101		165	110875*	EUR	1,515.00	
+ x	DLU2		83	-135	127750*	EUR	6,640.00	
+ x	EDAU5	70		70	99035*	USD	(5,250.00)	
+ x	ENQU2		10	-35	255662*	USD	4,075.00	
+ x	EPU2	45		70	133133*	USD	45,937.50	
+ x	FVAU2		25	-25	124152*	USD	(1,171.88)	
+ x	HOEQ2	22		26	27758*	USD	13,860.00	
+ x	TYAU2	10		35	134165*	USD	781.25	
	USAU2			-15		USD		
+ x	UA_EP_ENQ	25		70, -35	15893*	USD	3,862.50	
+ x	UA_NOB	5		35, -15	64052*	USD	1,796.88	
+ x	UA_HOE_CLE	4		26, -11	3040*	USD	783.20	
+ x	UA_DB_DG_DL	4		45, -135, 165	17304*	EUR	(1,600.00)	

The **Open Position Summary** displays: date, symbol, long, short, price, currency, and OTE. Fungible contract positions are grouped together. The summary line displays the preferred contract for this group of fungible contracts.

When spread positions are calculated by execution, symbols that do not have individual positions but are part of a strategy with an open position are highlighted in blue on a separate row.

Margin Requirements window

The **Margin Requirements** window tracks the balance in your margin account by currency.

Working with Cells and Columns

To select cells

- To select all cells, click the top left cell in the grid.
- To select a row, click a row.
- To select adjacent rows, click a row and drag the mouse up or down to select other rows. Or click the first row, press **Shift**, and click the last row.
- To select non-adjacent rows, click a row, press **Ctrl**, click another row, and repeat as necessary.

To customize the columns

The columns in each of the **Orders** tabs can be customized. See [Select Columns for Orders Tabs](#) for details.

To sort data

1. Click the column header.

A triangle appears, indicating whether the column is sorted in ascending order (one point of the triangle is pointing up) or descending order (one point of the triangle is pointing down).

2. Click the column header again to change the order.



To change column width

1. Drag the boundary on the right side of the column heading until the column is the width you want.
2. To make the column width fit the contents, double-click the boundary to the right of the column heading.

Setting Orders and Positions Preferences

The Orders and Positions Preferences window includes settings specific to this window:

- **Display settings** that allow you to choose the columns and buttons you wish to display and the data you wish to see. You can also choose a color theme
- **Account settings** that allow you to select trade matching type, notifications, synchronization, and currency details for accounts

" on page 59:

- [Notifications](#)
- [Risk](#)
- [Limits and Stop Orders](#)
- [Smart Orders](#)
- [Strategy Orders](#)

Setting Orders and Positions Display Preferences

To open display preferences, click the **Setup** button, and then click **Orders and Positions Preferences**.

Preferences that apply to all trading entry displays are described in [Setting Display Preferences that Apply to All Trading Applications](#).

Choose panels to display

Choose panels to display

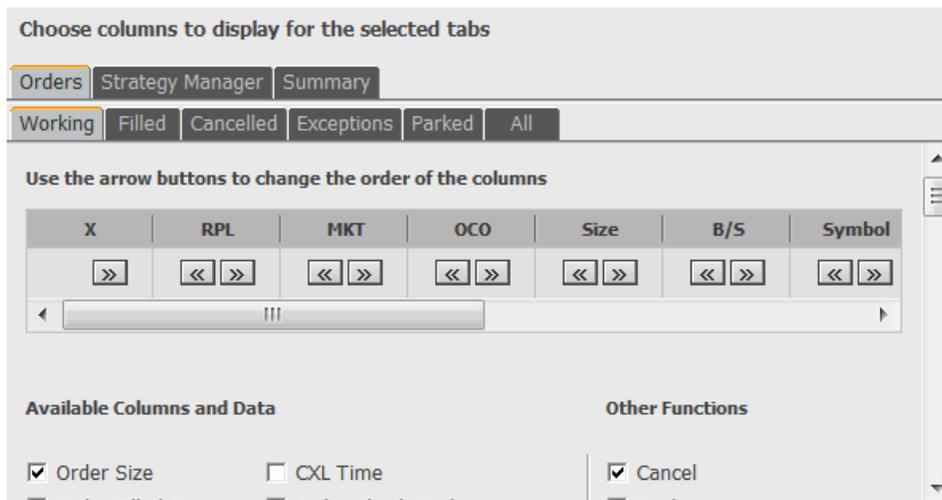
- | | |
|---|--|
| <input type="radio"/> Orders Pane | <input checked="" type="checkbox"/> Accounts |
| <input type="radio"/> Account Summary Pane | <input checked="" type="checkbox"/> Filter |
| <input checked="" type="radio"/> Orders & Account Summary Panes | |

Choose to display the Orders pane, Account Summary pane, or both.

Select the check boxes to display the Accounts and Filter panes.

Choose columns to display

Click a tab, then select the check boxes for the columns and buttons you want to add to the display. You must use the scroll bar down in order to see the columns. Use the arrow buttons to move columns left and right.



Orders columns include:

- Account
- Account Nickname: Nickname given to account in Account Settings.
- Average Fill Price: calculated as the number of filled lots times the fill price for each filled order divided by the number of filled lots.
- Buy/Sell
- Counterparty: identifies party on opposite side of trade
- CXL Time
- Duration
- Exchange
- FCM
- Fill Time
- Limit for Stop/Limit Orders
- Limit Price
- NC Average Fill Price (NC = net change)
- NC Limit Price (NC = net change)
- NC Order Price (NC = net change)
- NC Price (NC = net change)
- Order #
- Order Check Mark (see "[Adding and Managing Order Comments](#)" on page 258)
- Order Comment
- Order Filled Size
- Order ID
- Order Price
- Order Size
- Order Type
- Order Working Size
- Park Until (Parked window): date and time or only time if for current day
- Place Time
- Price
- Status
- Symbol
- Sys ID
- Ticket #

- Time till Active (Parked window): day, hour, and minute or only hour and minute if current day; value automatically updated each minute
- Type/Dur: combined type and duration in one column
- User: user name
- Visible Size: used with iceberg orders
- Yield Average Fill Price
- Yield Limit Price
- Yield Order Price
- Yield Price

Strategy Manager columns include:

- Average Fill Price
- BA Qty
- BB Qty
- Best Ask
- Best Bid
- Buy/Sell
- CXL Time
- CXL/RPL Counter
- Duration
- Exchange
- FCM
- Formula
- Limit for Stop/Limit orders
- Limit Price
- NC Average Fill Price
- NC Limit Price
- NC Order Price
- NC Price
- Order #
- Order Check Mark
- Order Comment
- Order Filled Size
- Order ID
- Order Price
- Order Size

-
- Order Type
 - Order Working Size
 - Place Time
 - Price
 - Q Name
 - Q Number
 - Server Order #
 - Status
 - Symbol
 - Sys ID
 - Ticket #
 - Type/Dur
 - User
 - Visible size
 - Yield Average Fill Price
 - Yield Limit Price
 - Yield Order Price
 - Yield Price

Summary columns include:

- Average Buy Price
- Average Sell Price
- Clearing Position: For outright contracts, this column displays the outright clearing position. For spreads, this column displays leg clearing positions separated by a comma. Leg positions are separated by a comma. Long positions have positive number; short positions have negative. This column is displayed only if **Group spread positions by filled spread orders** is selected in [Strategy Order preferences](#). If you have this column turned on and you turn off *group by spread orders* then turn it back on, this column also returns to its "on" state.
- Filled Buys (FILLB)
- Filled Sells (FILLS)
- Incomplete
- Incomplete Buys
- Incomplete Sells
- Message: contains the total number of messages submitted for each executed contract. Hover your mouse over the working, filled, and position columns to display a tooltip.
- NC Average Buy Price
- NC Average Sell Price

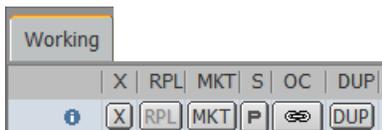
- P&L+OTE/MVO
- Position
- Position Long (Long)
- Position Short (Short)
- Symbol
- Volume Ratio: calculated as the total number of transactions placing, canceling, and modifying a symbol's orders divided by the number of filled lots for the symbol. It is displayed as the ratio [value] : 1, where [value] is the volume ratio specified with two-decimal precision (e.g. 0.1 : 1 and 2.50 : 1). This ratio is calculated for the current trading session only.
- Working Buys (WKGB)
- Working Sells (WKGS)
- Yield Average Buy Price
- Yield Average Sell Price

Other functions

In addition to choosing columns, you can also choose which buttons to add to order windows. The options vary depending on the window. These options are for the Working orders window:



The buttons look like this on the Orders and Positions window:



Select from:

Button	Working	Filled	Cancelled	Exceptions	Parked	All
Cancel	x	x			x	x
Replace	x	x				x
Convert to Market	x	x	x			x
Suspend	x					x
OCO	x					x
Duplicate	x	x	x	x	x	x
Activate					x	

Please see "[Modifying and Canceling Orders](#)" on page 250 for details about how these buttons are used.

Other display settings apply to all trading applications and are described in [Setting Display Preferences](#).

Price display

Price Display

One or more price display options must be selected.

- Price
- Net Change
- Yield
- Cancel/Activate All buttons
 - Park All button
 - Liquidate button
 - X Buys button
 - X Sells button
 - X All button
 - X Global button

Select these check boxes to display various prices and buttons on the Orders pane.

If you select **Net Change** and **Yield**, then column options for net change and yield (order price, limit price, average fill price, average buy price, average sell price, etc.) are activated in the column selection section of display preferences,

The system displays price if **Net Change** and **Yield** are not selected. It's only when at least one of those options is selected that you can unselect **Price**.

Font size

Click a button to choose one of four font sizes.

Enable liquidate buttons

- Enable liquidate buttons in Open Positions Summary tab

Select this check box to display the liquidate button on the Open Positions Summary, like this:

Account Summary		Open Position Summary		Margin Requirements		<input checked="" type="checkbox"/> Group by strategy	
Date	Symbol	L	S	Price	Currency	OTE	
+ <input checked="" type="checkbox"/>	EPH8	7		133789*	USD	(750.00)	

Enable clearing position column in Open Positions Summary tab

Enable clearing position column in Open Positions Summary

If selected, then the [Clearing Position column](#) is displayed on the summary of positions. This preference is disabled if the **Group spread positions by filled spread orders** preference is not selected.

Enable sub-accounts

Enable sub-accounts

If selected, then order comments are displayed in the Account filter list.

This option is helpful for traders who use comments to identify the customer account being traded, that is when comments are used for sub-account identifiers. By identifying a sub-account in the comments field, you can filter the order book by customer.

See also: [To use order comments to identify and filter by sub-accounts](#).

Switch to Strategy Manager

Switch to Strategy Manager > Incomplete tab when order is incomplete

Switch back to previous tab upon Incomplete order resolution

When the system alerts you of an incomplete order, you can automatically go to the Incomplete window. Click the top check box.

To go back to the previous window when the incomplete order has been resolved, click the bottom check box.

Highlight working order at the Best Bid/Ask

Highlight working order at the Best Bid/Ask

If this check box is selected, then working orders on the Orders and Positions window are highlighted if they are either at the best bid or the best ask. Here's an example:

	X	RPL	MKT	S	OC	DUP	Size	B/S	Symbol	Order Price	Type	Duration▼	Place Time	Order #
							20	Buy	TYAU2	129100		DAY	16:07:13	414617112

Configuring Account Settings

Account preferences include trade matching, notification of held positions, server synchronization, and currency settings.

Before setting preferences, choose which account the settings will apply to. If you want these settings to apply to all accounts, select the **Apply these settings for all new accounts** check box at the bottom of the window.

Account preferences can also be accessed by clicking the **Setup** button and then clicking **Account Preferences**.

You can also [create an account](#).

Account name

Enter an account nickname for existing accounts. This nickname is used on the Accounts window, the Account Picker, and in the **Account Nickname** field on the Orders and Positions window. Sorting by nickname on the Accounts List can be helpful.

If you'd like to set the account as the default selection when you open a trading application, select the check box.



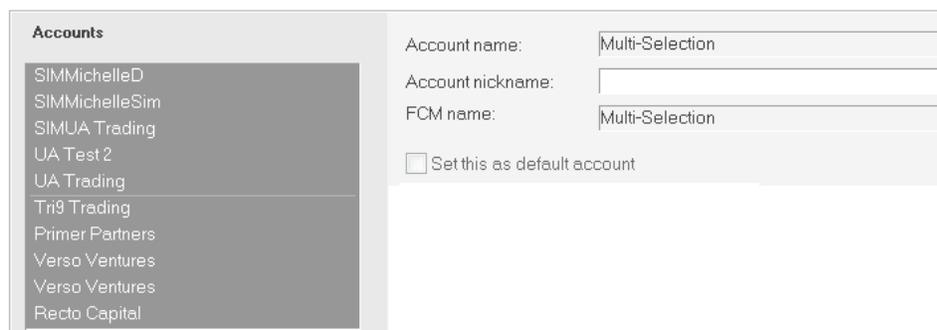
Account name: UA Trading

Account nickname: UAT

FCM name: Refco

Set this as default account

If all accounts are going to have a nickname that differs only by a prefix or suffix, select all accounts and type a nickname. Then, add the prefix or suffix individually.



Accounts

- SIMMichelleD
- SIMMichelleSim
- SIMUA Trading
- UA Test 2
- UA Trading
- Tri9 Trading
- Primer Partners
- Verso Ventures
- Verso Ventures
- Recto Capital

Account name: Multi-Selection

Account nickname:

FCM name: Multi-Selection

Set this as default account

The Account name and FCM name are active only when you are adding an account. The default option is not available.

Account name:	<input type="text" value="Tri9 Trading"/>
Account nickname:	<input type="text" value="Tri9"/>
FCM name:	<input type="text" value="Vanbody"/>
<input type="checkbox"/> Set this as default account	

Trade matching type

Trade matching type	
Intraday:	<input type="text" value="FIFO"/>
Historical:	<input type="text" value="FIFO"/>
<input checked="" type="checkbox"/> Match intraday first	
<input checked="" type="checkbox"/> Show 'Purchase & Sales' as Entries & Exits	
<input checked="" type="checkbox"/> Show confirmations	

The matching type determines the orders that are closed when an offsetting buy or sell order is executed.

Use the drop down arrows to select one of these values:

- **FIFO**: First In, First Out. The first order filled is the first order offset when an order on the opposite side of the market is executed.
- **HBHS**: High Buy, High Sell. The highest buy is matched with the highest sell. You must select both an intraday and historical (daily or longer) matching scheme.
- **LIFO**: Last In, First Out. The last order filled is the first order offset when an order on the opposite side of the market is executed.

If you select **Match intraday first**, the system matches the previous day's open positions and intraday fills in a single pass, unlike FCM end of day statements, where intraday trades are matched first and then intraday leftover is matched against previous close positions.

If you would like the P&L for each match displayed, select the **Show 'Purchase & Sales' as Entries & Exits** check box.

If you would like the **Confirmations** tab displayed on the **Orders and Positions** window, select the **Show confirmation** checkbox.

Notifications

Notifications

Warn me if I hold positions within days of first notice day

Select this check box to receive a warning within so many days of the first notice day. You enter the value for the number of days.

Server synchronization & checking position

Server synchronization & checking position

Periodically compare local net positions with the Trading Server every min

Synchronize net positions with the Trading Server automatically.

Set how often you want to compare your local position with your position on the server. Choose whether you want to synchronize those positions automatically.

Order Comments

Always add this comment to orders placed on this account.

Select this check box to automatically include a default comment with the orders placed on a particular account. This is especially helpful for firms that want to identify the trader on the account with the order.

Currency

Currency

Reporting currency:

Use the currency rates from the trading server

Currency	Rate	Time
CAD	(1 / IUSDCAD)	17:00
CHF	(1 / IUSDCHF)	17:00
EUR	IEURUSD	17:00
GBP	IGBPUSD	17:00

Apply these settings for all new accounts

To change the reporting currency, select a new currency from the dropdown. The CQG rate will then be based on that currency.

To use the currency rates generated by the system, select the **Use currency rates from the trading server** check box. If it is selected, the currency buttons will be disabled.

Add, edit, and delete currencies using the buttons.

Create quick list of accounts

Specify a quicklist for accounts that appear when selecting an account from trading displays:

Configure account quick list...

Number	Name	Nickname
PSMichelle	SIMMichelleSim	SIMMicS
0707	UA Test 2	UA
070707	UA Trading	UAT
PSMichelleD	SIMMichelleD	SIMMic
PS070410	SIMUA Trading	SIMUAT

Click the Filter button to customize the account list. Changes made here apply to all Account Picker windows.

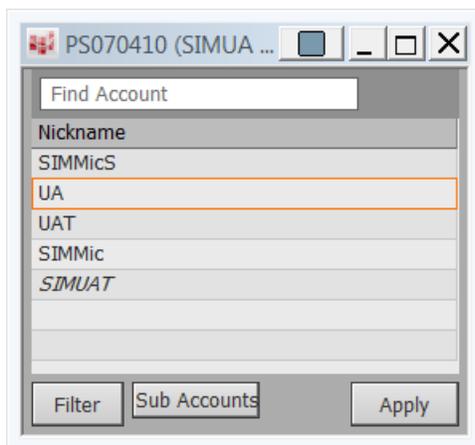
Select columns to display in the Account List view

The columns you select here are displayed in the Account Picker and Accounts window.

Select columns to display in the Account List view:

- Number
- Name
- Nickname
- FCM
- Comment

By hiding columns, you can significantly decrease the size of the Accounts window and save real estate:



Managing Accounts

Managing FCMs

Most FCM actions can be taken directly from the Accounts pane. Use the **Setup** button menu to add a local FCM.

See also: [To use order comments to identify and filter by sub-accounts](#)

To add a local FCM

You may want to track the activity for FCMs and accounts that do not trade with CQG. These FCMs and accounts are referred to as local. The settings for the FCM become the default settings for each local account added to it, but you can change them for each account.

1. Select the **Setup** button.
2. Select **New Local FCM**. The first window in the **Create new local FCM** wizard is opened.
3. Enter the **FCM's name**.
4. Follow the wizard to completely set up the new FCM. The steps in the wizard are described in "[Configuring Account Settings](#)" on page 232.

To edit an FCM

1. Right-click the **FCM** name.
2. Select **Edit**. The **FCM setup** window opens.
3. Make the desired changes to the global, currency, and events settings making sure to click **Apply** for each window.

To delete an FCM

1. Right-click the **FCM** name.
2. Select **Delete**. The confirmation window opens.
3. Click **Yes**.

Managing Accounts

Most FCM actions can be taken directly from the Accounts Pane. Some options are included on the Setup menu.

To create a local account

Because local accounts must belong to local FCMs, to add local accounts, you must first add a local FCM. Local FCMs can only have local accounts assigned to them. Local accounts must be associated with local FCMs.

1. Right-click the **FCM** name.
2. Select **New Local Account**. The first window in the **Create new local account** wizard is opened.
3. Follow the steps in the wizard just as you do for setting up an FCM.

For explanations of account settings, go to "[Configuring Account Settings](#)" on page 232.

To add an account

1. Click the **Setup** button.
1. Click **Orders and Positions Preferences**.
2. Click **Account Settings**.
3. Click the **Add account** button at the bottom of the Accounts list. A new account is displayed in the list:



4. Type an account name and FCM name.
5. When you are finished setting up the account, click **OK**.

For explanations of account settings, go to "[Configuring Account Settings](#)" on page 232.

To edit an account

You can edit both local and non-local accounts.

1. Click the **Setup** button.
2. Click **Account Preferences**. The **Account Setup** window opens.



These are the same preferences you can find at **Setup > Orders and Positions Preferences > Account Settings**.

3. Make the desired changes to **Global, Currency, Events** settings.
4. Click **OK**.

To delete an account

You can delete both local and non-local accounts. The ability to delete an account is regulated by enablements.

1. Right-click the account you wish to delete.
2. Click **Delete**. The **confirmation** window opens.
3. Click **Yes**.

You can also delete an account in [Account Settings](#) preferences.

Working with Trades and Positions

To add a trade

You can add a trade for local accounts only.

1. Right-click the local account.
2. Select **Add Trade**. The **Add Trade** window opens.
3. Enter the order details.
4. Click **OK**. The trade is displayed in the Orders pane.

To add a manual fill

1. Right-click the account for which you want to add a manual fill.
2. Click **Add Manual Fill**. The **Add Manual Fill** window opens.
3. Enter values in the order detail fields.
4. Click **Add**.

To add a cash adjustment

You can add a cash adjustment for local accounts only.

1. Right-click the local account.
2. Select **Add Cash Adjustment**. The **Add Cash Adjustments** window opens.
3. Enter the adjustment information.
4. Click **Add**. The adjustment is shown on the **Purchase & Sales** window.

To check positions

Please note that you cannot check positions for accounts with working market orders.

1. Right-click the account you wish to check. You cannot check local accounts.
2. Click **Check Positions**. The **Discrepancies** window opens. It displays server and client information for any discrepancies in the account.
3. If discrepancies exist, click **Synchronize** to resolve them.

To view expiration information

You can view information for both local and non-local accounts.

1. Right-click the account you wish to view.
2. Click **Expiration Info**. The **Expiration Info** window opens. It displays the symbol, open position, and expiration date of all open orders for this account.

Generating Reports

The data contained in the statement reports corresponds to data on the Orders and Positions window:

- Orders data is taken from the **Orders** tab.
- Purchase & Sales, Cash Adjustments, and Collaterals data is taken from the **Purchase & Sales** tab.
- Trade data is taken from the **Confirmations** tab.
- Account Value Summary data is taken from the **Account Summary** and **Margin Requirements** tabs.
- Open Position Summary data is taken from the **Open Position Summary** tab.
- Transactions and Order Fills data is taken from the transaction history seen in the order information details.

Excel Statement Report data is extracted in this way:

- Trades: Most recent day of the range
- Orders, Transactions, and Order Fills: Each day of the range removing duplicates
- Purchase & Sales: Each day of the range
- Account Value Summary: Most recent day of the range
- Open Position Summary: Most recent day of the range
- Cash Adjustments: Each day of the range

If an order, such as a parked order, is present in the data for several days, it is included only once.

To generate a current day statement

1. Click the **Setup** button.
2. Click **Current Day Statement**.



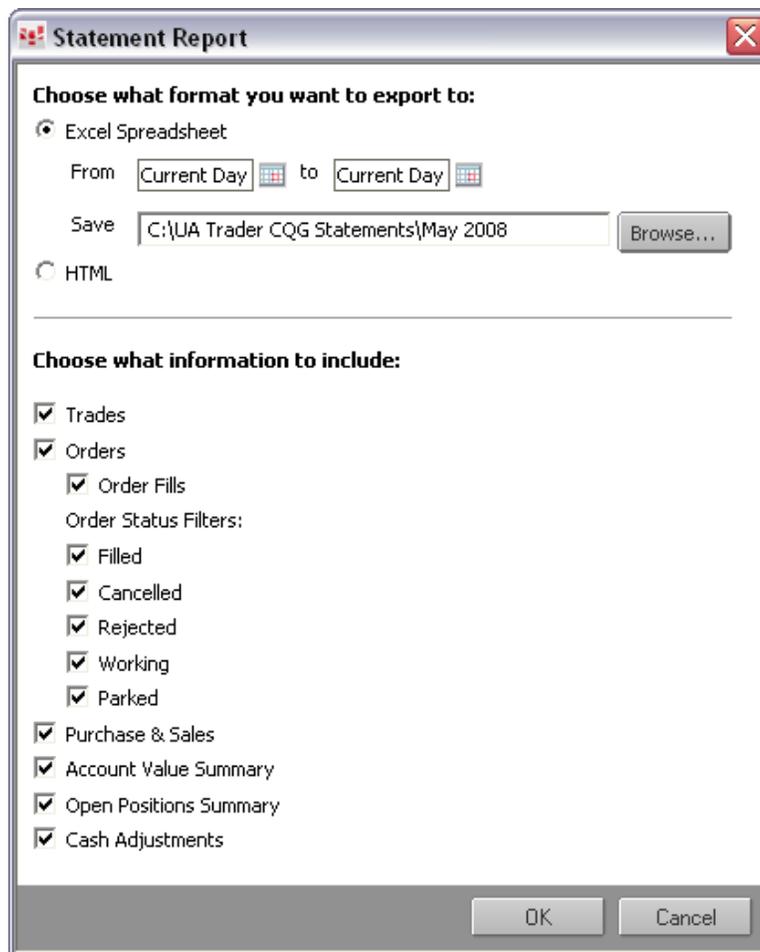
3. If necessary, change the day and time.
4. Click **OK**.

For more options, you can also [generate a statement report](#) for the current day.

To generate a statement report

You can view statement reports for both local and non-local accounts. You should generate only one report at a time, so as not to overload your system.

1. Click the **Setup** button on the toolbar or right-click the account you wish to see a report for.
2. Click **Statement Report**. The **Statement Report** window opens:



For local accounts, starting and ending date, orders, order fills, and order status filters will not be available.

Order options are also not available if you are not logged on to trade.

Only calendar days with historical data will be available as the starting or ending dates. If none exist, then starting and ending dates will not be available.

3. To save the data to an Excel spreadsheet, click the **Excel Spreadsheet** button, choose a date range, and the location to save the file to.
4. To save the data in an HTML file, click the **HTML** button.

5. Choose the information you want included in the report by selecting the **Trades**, **Orders** and its sub-categories, **Purchases & Sales**, **Account Value Summary**, **Open Positions Summary**, and **Cash Adjustments** check boxes.
6. Click **OK**. HTML files open immediately. Excel files open after being exported and saved to the location you selected:



The file is saved as YYYYMMDD_HHMMSS_CQGStatementReport_YYYYMMDD-YYMMDD.xls. The first date is the date and time you exported the data, and the second date is the date covered in the report. If you rename reports, please note that a report that is saved to the same location and with the same name as an existing report will overwrite the earlier report.

You will receive an error message if:

- you have selected **Orders**, but have not selected an **Order Status Filter**.
- you have not selected an information check box.
- the location you're saving to does not exist.
- the starting date is later than the ending date.

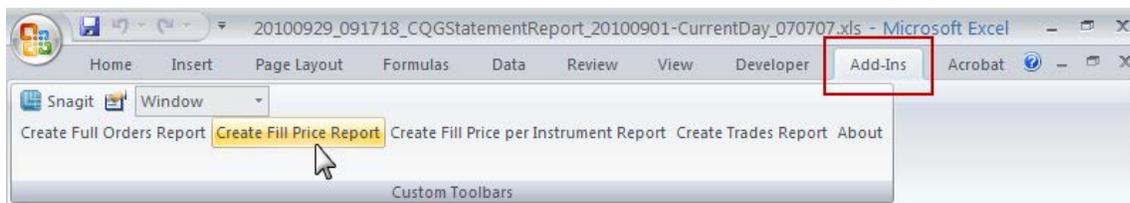
To enhance the report with Excel add-ins

The statement report includes worksheets based on your selections. For example:

	A	B	C	D	E	F
1	Orders_Side	Orders_Size	Orders_When	Orders_CQGID	Orders_Error	Orders_Symbol
2	Buy	1	9/24/2010 15:53	109902	TRUE	SPREAD(F.US.HOEX10-F.US.CLEX10, L1, , 1:1)
3	Buy	1	9/24/2010 15:53	109902	TRUE	SPREAD(F.US.HOEX10-F.US.CLEX10, L1, , 1:1)
4	Buy	1	9/21/2010 13:50	109902	TRUE	F.US.EPZ10
5	Buy	1	9/21/2010 13:50	109902	TRUE	F.US.EPZ10
6	Buy	1	9/21/2010 13:50	109902	TRUE	F.US.EPZ10
7	Buy	1	9/21/2010 13:50	109902	TRUE	F.US.EPZ10
8	Buy	1	9/21/2010 13:51	109902	FALSE	F.US.EPZ10
9	Buy	1	9/21/2010 13:51	109902	FALSE	F.US.EPZ10
10	Buy	1	9/21/2010 13:51	109902	FALSE	F.US.EPZ10
11	Buy	1	9/21/2010 13:51	109902	FALSE	F.US.EPZ10
12	Buy	1	9/21/2010 13:51	109902	FALSE	F.US.EPZ10

The image shows an Excel spreadsheet with columns A through F. The data includes order details such as side, size, time, CQGID, error status, and symbol. A red box highlights the 'Orders' worksheet tab at the bottom of the spreadsheet.

You can add reports, like Fill Price and Trades, using Excel add-ins. Note that this image is from Excel 2007.

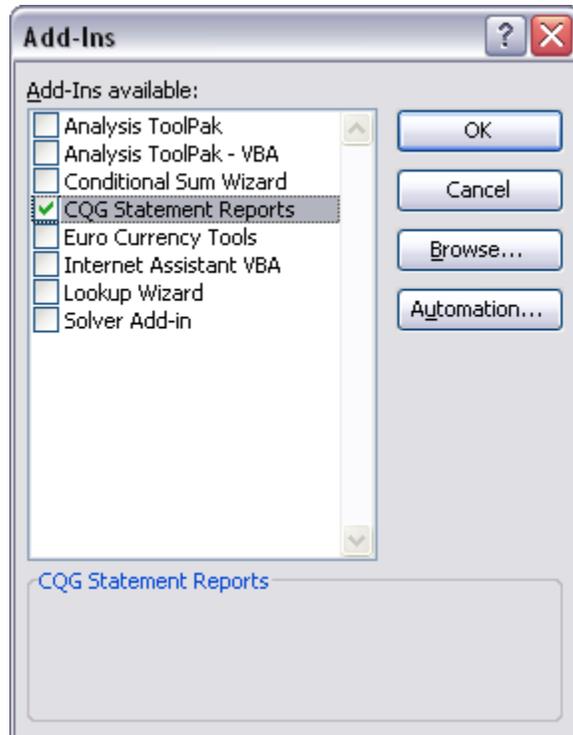


1. Click **Add-Ins**.
2. Click the report you want to run.
3. The report is added as another worksheet.

Errors with add-ins

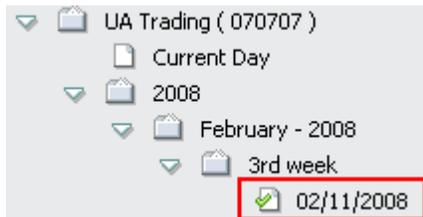
In the event you receive an error message that refers to an Add In problem, follow these instructions:

1. In Excel, click **Tools**.
2. Click **Add-Ins**.
3. Select the **CQG Statement Reports** check box.
4. Click **OK**.



To view a reconciliation report

The reconciliation report is available if your FCM sends daily statement data to COG. To view the report, you must have the **by Date** tab selected on the Accounts pane. If a reconciliation report is available, a checkmark appears on the document icon, like this:



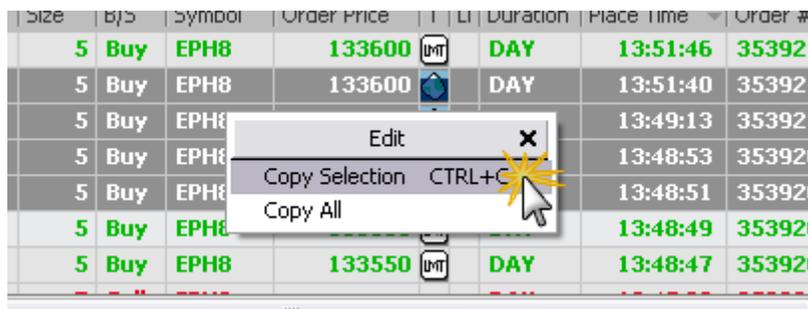
1. Right-click the date next to the check-marked icon.
2. Select **Reconciliation Info**. The reconciliation report is displayed in a browser window.

Exporting Data to Microsoft Excel

You are able to [generate Excel statement reports](#) directly from the Orders and Positions Window.

To copy selected rows to Excel:

1. Select the rows you want to copy.
2. Right-click a selected row, and point to **Edit**.
3. Click **Copy Selection** to copy only the selected rows.



The screenshot shows a trading grid with columns: Size, B/S, Symbol, Order Price, LMT, Duration, Place Time, and Order #. Several rows are selected, and a context menu is open over one of them. The menu options are: Edit, Copy Selection CTRL+C, and Copy All. A mouse cursor is pointing at the 'Copy Selection CTRL+C' option.

Size	B/S	Symbol	Order Price	LMT	Duration	Place Time	Order #
5	Buy	EPH8	133600	LMT	DAY	13:51:46	353921
5	Buy	EPH8	133600	LMT	DAY	13:51:40	353921
5	Buy	EPH8				13:49:13	353921
5	Buy	EPH8				13:48:53	353920
5	Buy	EPH8				13:48:51	353920
5	Buy	EPH8				13:48:49	353920
5	Buy	EPH8	133550	LMT	DAY	13:48:47	353920

4. Open an Excel spreadsheet.
5. Press **Ctrl+V** to paste the data into Excel.

To copy all rows in the selected grid display:

1. Select at least one row in the grid display.
2. Right-click the selected row, and point to **Edit**.
3. Click **Copy All** to copy the entire grid.
4. Open an Excel spreadsheet.
5. Press **CTRL+V** to paste the data into Excel.

Managing Orders and Positions

The Orders and Positions window provides all of the functionality you need to fully manage your orders and positions. Modify and cancel orders, manage positions, and manage spreads on this window.

Modifying and Canceling Orders

On the Working Orders window, you can:

- cancel an order
- change an order to a market order
- create an OCO from an existing order
- duplicate an order
- change the order size
- change the order price
- change the account

Working	Filled	Cancelled	Exceptions	Parked	All							
	X	RPL	MKT	OCO	DU	Size	B/S	Symbol	Order Price	Type	Duration	Order #
	X	RPL	MKT	OCO	DU	5	Buy	CLEG1	8952	LIMIT	DAY	434230225
	X	RPL	MKT	OCO	DU	10	Buy	ENQH1	222850	LIMIT	DAY	434230224
	X	RPL	MKT	OCO	DU	5	Sell	EPH1	124950	LIMIT	DAY	434270180
	X	RPL	MKT	OCO	DU	5	Buy	EPH1	124650	LIMIT	DAY	434290245

Cancel, Replace, Market, OCO, Duplicate

The cancel, replace, market, OCO, and duplicate buttons are displayed based on your preferences.

See also: [Suspending Working Orders on the Orders and Positions Window](#)

To cancel orders

To cancel a single order

1. On the **Working** window, select the order to be cancelled.
2. Click the **X** button.

To cancel more than one order

1. Select the rows you wish to cancel.
2. Right-click one of those rows.
3. Click **Cancel Selected Orders**.

To change an existing stop or limit order to market

1. On the **Working** window, select the order to be changed.
2. Click the **MKT** button. The system cancels the current order and places a new market order.

Note: When market orders are not allowed for a commodity, the **MKT** button is not displayed.

To combine existing orders into a single OCO

1. On the **Working** window, select the first order to be combined.
2. Click the **OCO** button for that order. The button will turn orange, and the icon on the left will change from  to .
3. Click the **OCO** button for the next order you wish to combine. Again, the icon changes. Repeat this step for each order you wish to be part of the OCO.
4. After all orders have been selected, click the **OCO** button that corresponds to the first order you added. Your OCO order is complete.

Upon execution of one of the orders, the other order is cancelled automatically.

To create an OCO if you have only one open order

1. On the **Working** window, select the order to be modified.
2. Click the **OCO** button for that order. The button will turn orange, and the icon on the left will change from  to .
3. Place an order. You will receive a confirmation message for that order. Repeat this step for each order you wish to be part of the OCO.
4. After all orders have been placed, click the **OCO** button for the first existing order. Your OCO order is complete.

Upon execution of one of the orders, the other order is cancelled automatically.

To duplicate an order

1. On the **Working** window, select the order to duplicate.
2. Click the **DUP** button.
3. If you have order confirmations enabled, click **Place Order**.

The duplicate order is an exact match to the first order – same symbol, size, duration, side, price, etc. Note that you can change parameters on the **Confirm** window. For example, in this image, 10 contracts was changed to 20 contracts. Changes are indicated by an asterisk.



BUYING 50 EPH1 at 124575 Iceberg PS070410

Enter visible order size:

20* Contracts

Place Order Don't Place Order

To change the size of an order

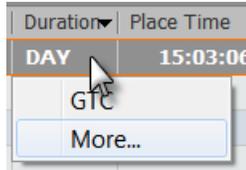
1. On the **Working** window, click the size field of the order you want to change. You'll notice a flashing cursor when you have successfully selected the field.
2. Change the size value by typing another number.
3. Click the **RPL** button. A confirmation window opens.
4. Click **OK**.

To modify the price of an order

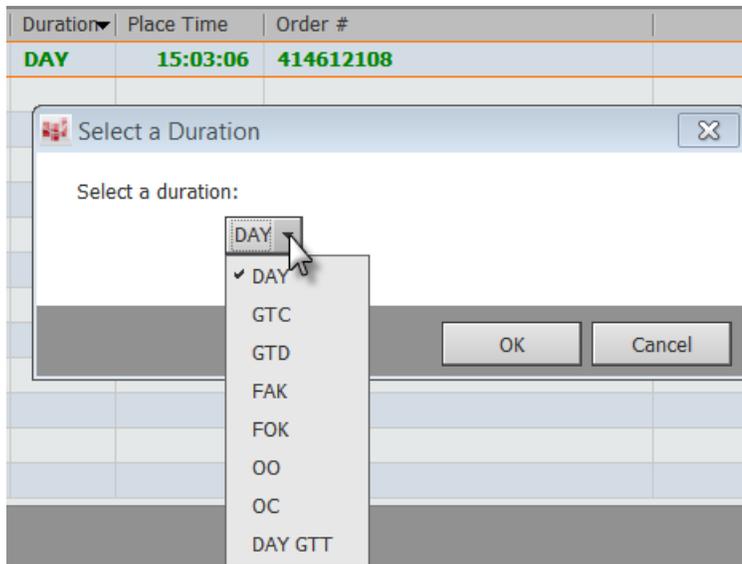
1. On the **Working** window, click the price field of the order you want to change. You'll notice a flashing cursor when you have successfully selected the field.
2. Change the price by typing another price or part of a price.
3. Click the **RPL** button. A confirmation window opens.
4. Click **OK**.

To change the duration of an order

1. On the **Working** window, click the duration field of the order you want to change. A duration menu is displayed.



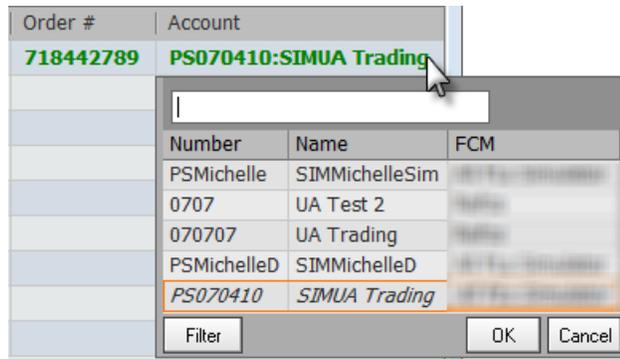
2. If the option you want is not displayed, click **More** to open the **Select a Duration** window.
3. Click the arrow to see the complete duration menu.



4. Click a duration.
5. Click **OK**.

To change the account

1. On the **Working** window, click the **Account** field.
2. Select an account from the Account Picker.



3. Click **OK**.

Suspending Working Orders on the Orders and Positions Window

You can suspend working orders of all types, except trailing, for both outright and synthetic strategies. This feature is especially helpful for those traders who need to leave their workstations but don't want orders to continue to work in their absence.

It is not recommended to park or activate orders that are part of an incomplete strategy order. If you park a trailing or bracket, you are warned that the order will be cancelled and not parked.

Please [contact COG Customer Support](#) if you would like to enable this feature.

To suspend all orders

Suspend all working orders by clicking the **Park All** button on the **Working** or **All** window.

Working	Filled	Cancelled (3)	Exceptions	Parked	All (14)									
X	RPL	MKT	S	OC	DUP	Size	B/S	Symbol	Order Price	Type	Limit Price	Duration	Place Time	Order #
	X	RPL	MKT	P		DUP	20	Buy	TYAU2	131175		DAY	15:33:15	414617111
X Buys	X Sells	X All	X Global	X All Liq All		All								

You can also click the **Park All** button on the toolbar.

To suspend orders by side, symbol, or account

Right-click the **Park All** button to open the **Park All Orders** window, then select which orders to suspend: all, buys, sells, all symbols, a particular symbol, all accounts, a particular account.

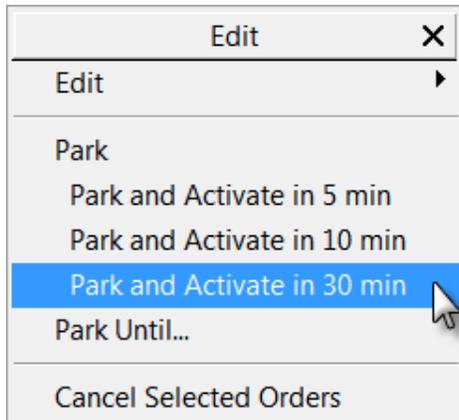
To suspend an order

Suspend a single order by clicking the **P** button on the order row:

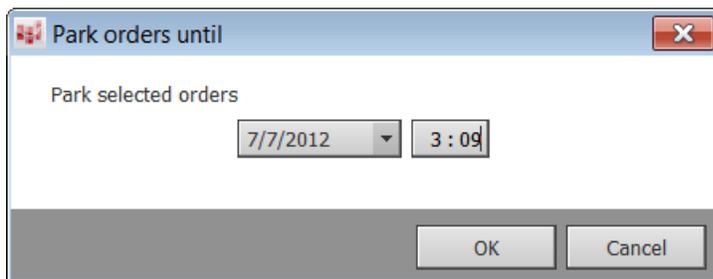
Working	Filled	Cancelled (3)	Exceptions	Parked	All (14)						
X	RPL	MKT	S	OC	DUP	Size	B/S	Symbol	Order Price	Type	
	X	RPL	MKT	P		DUP	20	Buy	TYAU2	131175	

To suspend an order for a specific amount of time

Right-click the working order and then select either **Park and Activate in 5 min**, **Park and Activate in 10 min**, **Park and Activate in 30 min**, or **Park Until**:



if you select **Park Until**, you can set a specific date and time to activate the order.



To activate an order

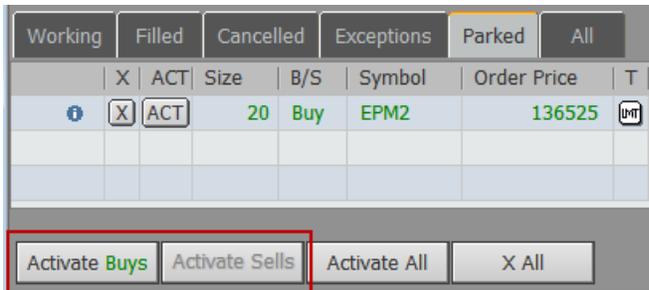
Activate a single order by clicking the **ACT** button on order row.

Working	Filled	Cancelled	Exceptions	Parked	All		
	X						
	ACT	Size	B/S	Symbol	Order Price	T	
	X	ACT	20	Buy	EPM2	136525	INT

You can also right-click the row and click **Activate**.

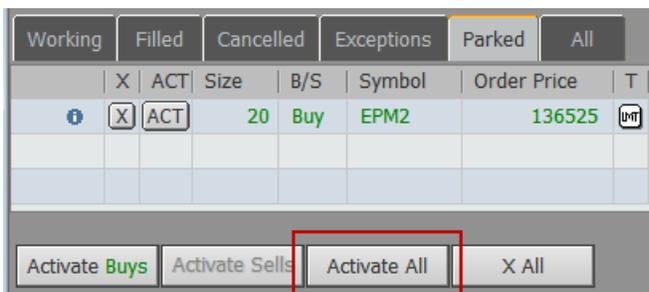
To activate buys or sells

Activate orders by side by clicking either the **Activate Buys** or **Activate Sells** button on the **Parked** window:



To activate all orders

Activate all orders by clicking the **Activate All** button on the **Parked** window.



You can also click the **Activate All** button on the toolbar.

Adding and Managing Order Comments

Order Comments can be used in several ways. Traders can write notes for themselves and for other traders without leaving COG IC. Comments can also be used to identify sub-accounts.

Comments can be entered both [when you place the order](#) (including [manual fills](#)) and after you place the order. You can update comments as needed.

They are displayed on the Orders and Positions window in the **Comment** column, keeping an order and its comments together for easy reference. To display the **Comment** column, select the **Order Comment** column in [preferences](#).

	Size	B/S	Symbol	Order Price	Type	Limit Price	Duration	Place Time	Order #	CHK	Comment
	50	Sell	EPU8	125925		125600	DAY	09:21:45	5069230	<input checked="" type="checkbox"/>	
	25	Buy	EPU8	125475			DAY	09:20:14	5069227	<input type="checkbox"/>	customer called at 10:31
	100	Buy	EPU8	125550			DAY	09:15:29	5069226	<input checked="" type="checkbox"/>	call John when filled 312-555-3195

Select **Order Check Mark** if you want the **CHK** column to be displayed. The **CHK** column provides another way for you to mark orders. Define the column any way you want, such as "Called Customer," and then select the **CHK** check box to indicate that the action has been completed.

If an order has an associated comment, a blue triangle icon is displayed near the information icon. When you hover your mouse over the information icon, details of the order are displayed. These details include the order comments:



The screenshot shows a window with tabs for Working, Filled, Cancelled, Exceptions, Parked, and All (3). The main area displays a table of orders. One order is highlighted in yellow: Buy 3 F.US.EPU8 at 126200 LMT DAY. A blue triangle icon is visible next to the information icon. A tooltip is displayed over the blue triangle icon, showing the following details:

Buy 3 F.US.EPU8 at 126200 LMT DAY

Order ID: GW106_43 ORDER #:
 Ticket #:
 SysID: 109902 UserID: michelle
 FCM: Refco Account: UA Trading
 Status: Sent

Comment:
 call customer when filled

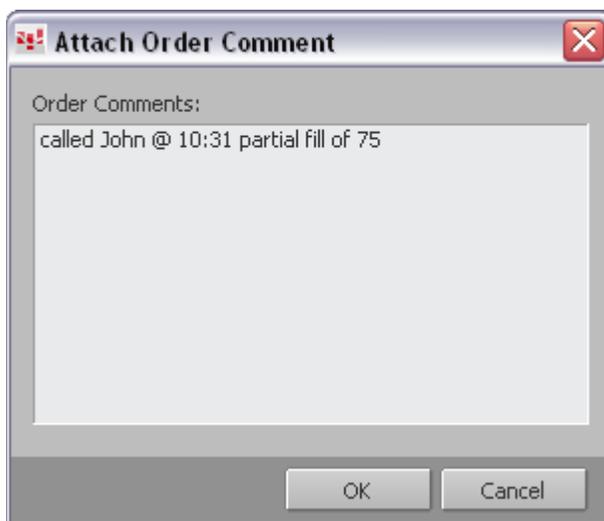
To add a comment

1. For the order you want to comment on, double-click the empty **Comment** field to open the **Attach Order Comment** window.
2. Type your comment.
3. Click **OK**.

You can also add comments when you [enter the order](#) on the Order Ticket.

Order Entry:

To change a comment



1. Double-click the existing comment to open the **Attach Order Comment** window.
2. Edit the comment.
3. Click **OK**.

To use order comments to identify and filter by sub-accounts

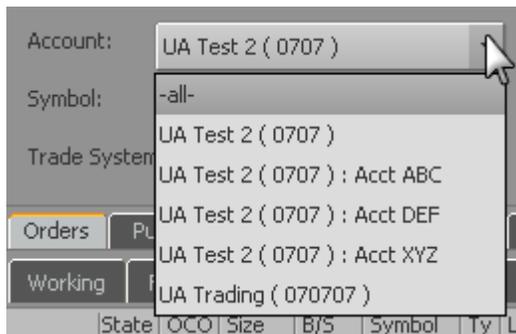
When **Enable sub-accounts** is selected in preferences, order comments are displayed in the [Account filter](#) list.

This is helpful for traders who use comments to identify the customer account being traded, that is when comments are used as sub-account identifiers. By identifying a sub-account in the comments field, you can filter the order book by customer.

1. When you place an order, add a comment to each order identifying the sub-account the order applies to. Those identifiers are then displayed in the **Comment** field on the **Orders and Positions** window. In our example we have used Acct ABC, Acct DEF, and Acct XYZ.

Orders													
Purchase & Sales													
Confirmations													
Strategy Manager													
Summary													
Working													
Filled													
Cancelled													
Exceptions													
Parked													
All													
	State	OCO	Size	B/S	Symbol	Ty	Li	Durati	Avg Fill Price	Place Time	Order #	Fill Time	Comment
	MKT	OCO	5	Sell	EPZ1	UNT		DAY		15:06:45	655110539		Acct DEF
	MKT	OCO	10	Sell	ENQZ1	UNT		DAY		15:05:15	655170246		Acct XYZ
+		✓	10	Buy	HOEZ1	UNT		DAY	31207	15:04:55	655210363	15:04:56	Acct ABC
+		✓	5	Buy	CLEZ1	UNT		DAY	6462	15:04:35	655180328	15:04:36	Acct ABC
		✓	5	Buy	EPZ1	UNT		DAY	124975	15:04:10	655180327	15:04:10	Acct XYZ
+		✓	10	Buy	EPZ1	UNT		DAY	125025	14:59:34	655150207	14:59:35	Acct XYZ

2. Select **Enable sub-accounts** in **Orders and Positions** preferences. The list of accounts now includes the sub-accounts:



3. Filter by a particular account, so that only orders for that account are displayed:

Orders													
Purchase & Sales													
Confirmations													
Strategy Manager													
Summary													
Working													
Filled													
Cancelled													
Exceptions													
Parked													
All													
	State	OCO	Size	B/S	Symbol	Ty	Li	Durati	Avg Fill Price	Place Time	Order #	Fill Time	Comment
	MKT	OCO	10	Sell	ENQZ1	UNT		DAY		15:05:15	655170246		Acct XYZ
		✓	5	Buy	EPZ1	UNT		DAY	124975	15:04:10	655180327	15:04:10	Acct XYZ
+		✓	10	Buy	EPZ1	UNT		DAY	125025	14:59:34	655150207	14:59:35	Acct XYZ

When you filter by sub-account, all data for the current day, including positions, offsets, and confirmations is generated based only on fills that belongs to the selected sub-account.

Filtering by sub-account applies only to the current day.

Balances on the Account Summary window are calculated for the main account regardless of the sub-account.

When you liquidate a position, the sub-account identifier is replicated in the **Comment** field.

If you replicate the filtered Orders and Positions window, the filter remains.

As you add sub-accounts, the filter list is updated automatically. If you delete a sub-account (that is, change the sub-account, so that no order comments contain that sub-account), it is removed from the list after logging in again. Comments for manual fills are changed on the [Update Trade window](#).

If you change or delete the sub-account comment, the sub-account is displayed in the filter menu until you:

- log off from trading and log on again;
- change the date filter from current day; or
- clear the **Enable sub-accounts** check box in preferences.

The master account is used if the selected sub-account has been removed from the list.

A sub-account is automatically removed if there are no associated fills for 100 days.

Managing Positions

You can liquidate positions and view open position details on the Open Position Summary window.

Liquidate button

Account Summary		Open Position Summary	Margin Requirements		
	Date	Symbol	L	S	Price
-	x	EPH8	10		133925*
		Last Price:			135875
	02/12/08	EPH8	6		133925
	02/12/08	EPH8	4		133925

Toggle the +/- button to view or hide open position details, including last price.

To liquidate a position

1. Click the **X** button associated with the position you wish to liquidate. A confirmation window opens.
2. Click **Liquidate**.

You must first enable this button in [preferences](#).

To view additional position details

Click the + button to see last price and all of the orders associated with that open position.

Spreadsheet Trader

BETA

You can add trading columns to the Portfolio Monitor to consolidate chart, study, condition, and trade data in one window or open Spreadsheet Trader for a pre-populated Portfolio Monitor. You can also trade directly from the monitor. Trading requires an enablement.

This image shows trading columns available on the Portfolio Monitor. These columns can also be combined with chart interval and study columns.

Portfolio Monitor: PS070410 (SIMUA Trading: All PLs Simulator) - EPH2, ENQH2, HOEJ2...

Sym...	Price	PriceNC	A Vol	A Cu Vol	Ask	B Size	Buy	WB(F)	B Vol	B Cu Vol	Bid	WA(F)	S Size	Sell	Trading Position	OPE+P/L
EPH2	136850 A	-600	524	524	136850	50	Sell STP	100	449	449	136825		10	Buy STP	L 125 @ 1368	2,562.50
ENQH2	263975 A	-350	39	39	263975	50	Sell STP	50	20	20	263950		10	Buy STP	L 290 @ 2638	7,090.00
HOEJ2	32035 B	-718	1	1	32042	10	Sell STP		1	1	32035	16[4]	5	Buy STP	S 15 @ 32041	(1,394.40)
CLEJ2	10648 B	-236	3	3	10649	50	Sell STP		3	3	10648	38[12]	5	Buy STP	L 75 @ 10884	537,150.00
TYAM2	131040 A	+190	876	876	131040	50	Sell STP	100	17	1742	131035		20	Buy STP	S 40 @ 131040	0.00
USAM2	141140 A	+310	208	208	141140	20	Sell STP	40	382	382	141130	20	20	Buy STP	S 40 @ 141140	1,250.00

Trading columns cannot be a child of another column.

As with other Spreadsheet Trader columns, you can sort and hide columns.

To log on to trade, click the **Logon** button on the Spreadsheet Trader toolbar.

Opening Spreadsheet Trader

Click the **Trade** button and then click **Spreadsheet Trader**.

You can also add trading columns to a Portfolio Monitor to create a Spreadsheet Trader.

Setting Spreadsheet Trader Preferences

To access Spreadsheet Trader preferences:

1. Click the **Setup** button.
2. Click **Monitor Preferences**.
3. Click **Trading Display**.

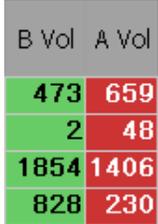
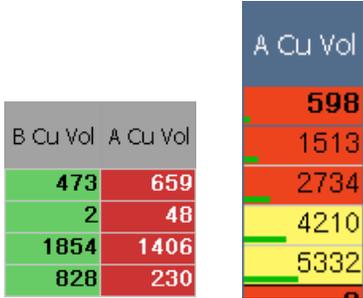
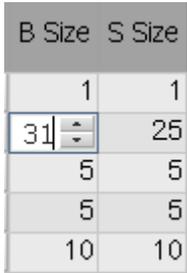
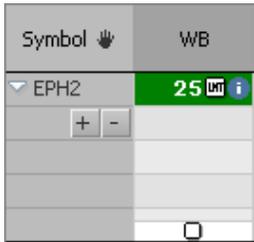
Column Descriptions

Hover the mouse over the header to see the full name of the column.

Double-click any price or volume cell to open the default trading application.

Control the color of the Bid, Ask, B Vol, A Vol, B Cu Vol, and A Cu Vol columns using the Child Row coloring visual parameter.

Column	Image	Description
Bid Ask		<p>Current best bid. Current best ask.</p> <p>The parent row shows the best bid and best ask. Child rows, not seen in this image, show depth-of-market prices. Child rows are also referred to as DOM rows.</p> <p>Click this cell and type a new value to change the price for an order. You can also use the up and down arrows.</p> <p>Light green = best bid and below (buy side)</p> <p>Light yellow = best bid and below (sell side); best ask and above (buy side)</p> <p>Light red = best ask and above (sell side)</p> <p>Right-click the cell to return to best bid or best ask.</p> <p>Hovering the cursor over these cells displays a message with the symbol, best bid, best ask, last trade, and volume. When there is no last trade, settlement data is used instead.</p> <p>High (green) and low (red) indicators are represented as lines at the top of the price cell.</p> <p>If a price is equal to the average fill price, the cell is colored according to buy/sell colors set in preferences.</p> <p>Conditional Coloring visual parameters apply.</p>

Column	Image	Description
B Vol A Vol		<p>Current bid volume. Current ask volume.</p> <p>Conditional Coloring visual parameters apply.</p>
B Cu Vol A Cu Vol		<p>Bid cumulative volume. Ask cumulative volume.</p> <p>Shows the cumulative volume from current price level to the best.</p> <p>Total volume calculations are stopped after the last available volume.</p> <p>Conditional Coloring, Histogram, and Heatmap visual parameters apply. The image on the right includes a histogram and heatmap coloring.</p>
Buy Sell		<p>If fast-click is enabled, then these cells contain Buy LMT and Sell LMT buttons.</p> <p>Click a cell to place an order at the limit price displayed in the corresponding bid or ask cell.</p> <p>Press the Ctrl button as you click the button to change limit to stop.</p>
B Size S Size		<p>Buy size. Sell size.</p> <p>Click the cell to cycle through default sizes.</p> <p>To type a new value, click the cell and start typing. You can also use the up and down arrows.</p> <p>Right-click the size columns to reset the value to the default.</p>
WB WA		<p>Working orders below market. Working orders above market..</p> <p>The first image shows the parent row with the working order and child rows (DOM rows). The square indicates an order that is out of view.</p> <p>The second image shows stacked orders. Double-click the information icon to see order details.</p> <p>When DOM rows are visible, working</p>

Column	Image	Description
		<p>orders move from row to row as prices change.</p> <p>When DOM rows are hidden, the parent row reflects the sum of all working orders.</p>
WB(F) WA(F)		<p>Working orders below market (filled quantity). Working orders above market (filled quantity).</p> <p>Similar to WB and WA, these cells show working order information. Additionally, the filled portion of the order is displayed in parentheses.</p>
OTE P/L OTE & P/L		<p>Double-click any of these cells to open the Orders and Positions window.</p> <p>Positive value cells are green; negative value cells are red.</p> <p>Conditional Coloring and Histogram parameters apply.</p>
Position		<p>If there is no position, this cell is empty.</p> <p>Right-click this cell to liquidate or reverse the position or to open Notifications preferences.</p> <p>Double-click this cell to open the Orders and Positions window.</p> <p>Long position cells use the buy color setting; short position cells use the sell color setting.</p> <p>Conditional Coloring parameters apply.</p>

If you are not enabled for trading on the Spreadsheet Trader, hovering the cursor over a cell displays the note "Information is not available (not permitted)."

DOM Data Rows

Each row on the Spreadsheet Trader can be expanded to show depth-of-market (DOM) data. Click the arrow to the left of the symbol to expand the row. You can also use these keyboard shortcuts:

expand = Ctrl + >

collapse = Shift + Ctrl + <

Sym...	Price	PriceNC	Bid	B Vol	B Cu Vol	Ask	A Vol	A Cu Vol	Buy	B Size	WB(F)
▼ EPH2	135725 B	-275	135325		12774	135775	639	639	Buy LMT	25	25
+ -			135725	859	944	135800	1111	1750	Buy LMT		
			135700	1193	2137	135825	1031	2781	Buy LMT		
			135675	1328	3465	135850	1451	4232	Buy LMT		
			135650	1996	5461	135875	1565	5797	Buy LMT		

→ DOM Data

↓
Indicates working order further down DOM ladder

When you expand the row, four rows are exposed. To expose additional rows, click the plus button. Click the minus button to hide rows. You can also use keyboard shortcuts:

plus = Ctrl + >

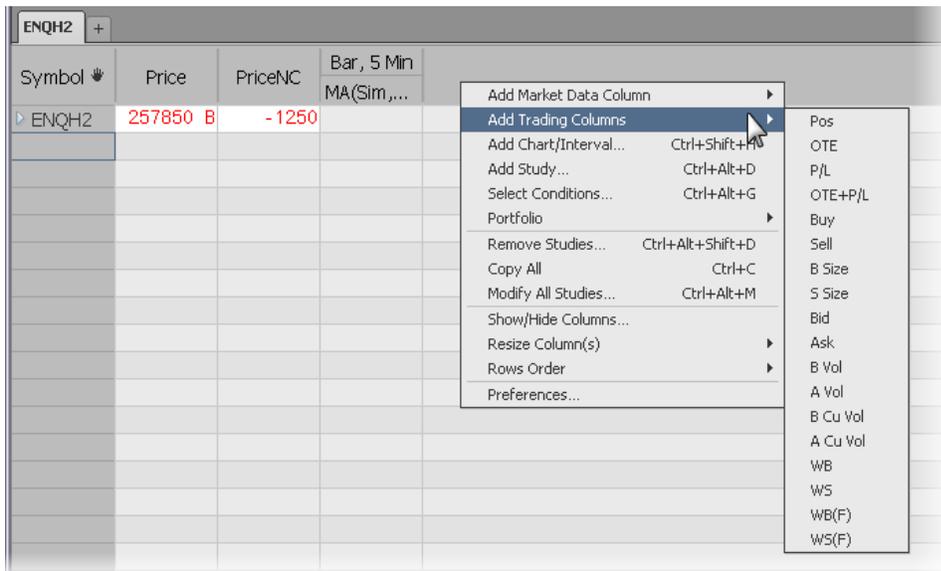
minus = Ctrl + <

Separate visual parameters are available for DOM rows. Note that visual parameters applied to a child row have higher priority than parameters applied to a parent row.

Adding, Moving, and Removing Trading Columns on the Spreadsheet Trader

To add a column

Right-click, point to **Add Trading Columns**, then click the column you want to add.



To remove a column

Select the column and press the **Delete** key. You can also right-click and then click **Remove**.

To move a column

Click and drag the column. When a rectangle appears in the upper-left of the destination column(see image), release the mouse button to drop the column in the new location.

A Vol	A Cu Vol
449	449
30	30
13	13
2	2
2096	2096

Trading columns can be placed between chart, study, and condition columns. If the view is pivoted, then trading columns that are between chart columns are moved to the left. For illustration purposes, this image shows Bid, Ask, Ask Volume, and Bid Volume columns between chart columns.

Symbol	Price	PriceNC	Bar, 5 Min MA(Sim,21)...	Bid	Bar, 5 Min MA(Sim,21)...	Ask	CndL, 60 MA(Sim,21)...	Ask Volume	CndL, WW MA(Sim,21)...	Bid Volume	Line, Daily MA(Sim,21)...
EPH2	136775 B	-675	136860.71	136775	136860.71	136800	137271.43	747	127352.38	135	135553.57
ENQH2	263850 A	-475	264091.67	263825	264091.67	263850	264321.43	25	238472.62	19	258180.95

When the view is pivoted, so that columns are organized by study, those columns are moved to the left:

EPH2, ENQH2, HOEJ2...											
Symbol	Price	PriceNC	Bid	Ask	Ask Volume	Bid Volume	MA(Sim,21):Moving Average				
							Bar, 5 Min	Bar, 5 Min	Cndl, 60	Cndl, WW	Line, Daily
EPH2	136775 B	-675	136775	136800	762	122	136860.71	136860.71	137271.43	127352.38	135553.57
ENQH2	263825 B	-500	263825	263850	22	22	264091.67	264091.67	264321.43	238472.62	258180.95

To select an account on the Spreadsheet Trader

To change accounts, press F11 or right-click the title bar and then click **Select Account**.

You can have a different account on each tab. Note that if the Spreadsheet Trader is linked as a child to a master window, changing the account in the master window changes it in the Spreadsheet Trader.

Placing Orders on the Spreadsheet Trader

To place a limit order

- Click the **Buy LMT** or **Sell LMT** button.
- Drag a price to the buy or sell column or one of the working orders columns. [Note that order type is impacted by distance from market and limits and stops preferences.]
- Right-click one of the bid volume columns to place a sell order. Right-click one of the ask volume columns to place a buy order.

To place a stop order

- Right-click the **Buy LMT** or **Sell LMT** button.
- Press **Ctrl** on your keyboard as you click the **Buy STP** or **Sell STP** button.
- Press **Ctrl** on your keyboard as you drag a price to the buy or sell column or one of the working orders columns. [Note that order type is impacted by distance from market and limits and stops preferences.]

To place a sweep order

A sweep order has a quantity totaling the aggregated depth quantity. Sweep orders are placed by clicking a dragging a volume column cell to either the buy or sell column or a working orders column.



Sweep orders must be enabled in preferences.

To modify and cancel orders on the Spreadsheet Trader

To modify size

1. Click the order.
2. Type a new size. The new size is shown in the order list:



3. Enter to apply the new size.
4. Click the x button to close the order list.

To change the size of an order in a stack, double-click the information icon to open the stacked order list. Then, click the existing size and type a new one.

To modify price

1. Expand the row, so that DOM rows are displayed.
2. Click and drag the order to the desired price.



3. Release the mouse.

To change the price of an order in a stack, double-click the information icon to open the stacked order list. Then, drag the order to a new price. If the price is hidden by the stacked order list, drag and drop the window in a new location.

To cancel an order

Right-click an order to cancel it. You can also click and drag the order off of the grid.

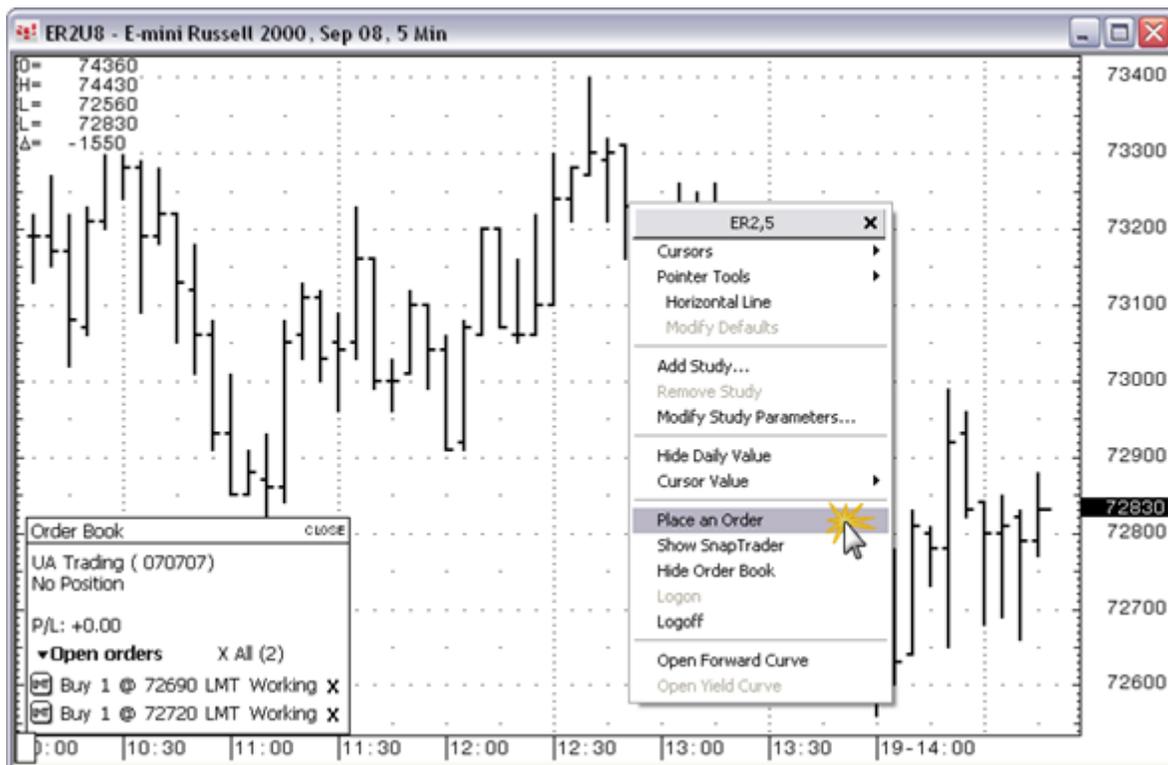
If you right-click a stacked order, all orders are cancelled. To cancel a single order in a stack, double-click the information icon to open an order details window, then click the x button to delete the order.

Trading on a Chart

CQG offers the convenience of trading from a chart. You can add the [SnapTrader](#) tool to the chart and trade directly from it, or you can [open a trading application](#) from the chart to trade alongside the chart display.

To open a trading application from the chart

Right-click the chart, and select **Place an Order**. Your preferred trading application, which is selected in **System Preferences**, will open.



The Order Book

The Order Book displays your account, position, OTE & P/L, and open orders.

Order Book	CLOSE
UA Trading (070707) Long 21 @ 128750	Order Book
P/L: +600750.00	UA Trading (070707)
OTE+P/L: 23625.00	No Position
No open orders X All (0)	P/L: +0.00
	▼Open orders X All (2)
	<input type="checkbox"/> Buy 1 @ 72690 LMT Working X <input type="checkbox"/> Buy 1 @ 72720 LMT Working X

To display the Order Book on a chart, right-click the chart, and select **Show Order Book**.

To cancel orders from the Order Book

To cancel all orders, click the **XAll** button.

Order Book	CLOSE
UA Trading (070707) No Position	
P/L: +0.00	
▼Open orders	X All (2)
<input type="checkbox"/> Buy 1 @ 72690 LMT Working X <input type="checkbox"/> Buy 1 @ 72720 LMT Working X	

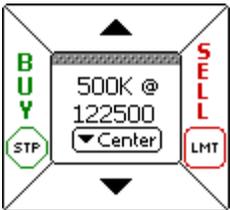
To cancel a single order, click the **X** button near the order details.

Trading on a Chart with SnapTrader

SnapTrader is an easy-to-use, chart-based trading tool. SnapTrader opens with market orders selected and displays the current bid and ask, like this:



This picture shows the SnapTrader centered, that is, displaying the current bid and ask. If the SnapTrader is currently displaying a price other than the current bid and ask, it includes the Center button, like this:



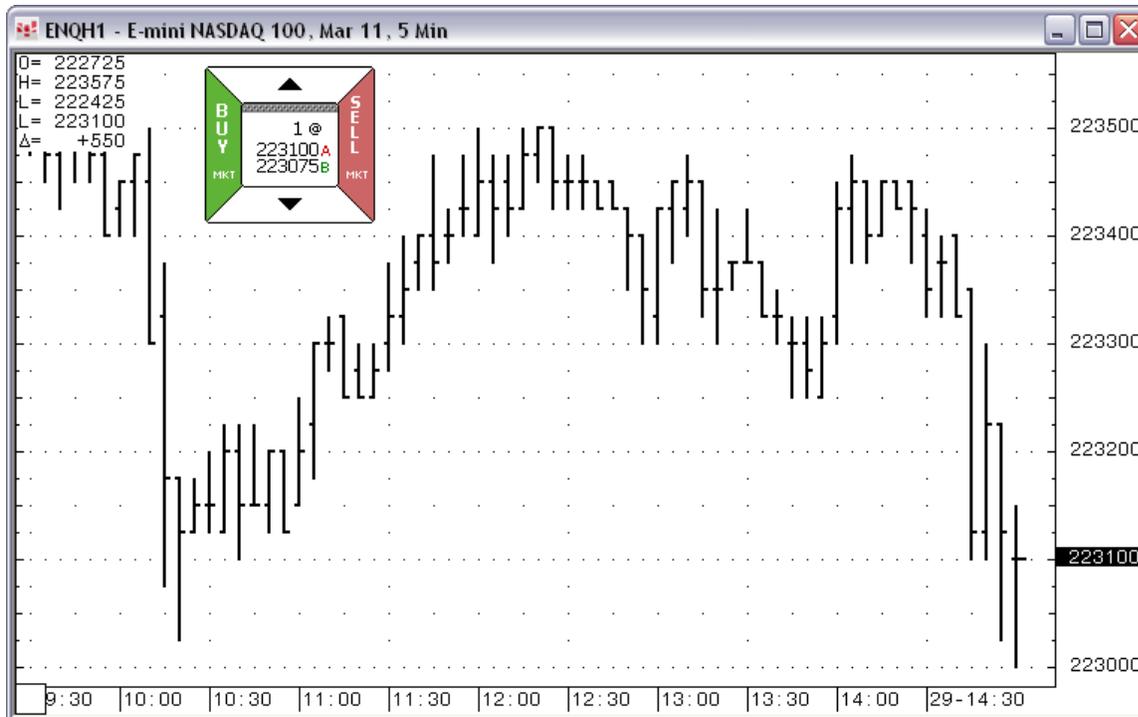
You can move SnapTrader to another location on the chart by dragging the gray, dotted bar that is below the black up arrow.

SnapTrader supports variable tick size data received from exchanges.

Note: If you open SnapTrader and no other trading application is open, then the system uses the account last used with SnapTrader. If you open SnapTrader and another trading application is open, then the system uses the account from the open trading application. This behavior is standard among all trading applications.

To open SnapTrader

To open SnapTrader, click the **SnapTrader** button on the chart toolbar. The SnapTrader will be displayed on the chart like this:



You can also right-click on the chart and select **Show SnapTrader**.

To add the **SnapTrader** button to the chart toolbar:

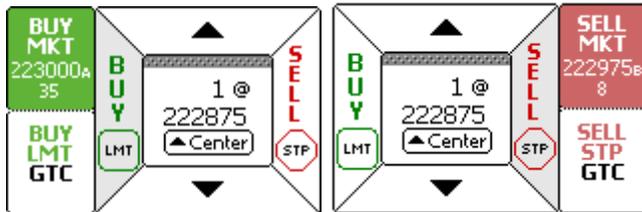
1. Click the **Setup** button.
2. Select **Customize Toolbar**. This displays the Toolbar Manager window.
3. Click the >>> button in the **Add/Remove** column in the **Chart Control** row.
4. Click **SnapTrader** in the button column.
5. Click the **Close** buttons on the Customize Application Toolbar and Toolbar Manager windows.

If you do not have a chart open, click the **Trade** button on the main toolbar, and then click **SnapTrader**.

To place a market order



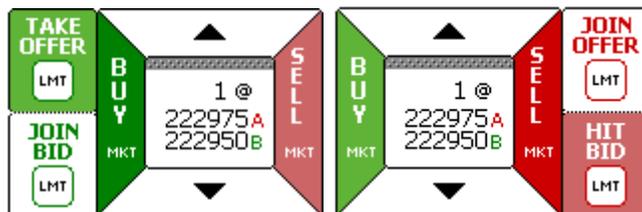
You can also place a market order by hovering the mouse over the **Buy** or **Sell** button and clicking the **MKT** button when you're in stop or limit mode.



To place a limit day order

In market mode (centered)

Hover the mouse over the **Buy** or **Sell** button to display limit order options, and click one of the take, join, or hit buttons.



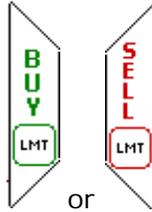
JOIN OFFER = limit at ask

JOIN BID = limit at ask

HIT BID = limit at bid

LIFT OFFER = limit at bid

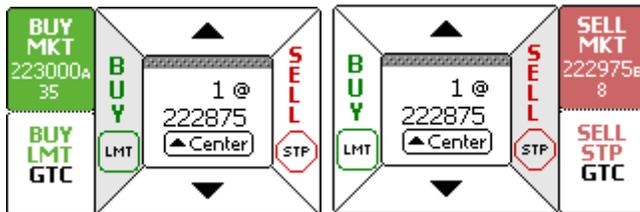
In limit mode (not centered)



Go to the desired limit price, and click

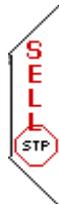
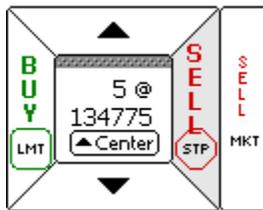
To place a limit GTC order

Go to the desired limit price, hover the mouse over the **Buy** or **Sell** button, and click the **GTC** button.



To place a stop order

Click the black arrows up or down to establish a stop price. The **Buy** and **Sell** buttons change accordingly, like this sell button:



Click the appropriate stop button, such as

If the price is below the current best bid, the buy side will be a limit order and the sell side will be a stop order. If the price line is above the current best offer, then the buy side will be a stop order and the sell side will be a limit order.

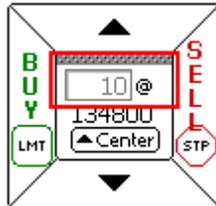
When you click the arrows, a horizontal price line on the chart moves with them. The price on SnapTrader corresponds to the price indicated by that line.

To return to current best bid and ask

Click the  button.

To change the quantity

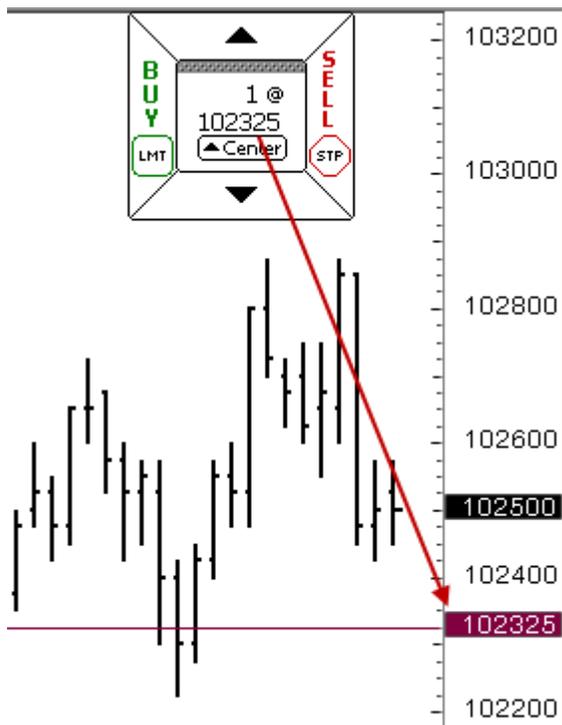
1. Click the quantity field. Notice that the field becomes active:



2. Enter the new size for the order.

To change the limit price

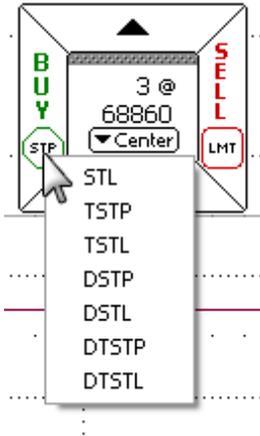
Add a horizontal line at the price you want to trade, like this:



Once you place an order at that price, the SnapTrader re-centers.

To change the stop or limit type

Right-click the **LMT** or **STP** button, then click the type.



To set SnapTrader trading preferences

Setting preferences for SnapTrader trading is the same as it is [for other trading applications](#).

Trading on a Chart with Studies

You can enter an order based on study values, a Study Following Order, directly from the chart.

A Study Following Order is a DAY limit, stop, stop limit, DOM-triggered stop, DOM-triggered stop limit, or iceberg order that follows the corresponding study value. OCO and bracket orders are allowed. Trailing and parked orders are not valid.

You can place an order at the value or as an offset. The system automatically modifies the order price based on the study; it will continue to do so when partially filled.

If a study has a custom session, the study following order will be cancelled automatically when the session ends.

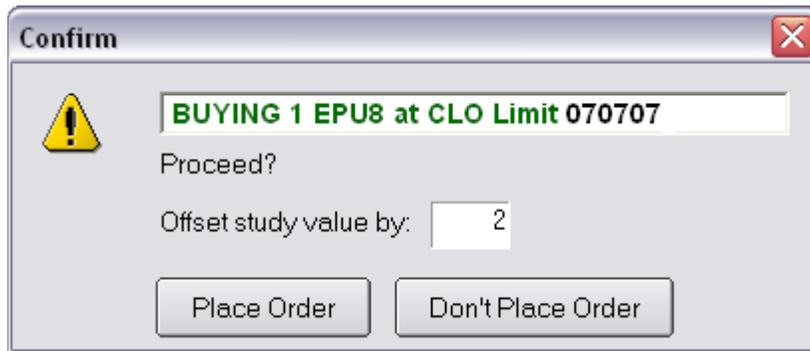
Placing these orders requires an enablement. The order book or Snap Trader must be displayed to activate the place order menu option.

To place an order

1. Right-click the price label for the study, and click **Place order following [study] curve value**.
2. Click the type of order you wish to place.



If you choose an order type that includes an offset, you will be prompted to enter the offset value:



Study Following Orders will be displayed in the Order Book, like this:



Trading with Alerts

If you use CQG's Advanced Trading package, then the Actions window in Action Preferences will have an additional option: **Place Orders**. Trading System alerts do not have this option.

In order to place these alert-triggered market orders:

- You must be logged on to trade.
- The account must be an active trading account.
- Either the DOMTrader, Order Ticket, Simple Order Ticket, Orders and Positions window, or Chart Trader must be open.
- The order must be turned on.
- The alert must be turned on.

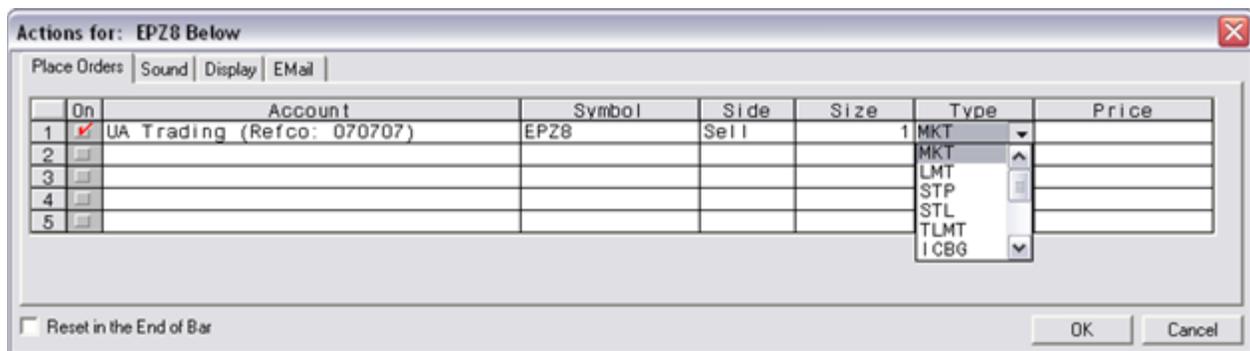
Opening the Alerts Window

Click the **Alerts** button on the toolbar to open the Alerts window.

If the button is not displayed, click the **More** button, and then click **Alert**.

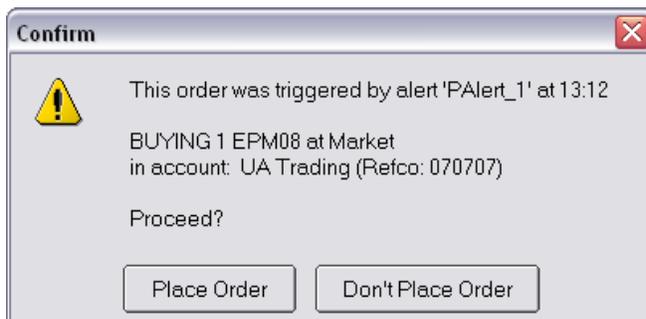
For details about how to set alerts, please see CQG Basics Help.

Placing Orders



1. Select an account from the **Account** list. The most recently active symbol is displayed.
2. To change the symbol, type a new one.
3. From the **Side** list, choose **Buy**, **Sell**, **Liquidate**, **Cancel**, **Park All**, or **Activate All**. **Park** suspends working orders, and **Activate** restores them to their working state.
4. Type an order quantity.
5. Choose an order type.
6. Enter a price if necessary.
7. Select the **Reset in the End of Bar** check box to automatically reset the alert at the end of the bar.
8. Click **OK**.

If the order is triggered and if your system is set to receive confirmations, then you will receive a message like this, which lets you know the order was placed because of a particular alert:



If you do not receive confirmations, then you will receive a fill report as soon as the market order is filled.

Trading with QSS and EQSS

You can trade futures, options, FIT, FX contracts, and strategies on the Quote SpreadSheet (QSS) and Enhanced Quote SpreadSheet (EQSS).

Orders are displayed on the DOMTrader and on the Orders and Positions window.

Opening QSS and EQSS

Click the **Trade** button on the main toolbar, and then click **Spreadsheet Trader** to open the QSS for trading.

You can also click the **Quotes** button and then either **Quote SpreadSheet** or **Enhanced Quote SpreadSheet**.

Enabling Trading Mode

You must be in trading mode in order to display trading column values on the QSS or EQSS and to place orders. To see if trading mode is turned on, right-click anywhere on the QSS or EQSS. If trading mode is on, it will be checked, like this:

Place an Order
 Trading mode

The system employs the last-used trading mode for an individual QSS or EQSS:

- When CQG IC restarts.
- When you log back on to the trading gateway.
- When you go to a page containing the Quote Spreadsheet or Enhanced Quote Spreadsheet.

For example: QSS A, QSS C, and QSS D are in trading mode. QSS B is not. CQG IC restarts. QSS A, QSS C, and QSS D remain in trading mode, while QSS B remains not in trading mode.

To turn trading mode on and off

There are several ways to turn the trading mode on and off:

- Click the **Trade** button.
- Right-click the **Trade** button and then click **Logon** or **Logoff**.
- Right-click on the QSS and select **Trading mode**.

Please note the following **Trade** button behavior:

Are you logged on to trade?	Are you in trading mode?	Click the Trade button to...
no	no	log on and turn on trading mode
yes	no	turn on trading mode
yes	yes	turn off trading mode

Creating a Spreadsheet to Place Orders

To trade from a QSS or EQSS, you need to add the trading columns to the display.

These columns include: Market Direction, Order Size, Buy Market, Sell Market, Working Buy, Working Sell, Filled Buy Orders, Filled Sell Orders, Open Position, OTE, and Incomplete. Market Data columns – including Bid, Ask, Last Bid, Last Ask, Volume Last Bid, and Volume Last Ask – are also used for trading.

For example:

	Symbol	Dir	Size	Buy	WKGB	FillB	Sell	WKGS	Fills	INCP LT	Pos	OTE
1	EPU0	▼	1	MKT	20	2	MKT	1	2		0	0
2	SPREAD(0.5*EPU0-0.2*ENQU0)	▼	1	MKT	5	1	MKT	2			0	0
3	AGGR(TYAU0&ZNEU0)	▲	1	MKT	10	1	MKT	5			1	(15+)

Column	Heading	Description
Market Direction	Dir	Displays up or down arrow based on the last best bid or best ask price change. If last quote is a best bid and it less than the previous best bid before the price change, then the market direction is down. If it's bigger than the previous best bid before the price change, then the market direction is up. If the last quote is a best ask, then the market direction shall be defined by ask quotes. Displays market direction only for the time that the QSS window was open and the Dir column was displayed.
Order Size	Size	Displays the order quantity that will be used for placing orders. The initial value is taken from your Trading Preferences.
Buy Market	Buy	Displays MKT. For FIT contracts, displays TAKE.
Sell Market	Sell	Displays MKT. For FIT contracts, displays HIT.
Working Buy Orders	WKGB	Displays the sum of the volume of unfilled buy orders for the selected symbol and account.
Working Sell Orders	WKGS	Displays the sum of the volume of unfilled sell orders for the selected symbol and account.
Filled Buy Orders	FillB	Sum of volume of filled buy orders for selected symbol and account.
Filled Sell Orders	Fills	Sum of volume of filled sell orders for selected symbol and account.

Column	Heading	Description
Open Position	Pos	<p>Displays the open position for the selected symbol and account. A flat open position is displayed as an empty cell.</p> <p>If the Show combined net position for relative commodities check box is selected in Trading Preferences, then this field displays the combined net position. "Net:" will precede the value.</p> <p>If the Show synthetic position for spread check box is selected in Trading Preferences, then this field will display the grouped spread position for the spread contract.</p> <p>If the open position includes manual fills, then this field displays "M" after the value.</p>
Open Trade Equity	OTE OTE+P/L	<p>Displays the value for the selected symbol and account based on OTE Trading Preferences. Negative values are represented with parentheses. If OTE is not a whole number, then it is rounded down and a plus sign will follow it, such as 226+.</p> <p>If the Show combined net position for relative commodities check box is selected in Trading Preferences, then this field displays the value for the combined net position. "Net:" will precede the value.</p> <p>If the Show synthetic position for spread check box is selected in Trading Preferences, then this field will display the value for the grouped spread position for the spread contract.</p> <p>If the open position includes manual fills, then this field displays "M" after the value.</p>
Incomplete	INCPLT	<p>For spread trading. Displays sum of volume of incomplete orders for selected symbol and account. This field blinks when an incomplete order occurs.</p>

To add trading columns to the QSS

1. Right-click the QSS.
2. Click **Customize Columns**. The **Select Current Values** window opens.
3. Select **Orders and Positions** from the drop-down menu to filter the list of available fields.
4. Add columns from the list on the left to the list on the right using the **Add** button.
5. Use the arrows to move columns up and down.
6. Click **OK**.

To add trading columns to the EQSS

1. Select a cell and right-click.
2. Point to **Edit Cell** and then click **Contents**. The **Select Current Values** window opens.
3. Select Orders and Positions from the drop-down menu to filter the list of available fields.
4. Click the field name.
5. To add additional fields, click **Apply** between each addition.
6. Click **OK**.

To change the color of trading columns

1. Click the **Setup** button.
2. Click Quote SpreadSheet Colors or EQSS Colors.
3. In the **Color Element** field, scroll down to **Trading colors**.
4. Click on the text or background that you wish to change. The color palette opens.
5. Click the desired color.

Buy/Bid Text: applies to Buy cell

Buy/Bid Background: applies to Buy cell

Sell/Ask Text: applies to Sell cell

Sell/Ask Background: applies to Sell cell

Long/MktUp Text: applies to WKGB, long position, positive OTE, and up market direction

Long/MktUp Background: applies to WKGB, long position, positive OTE, and up market direction

Short/MktDown Text: applies to WKGS, short position, negative OTE, and down market direction

Short/MktDown Background: applies to WKGS, short position, negative OTE, and down market direction

Size Text: applies to Size cell

Size Background: applies to Size cell

Zero Position/OTE Text: applies to Position equal to zero and OTE cells

Volume Last Bid and Volume Last Ask columns will echo these colors if Enable Sweep Mode is turned on. (**Setup > Trading Preferences > Display > Enable Sweep Mode**).

To change the name of the window

1. Right-click on the title bar.
2. Click *Rename Window*.
3. Enter a new name in the **To** field.
4. Click **OK**.

Setting Trading Preferences for QSS and EQSS

Setting preferences for spreadsheet trading is the same as it is [for other trading applications](#). Some preferences are more relevant to QSS and EQSS trading:

- [Displaying and calculating OTE](#)
- [Confirming order actions](#)
- [Setting default order quantity](#)

Placing and Managing Orders on the QSS and EQSS

You can place orders directly on the QSS or EQSS or by launching a trading interface from the spreadsheet.

To change the order size

There are two ways to change the order size:

- Click the **Size** field and then enter a new order quantity using your keyboard or mouse wheel.
- Click the **Size** field and then right-click to increase the quantity and left-click to decrease the quantity (down to 1).

Right-clicking increases the quantity according to your order quantity settings. For example, if your custom order size buttons are 1, 5, 10, 20, 50, and 100, then right-clicking will increase the quantity from 1 to 5 to 20 to 50 to 100 and then by one hundred for each click. If the last custom value is 500, then each right-click after that value will increase by 500.

(Setup > Trading Preferences > Risk > Order quantities for all symbols).

To place a market order



Click the **MKT** button in the **Buy** or **Sell** cell. A Day order will be placed according to these parameters:

For FIT contracts:

Buy: aggressive buy at best ask

Sell: aggressive sell at best bid

For all other contracts:

Buy: market buy

Sell: market sell

If [confirmation messages](#) are turned off, then double-clicking on a cell will create two orders.

To place a limit order

Bid	Ask
145200	145225
190275	190300
11003	11004
108235	108240

Click the **Bid** or **Ask** cell. A DAY order will be placed according to these parameters:

For FIT contracts:

Ask: passive sell at best ask or last ask cell

Bid: passive buy at best bid or last bid cell

For all other contracts:

Ask: limit sell at best ask or last ask cell

Bid: limit buy at best bid or last bid cell

If [confirmation messages](#) are turned off, then double-clicking a cell will create two orders.

To place an order at best price

If [enable sweep mode](#) is selected, then you can also place orders by right-clicking a cell.

Right-click the **VolumeLastBid** or **VolumeLastAsk** cell. A DAY order will be placed according to these parameters:

For FIT contracts:

VolumeLastAsk: passive buy at best ask with volume last ask quantity

VolumeLastBid: passive sell at best bid with volume last bid quantity

For all other contracts:

VolumeLastAsk: Limit Buy at Best Ask with VolumeLastAsk quantity

VolumeLastBid: Limit Sell at Best Bid with VolumeLastBid quantity

Right-click the **Bid**, **Last Bid**, **Ask**, or **Last Ask** column. A DAY order will be placed according to these parameters:

For FIT contracts:

Ask or Last Ask: passive buy at best ask

Bid or Last Bid: passive sell at best bid

For all other contracts:

Ask or Last Ask: limit buy at best ask

Bid or Last Bid: limit sell at best bid

To enter synthetic spreads

Here's an example of a QSS used to trade spreads.

	Symbol	Last	Buy	Sell	Pos	Size	WKGB	WKGS	Dir	FillB	FillS	INCLPT
1	SPREAD(0.5*EPZ9-0.2*ENQZ9)	19325 ^b	MKT	MKT	0	1	5	10				
2	SPREAD(CLEZ9-ETZ9, L1, , 1:1)	-2 ^b	MKT	MKT	0	1	60		▼	20	5	
3	SPREAD(1.6*TYAZ9-USAZ9, , , 5:3)	70200 ^a	MKT	MKT	(27)	1	5				26	
4	SPREAD(1.5*FVAZ9-TYAZ9, , , 3:2)	56170 ^a	MKT	MKT	0	1	2	10		5		
5	SPREAD(1.6*FVAZ9-USAZ9, , , 5:3)	67070 ^a	MKT	MKT	(8)	1					11	
6	SPREAD(42*HOEZ9-CLEZ9, L2)	649 ^b	MKT	MKT	0	1			▼		2	
7												

The Quote SpreadSheet (QSS) includes an **INCLPT** (incomplete) field to enhance the Orders and Positions QSS for spread trading. It blinks when an incomplete order occurs.

If you would like to see synthetic spread positions in the **Pos** field, make sure that option is selected in Trading Preferences.

Even if you are not trading directly from it, the QSS is a helpful tool for managing incomplete orders. Link the QSS to the DOMTrader (or the trading application you're using making sure the QSS is the parent window. If an incomplete order occurs, click the **INCLPT** field on the QSS to go directly to the DOMTrader for the leg that's incomplete.

The image displays four screenshots of the Quote SpreadSheet (QSS) interface:

- Top Left:** A window titled "Quote SS: PSpread201" showing a list of spreads with columns for Symbol and INCLPT. The INCLPT field for the first spread is highlighted in red.
- Top Middle:** A window titled "PSpread201 - 0.4*..." showing a detailed view of a spread with columns for Price, Buy, Sell, and Pos. The Pos field is highlighted in red.
- Top Right (Left):** A window titled "PSpread201 - F.U..." showing a DOMTrader view for the EPZ9 leg, with columns for Price, Bid, Ask, and Volume.
- Top Right (Right):** A window titled "PSpread201 - F.U..." showing a DOMTrader view for the EPHO leg, with columns for Price, Bid, Ask, and Volume.

To place an order using a trading interface

1. Right-click the symbol, bid, ask, direction, buy, sell, working buy, working sell, OTE, Volume Last Bid, or Volume Last Ask column.
2. Click **Place an Order**. The DOMTrader, Order Ticket, or Simple Order Ticket opens, based on your setting in System Preferences (**Setup > System Preferences > Misc > Preferred Order Entry Display**).
3. Use the DOMTrader or Order Ticket as usual to place the order.

To open the Orders & Positions window

Click the **Pos**, **WKGB**, or **WKGS** cell. The Orders & Positions window opens.

If a window is already open, then it will be filtered by the selected symbol and account and the Open Position Summary will be displayed.

To liquidate a position

1. Right-click the **Pos** cell.
2. Click **Liquidate this Position**. A confirmation message will be displayed if your preferences indicate so.
3. Click **Liquidate**.

To reverse a position

1. Right-click the **Pos** cell.
2. Click **Reverse this Position**. A confirmation message will be displayed if your preferences indicate so.
3. Click **Reverse**.

To cancel an order

1. Right-click the working order cell. A confirmation message will be displayed if your preferences indicate so.
2. Click **Yes**.

To cancel all orders

Click the **Cancel All** button on the toolbar.

Right-click the **Cancel All** button to select the account, side, and symbol to cancel:



To change the account

Right-click the title bar of the Quote SpreadSheet and Enhanced Quote SpreadSheet to open Account Picker.

When you change the account on the QSS or EQSS, the account is changed in grouped and linked child trading windows.

Please note that you must be in trading mode.

Trading with Spread Matrix and Spread Pyramid

Use the Spread Matrix and Spread Pyramid to place orders for exchange-traded and synthetic intercommodity and intracommodity spreads.

For calendar spreads and spreads with multipliers, use the Spread Matrix. For additional spread strategies, butterfly and condor, use the Spread Pyramid.

Outrights		Calendars				Butterflies				Condors							
H09	98747 B (605)	98750 A (842)	S3H09	-10 B (605)	-5 B (33)	-1 A (9)	0 A (247)	L3H09	-55 B (33)	-51 B (7)	-50 A (48)	-47 A (2)	H09-M09-U09+H10	-255 B (33)	Buy	Sell	-247 A (9)
M09	98750 B (247)	98755 A (1037)	S3M09	40 B (247)	45 B (2)	50 A (7945)	50 A (215)	M09-2*U09+H10	-205 B (2)	Buy	Sell	-195 A (416)	M09-U09-H10+M10	-150 B (2)	Buy	Sell	-140 A (5689)
U09	98705 B (215)	98710 A (1081)	S6U09	245 B (215)	245 B (416)	250 A (180)	255 A (1081)	U09-2*H10+M10	50 B (416)	Buy	Sell	60 A (180)	U09-H10-M10+U10	30 B (416)	Buy	Sell	40 A (1)
H10	98455 B (1083)	98460 A (697)	S3H10	185 B (1083)	190 B (5689)	195 A (22351)	195 A (1)	L3H10	-25 B (5689)	-20 B (1272)	-15 A (809)	-15 A (1)	C3H10	-50 B (5273)	Buy	Sell	-40 A (233)
M10	98265 B (1)	98270 A (1506)	S3M10	210 B (1)	210 B (1)	215 A (24146)	220 A (1267)	L3M10	-30 B (1)	-30 B (756)	-25 A (139)	-20 A (233)	C3M10	35 B (2)	Buy	Sell	45 A (428)
U10	98050 B (1267)	98055 A (5)	S3U10	230 B (49)	235 B (233)	240 A (5273)	240 A (5)	L3U10	60 B (233)	60 B (626)	65 A (50)	70 A (448)	C3U10	35 B (211)	Buy	Sell	45 A (5273)
Z10	97815 B (99)	97820 A (49)	S3Z10	185 B (99)	170 B (448)	175 A (2915)	175 A (1)	L3Z10	-30 B (211)	-30 B (336)	-25 A (423)	-20 A (2915)	C3Z10	-25 B (448)	Buy	Sell	-15 A (10)
H11	97645 B (1)	97650 A (329)	S3H11	195 B (1)	195 B (6994)	200 A (211)	205 A (56)	L3H11	0 B (3654)	5 B (1209)	10 A (10)	10 A (10)	C3H11	5 B (65)	Buy	Sell	15 A (211)
M11	97445 B (56)	97450 A (15)	S3M11	185 B (27)	190 B (10)	195 A (3654)	195 A (15)	L3M11	0 B (10)	0 B (1566)	5 A (1401)	10 A (2975)					
U11	97255 B (20)	97260 A (27)	S3U11	180 B (20)	185 B (2975)	190 A (65)	195 A (27)										
Z11	97065 B (69)	97075 A (145)															

Trading on the Spread Matrix and Spread Pyramid is part of our Advanced Trading Package.

Opening the Spread Matrix and Spread Pyramid

Click the **Quote** button, and then click the spread window name.

If the **Quote** button is not on the toolbar, click the **More** button and then click **Quotes**.

Enabling Trading Mode

You must be in trading mode in order to display buy and sell buttons, quantity buttons, and the Account Picker on the Spread Matrix and Spread Pyramid and to place orders.

The system employs the last-used trading mode for an individual matrix or pyramid:

1. When CQG IC restarts.
2. When you log back on to the trading gateway.
3. When you go to a page containing the matrix or pyramid.

For example: Spread Matrix A, Spread Matrix C, and Spread Matrix D are in trading mode. Spread Matrix B is not. CQG IC restarts. Spread Matrix A, Spread Matrix C, and Spread Matrix D remain in trading mode, while Spread Matrix B remains not in trading mode.

To turn trading mode on and off

To turn trading mode on and off:

- Click the **Trade** button.
- Right-click the **Trade** button and then click **Logon** or **Logoff**.

Please note the following **Trade** button behavior:

Are you logged on to trade?	Are you in trading mode?	Click the Trade button to...
no	no	log on and turn on trading mode
yes	no	turn on trading mode
yes	yes	turn off trading mode

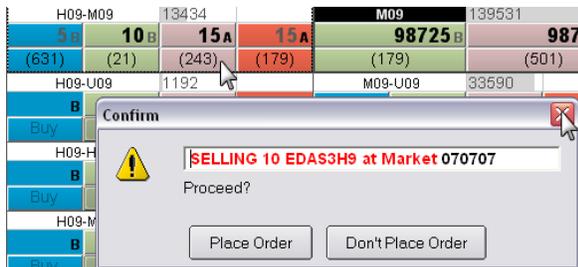
Setting Trading Preferences for Spread Matrix and Spread Pyramid

[Trading preferences](#) are the same for all trading interfaces.

Placing and Managing Orders on the Spread Matrix and Spread Pyramid

You can place orders directly on the Spread Matrix and Spread Pyramid or by opening a trading application from the matrix or pyramid.

To place a market order



1. Select the account you want to trade for.
2. Choose the order size by clicking a quantity button or by typing a number in the **Size** box.
3. If applicable, select the trade ratio.
4. Select which legs to work: all, most liquid, or least liquid.
5. Choose the order type for completing the spread: market or limit.
6. Click a buy or sell button for the strategy and spread you wish you trade.
7. If you have notifications turned on, then you must confirm the order placement.

You can also right-click the cell and click **Place an Order**. The order entry application that opens depends on your System Preferences.

To place a limit order



1. Select the account you want to trade for.
2. Choose the order size by clicking a quantity button or by typing a number in the **Size** box.
3. If applicable, select the trade ratio.
4. Select which legs to work: all, most liquid, or least liquid.
5. Choose the order type for completing the spread: market or limit.
6. Click the bid or ask price button for the strategy and spread you wish to trade.
7. If you have notifications turned on, you must confirm the order placement.

You can also right-click the cell and click **Place an Order**. The order entry application that opens depends on your System Preferences.

To place an order using a trading interface

1. Right-click a cell on the matrix or pyramid.
2. Click **Place an Order**. The DOMTrader, Order Ticket, or Simple Order Ticket opens, based on your setting in System Preferences (**Setup > System Preferences > Misc > Preferred Order Entry Display**).
3. Use the DOMTrader or Order Ticket as usual to place the order.

To cancel all orders

Click the **Cancel All** button on the toolbar.

Right-click the **Cancel All** button to select the account, side, and symbol to cancel.

Supporting Documentation

CQG's [Customer Education](#) Web page provides additional documentation:

Tradable Symbols

<http://www.cqg.com/Docs/Symbols.pdf>

Order Types Supported by Each Exchange

<http://www.cqg.com/Docs/OrderTypeMatrix.pdf>

Entering Exchange-Traded Spreads

<http://www.cqg.com/Docs/SpreadSymbols.pdf>

The Scope of Exchange-Traded Spreads

<http://www.cqg.com/Docs/ScopeOfExchangeTradedSpreads.pdf>

Optimizing Your CQG Experience

<http://www.cqg.com/Docs/optimizecqgletter.pdf>

CQG Integrated Client Options User Guide

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About this Document

This document is one of several user guides for CQG Integrated Client (CQG IC). This guide details options-specific tools in CQG.

You can navigate the document in several ways:

- Click a bookmark listed on the left of the page.
- Click an item in the Table of Contents.
- Click a blue, underlined link that takes you to another section of the document. To go back, use Adobe Reader Page Navigation items (**View** menu).

If you are looking for a particular term, it may be easier for you to search the document for it. There are two ways to do that:

- Right-click the page, and then click **Find**.
- Press Ctrl+F on your keyboard.

This document is intended to be printed double-sided, so it includes blank pages before new chapters.

Please note that images are examples only and are meant to demonstrate and expose system behavior. They do not represent actual situations.

To ensure that you have the most recent copy of this guide, please [go to the user guide page on CQG's website](#).

Related Documents

CQG IC user guides:

- [CQG Basics](#)
- [Charting and Studies](#)
- [Advanced Analytics](#)
- [Trading](#) and [CQG Spreader](#)

Customer Support

CQG Customer Support can be reached by phone from Sunday, 2:30 p.m. CT through Friday, 5:00 p.m. CT. These hours also apply to Live Chat.

United States	1-800-525-1085
United Kingdom	+44 (0) 20-7827-8270
France	+33 (0) 1-74-18-07-81
Germany	+49 (0) 69-6677-7558-0
Japan	+81 (0) 3-3286-6877
Russia	+7 495-795-2409
Singapore	+65 6494-4911
Sydney	+61 (2) 9235-2009

E-mail websupt@cqg.com 24 hours a day, 7 days a week.

If you have questions about CQG documentation, please [contact the help author](#).

Options in CQG

CQG IC includes five options applications:

- [Options Window](#)
- [Options Calculator](#)
- [Options Graph](#)
- [Volatility Workshop](#)
- [Strategy Analysis](#)

All CQG IC users have access to the Options Window and the Options Graph. If you would like to learn more about our advanced options offering, which includes Options Calculator, Options Strategy, and Volatility Workshop, [please contact CQG](#).

CQG offers seven basic option models that serve as the framework for valuing options: Black, Black-Scholes, Bourtov, Cox-Ross-Rubinstein, Garman-Kohlhagen, Merton, and Whaley.

Entering Options Symbols

The format for options on futures is: C.<symbol><month code><year><strike price> for calls and or P.<symbol><month code><year><strike price> for puts.

The strike price is 2-5 digits.

Example: C.SPZ081500 = December 2008 1500 call on the S&P 500 futures contract.

An alternate format is C.<symbol>_<month code><year>.<strike price> for calls and with P. for puts.

C.SP_U8.1500 = September 2008 1500 call on the S&P 500 futures contract.

On Options windows, you can enter the symbol only.

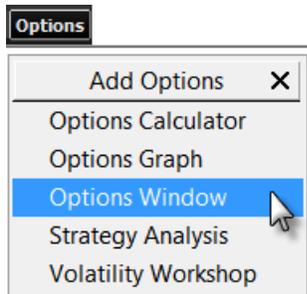
For at the money for the nearby month, type C. or P., the symbol, and ?.

For at the money for some other month, type **C.** or **P.**, the symbol, the month, the year, and ? and then press **CTRL+ENTER**.

For strikes for the most active month, type **C.** or **P.** and the symbol and ? and then press **CTRL+ENTER**.

Opening Options Applications

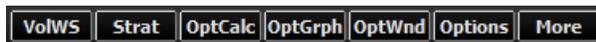
Click the **Options** button on the main toolbar, and then click the name of the options window you want to open:



This button provides access to all options windows without having to display the button for each window.

If the **Options** button is not displayed, click the **More** button, and then click **Options**.

You can also add individual options windows to the toolbar:



CQG API and Options

CQGs API supports efficient access to options strike properties through the use of the CQGINstrumentsGroup interface.

With one request to CQG servers, your application can subscribe to all strikes in any given contract month or a range of months.

Data subscription levels can also be configured to optimize instrument resolution for strike properties and market data, allowing for the delivery of critical information without unnecessary overhead.

CQG also offers access to common real-time values for all subscribed options strikes: Greeks, theoretical values and implied volatilities.

Through the API, CQG offers in-depth portfolio analysis capabilities.

Greeks and Volatility Definitions

As you work with options in COG IC, it's helpful to understand how implied and average volatility are calculated and how the Greeks are defined.

Delta

Delta shows the change in the price of a derivative to the change in the price of the underlying assets. Sometimes delta is known as the "hedge ratio," as delta indicates how much of the underlying asset needs to be bought or sold to hedge the option. Traders take advantage of delta by creating delta hedging, delta spreads, and delta neutral.

Delta values are positive numbers less than or equal to 100. They represent the ratio of the change in the theoretical value over the change in the underlying price.

Values:

Out of the money = close to 0

At the money = close to +0.5

In the money = close to +1

Calls = positive

Puts = negative

Delta values for the out-of-the-money series move closer to 0 as expiration nears. Likewise, more in-the-money options have deltas close to 1 as expiration approaches.

For example: If the underlying S&P 500 contract stands at 134020, with a delta of 52.73, and a theoretical value of 2600.5, and the underlying price increases to 134220, while the delta rises to 54.02, the theoretical value increases to 2707.

The calculations are:

$$134220 - 134020 = 200$$

$$(52.73 + 54.02)/2 = 106.750$$

$$53.375 * 2 = 106.750$$

The deltas from one underlying price to the next are interpolated.

$$106.750 + 2600.5 = 2707.25 \text{ new theoretical value}$$

Gamma

Gamma is the amount the delta changes when the underlying price changes by one tick.

Gamma is greatest for at-the-money options. Gamma increases as the option moves closer to expiration. Traders try to limit gamma risk because short gamma positions create a potential for losses.

For example: If the delta of an S&P future was 91.80, the gamma was .01 and the price of an S&P future increased from 1340.80 to 1340.90 i.e., a one-tick increase, the delta would increase to 91.81.

Theta

Theta represents the loss in theoretical value in one day, if all other factors are constant. In other words, it attempts to isolate the time decay factor.

For example: Assume the amount showing the Value column was 2725.1, with 15 days until expiration and a theta value of 92.053. You would expect to see the amount in the Value column decrease approximately 92 dollars the following day. A more precise definition of the amount of the time value lost is an average of the Thetas on the dates under consideration. So, if the theta on the following day was 95.201, the decrease in theoretical value would be:

$$(92.053 + 95.201)/2 = 93.6$$

Vega

Vega is the amount that the theoretical value changes when the volatility changes by 1 point.

For example: Assume a June Corn contract had a vega of 1.421, a volatility of 25.90, and a theoretical value of 45.4. If the volatility were to increase to 26.90, the vega says that the theoretical value would increase by 1.4 dollars to 46.8, provided the other factors affecting options prices remained constant.

The display also indicates the days until expiration, as well as the volatility and interest rate assumptions underlying the data.

Rho

Rho is the change in option price to a unit change in interest rates. When the interest rate increases, the call option price increases also and put option price falls.

For example: Assume the starting call value is 4.2012, the interest rate r is 5% and zero-coupon rate b is 2%. $Rho(r)$ (per 1%) = 0.1243, and $Rho(b)$ (per 1%) = 0.1328. If r rises to 6% and b stays at 5%, the call value is 4.3255. If r stays at 5% and b rises to 3%, the call value is 4.334.

Implied Volatility

The implied volatility calculated from an options display represents the volatility that, if entered into a theoretical pricing model, would produce a theoretical value equal to the market price of the option. Unlike the Historical Volatility study, the Implied Volatility calculation depends on the model selected, the calculation method chosen and the parameters input in the What if? column.

Average Volatility

The average volatility is calculated using the following formula:

$$AvgV = \frac{IV_L(SP_H - UP) + IV_H(UP - SP_L)}{(SP_H - SP_L)}$$

Standard Options Pricing Models

Options pricing models describe mathematically how a set of input parameters – typically underlying price, strike price, time to expiration, interest rate, and volatility – combine to determine a theoretical value of an option.

CQG offers seven basic option models that serve as the framework for valuing options: Black, Black-Scholes, Bourtov, Cox-Ross-Rubinstein, Garman-Kohlhagen, Merton, and Whaley.

Term	Definition
TheoV	option theoretic value
sigma, σ	volatility of the relative price change of the underlying stock price
ImpV	implied volatility
Greeks	Partial derivatives of the option price to a small movement in the underlying variables. Main greeks are delta, gamma, theta, vega, rho.
Delta, Δ	delta is the first derivative of the option price by underlying price
Gamma, Γ	gamma is the second derivative of the option price by underlying price
Vega	vega is the first derivative of the option price by volatility
Theta, Θ	theta is the first derivative of the option price by time to expiration
Rho, ρ	rho is the first derivative of the option price by interest rate
N(x)	the cumulative normal distribution function $N(x) = \frac{1}{\sqrt{2 \cdot \pi}} \int_{-\infty}^x e^{-\frac{z^2}{2}} dz$
n(x)	normal distribution function $n(x) = \frac{1}{\sqrt{2 \cdot \pi}} e^{-\frac{x^2}{2}}, \quad n'(x) = -x \frac{1}{\sqrt{2 \cdot \pi}} e^{-\frac{x^2}{2}}$
S	underlying price
X	strike price of option
r	risk-free interest rate
T	option time to expiration in years

Term	Definition
σ	volatility of the relative price change of the underlying instrument
b	the cost-of-carry rate of holding the underlying security

For further reading, we suggest:

- [The Complete Guide to Option Pricing Formulas](#). ISBN 0071389970.
- [Options, Futures, and Other Derivatives](#). ISBN 0132164949.
- [Option Volatility and Pricing Strategies](#). ISBN155738486X.

Black Model

In 1976, Fisher Black developed a modification to the Black-Scholes model designed to price options on futures more precisely. The model assumes that futures can be treated the same way as securities, providing a continuous dividend yield equal to the risk-free interest rate.

The model provides a good correction to the original model concerning options on futures. However, it still carries the restrictions of the Black-Scholes evaluation.

Notation

C Theoretical value of a call

P Theoretical value of a put

U Underlying price

E Strike price

r Interest rate

t Time to expiration in years

v Volatility

$N(x)$ Cumulative normal density function

The theoretical values for calls and puts are:

$$C = Ue^{-rt}N(h) - Ee^{-rt}N(h - v\sqrt{t})$$

$$P = -Ue^{-rt}N(-h) + Ee^{-rt}N(v\sqrt{t} - h)$$

Where:

$$h = \frac{\ln(U/E)}{v\sqrt{t}} + \frac{v\sqrt{t}}{2}$$

Note: Although similar, this definition of h is different from the one used in the Black-Scholes model.

An alternative form for h is:

$$h = \frac{2\ln(U/E) + v^2t}{2v\sqrt{t}}$$

Generalized Black-Scholes (Black-Scholes extended) Model

The generalized Black-Scholes model can be used to price European options on stocks without dividends [Black and Scholes (1973) model], stocks paying a continuous dividend yield [Merton (1973) model], options on futures [Black (1976) model], and currency options [Garman and Kohlhagen (1983) model].

TheoV

Call

$$c = C_{\text{GBS}} = S \cdot e^{(b-r)T} \cdot N(d_1) - X \cdot e^{-rT} \cdot N(d_2)$$

Put

$$p = P_{\text{GBS}} = X \cdot e^{-rT} \cdot N(-d_2) - S \cdot e^{(b-r)T} \cdot N(-d_1)$$

where

$$d_1 = \frac{\ln(S/X) + (b + \sigma^2/2) \cdot T}{\sigma \cdot \sqrt{T}}$$

$$d_2 = d_1 - \sigma \cdot \sqrt{T}$$

$N(x)$ – the cumulative normal distribution function;

S – underlying price;

X – strike price of option;

r – risk-free interest rate;

T – time to expiration in years;

σ – volatility of the relative price change of the underlying stock price.

b – the cost-of-carry rate of holding the underlying security.

$b = r$ gives the Black and Scholes (1973) stock option model.

$b = r - q$ gives the Merton (1973) stock option model with continuous dividend yield q .

$b = 0$ gives the Black (1976) futures option model.

$b = r - r_f$ gives the Garman and Kohlhagen (1983) currency option model (r_f - risk-free rate of the foreign currency).

Delta

Call

$$\Delta = e^{(b-r)T} N(d_1)$$

Put

$$\Delta = e^{(b-r)T} [N(d_1) - 1]$$

Gamma

Gamma is identical for put and call options.

$$\Gamma = \frac{n(d_1) \cdot e^{(b-r)T}}{S \cdot \sigma \cdot \sqrt{T}}$$

where

$$n(x) = \frac{1}{\sqrt{2 \cdot \pi}} e^{-\frac{x^2}{2}} \quad \text{- normal distribution function.}$$

Vega

Vega is identical for put and call options.

$$Vega = S \cdot e^{(b-r)T} n(d_1) \cdot \sqrt{T}$$

Theta

Call

$$\Theta = \frac{S \cdot e^{(b-r)T} \cdot n(d_1) \cdot \sigma}{2\sqrt{T}} + (b-r) \cdot S \cdot e^{(b-r)T} \cdot N(d_1) + r \cdot X \cdot e^{-rT} N(d_2)$$

Put

$$\Theta = \frac{S \cdot e^{(b-r)T} \cdot n(d_1) \cdot \sigma}{2\sqrt{T}} - (b-r) \cdot S \cdot e^{(b-r)T} \cdot N(-d_1) - r \cdot X \cdot e^{-rT} N(-d_2)$$

Rho

Call

$$\rho = \begin{cases} T \cdot X \cdot e^{-rT} \cdot N(d_2), & \text{when } b < 0 \\ -T \cdot c & \text{when } b = 0 \end{cases}$$

where

c – call TheoV

Put

$$\rho = \begin{cases} -T \cdot X \cdot e^{-rT} \cdot N(-d_2), & \text{when } b < 0 \\ -T \cdot p & \text{when } b = 0 \end{cases}$$

where

p – put TheoV

Implied volatility

To find implied volatility the following equations should be solved for the value of sigma:

Call

$$c = S \cdot e^{(b-r)T} \cdot N(d_1) - X \cdot e^{-rT} \cdot N(d_2)$$

Put

$$p = X \cdot e^{-rT} \cdot N(-d_2) - S \cdot e^{(b-r)T} \cdot N(-d_1)$$

where

$$d_1 = \frac{\ln(S/X) + (b - \sigma^2/2) \cdot T}{\sigma \cdot \sqrt{T}}$$

$$d_2 = d_1 - \sigma \cdot \sqrt{T}$$

This equation has no closed form solution, which means the equation must be numerically solved to find σ .

Bourtoev's Model

Bourtoev's model is based on the Black-Scholes model. It defines a special method to calculate volatility, which is an input parameter of the Pricing Model Calculator.

Cox-Ross-Rubinstein Model

The Cox-Ross-Rubinstein binomial model can be used to price European and American options on stocks without dividends, stocks and stock indexes paying a continuous dividend yield, futures, and currency options.

TheoV

The main binomial model assumption is the underlying price can either increase by a fixed amount u with probability p , or decrease by a fixed amount d with probability $1-p$. So the underlying price at each node is set equal to

$$S \cdot u^i \cdot d^{j-i}, i = 0, 1, \dots, j$$

where

S – underlying price;

u, d – up and down jump sizes that underlying price can take at each time step.

Option pricing is done by working backwards, starting at the terminal date. Here we know all the possible values of the underlying price. For each of these, we calculate the payoffs from the derivative, and find what the set of possible derivative prices is one period before. Given these, we can find the option one period before this again, and so on. Working ones way down to the root of the tree, the option price is found as the derivative price in the first node.

Call

At expiration date:

$$f_{i,n} = \max(S \cdot u^i \cdot d^{n-i} - X, 0), i = 0, 1, \dots, n$$

where n – number of time steps.

At each previous step:

European exercise

$$f_{i,j} = e^{-r \cdot \Delta t} \cdot [p \cdot f_{i+1,j+1} + (1-p) \cdot f_{i,j+1}]$$

American exercise

$$f_{i,j} = \max(S \cdot u^i \cdot d^{j-i} - X, e^{-r \cdot \Delta t} \cdot [p \cdot f_{i+1,j+1} + (1-p) \cdot f_{i,j+1}])$$

where

$u = e^{\sigma \sqrt{\Delta t}}$ – price up movement size;

$d = e^{-\sigma \sqrt{\Delta t}} = 1/u$ – price down movement size;

$\Delta t = T/n$ – size of each time step;

$p = \frac{e^{b \cdot \Delta t} - d}{u - d}$ – up movement probability;

b – the cost-of-carry, defined as:

$b = r$ to price European and American options on stocks;

$b = r - q$ to price European and American options on stocks and stock indexes paying a continuous dividend yield q ;

$b = 0$ to price European and American options on futures;

$b = r - r_f$ to price European and American currency options (r_f – risk-free rate of the foreign currency).

Put

At expiration date:

$$p_{i,n} = \max(X - S \cdot u^i \cdot d^{n-i}, 0), \quad i = 0, 1, \dots, n$$

At each previous step:

European exercise

$$f_{i,j} = e^{-r \cdot \Delta t} \cdot [p \cdot f_{i+1,j+1} + (1-p) \cdot f_{i,j+1}]$$

American exercise

$$f_{i,j} = \max(X - S \cdot u^i \cdot d^{j-i}, e^{-r \cdot \Delta t} \cdot [p \cdot f_{i+1,j+1} + (1-p) \cdot f_{i,j+1}])$$

Delta

Given the $f_{i,j}$ values calculated for the price, Delta approximation is

$$\Delta = \frac{\Delta f}{\Delta S} = \frac{f_{1,1} - f_{1,0}}{S \cdot u - S \cdot d}$$

Gamma

Gamma approximation is

$$\gamma = \frac{\partial^2 f}{\partial S^2} = \frac{[(f_{2,2} - f_{2,1}) / (S \cdot u^2 - S \cdot u \cdot d)] - [(f_{2,1} - f_{2,0}) / (S \cdot u \cdot d - S \cdot d^2)]}{0.5 \cdot (S \cdot u^2 - S \cdot d^2)}$$

Theta

Theta can be approximated as

$$\theta = \frac{f_{2,0} - f_{0,0}}{2 \cdot \Delta t}$$

Vega, Rho

System uses the numerical differentiation to calculate the Greeks.

Implied volatility

System numerically finds implied volatility.

Garman-Kohlhagen Model

This model, developed to evaluate currency options, considers foreign currencies analogous to a stock providing a known dividend yield. The owner of foreign currency receives a “dividend yield” equal to the risk-free interest rate available in that foreign currency. The model assumes price follows the same stochastic process presumed in the Black-Scholes model.

This model is used to evaluate options written on currencies. The interest rate of the native currency is used as the default, but you can set the foreign interest rate in [Model preferences](#).

This model corrects the difference between native and foreign interest rates. However, as a modification of Black-Scholes model, it possesses all its limitations.

Notation

C	Theoretical value of a call
P	Theoretical value of a put
U	Underlying price
E	Strike price
r	Interest rate
r_f	Interest rate in the foreign country
t	Time to expiration in years
v	Volatility

The European_call price is given by:

$$C = Ue^{-r_f t} N(h) - Ee^{-rt} N(h - v\sqrt{t})$$

Where:

$$h = \frac{\ln(U/E) + (r - r_f + v^2/2)t}{v\sqrt{t}}$$

The European put price is given by:

$$P = -Ue^{-r_f t} N(-h) + Ee^{-rt} N(v\sqrt{t} - h)$$

Merton Model

In 1973, Merton produced a model with a non-constant interest rate. He assumed that interest rates follow a special type of random process.

By taking into consideration the dynamic process of interest rate determination, and the correlation between the underlying price and the options price, this model provides an improvement over the Black-Scholes model. This model is generally used to value European options written on stocks.

Notation

C	Theoretical value of a call
P	Theoretical value of a put
U	Underlying price
E	Strike price
t	Time to expiration in years
$N(x)$	Cumulative normal density function
v	Volatility
v_p	Volatility of an interest rate contract
$R(t)$	Interest rate
ρ	Correlation between the underlying and interest rate contracts

The theoretical values for European calls and puts are:

$$C = UN(h) - B(t)EN(h - \mathcal{G}\sqrt{t})$$

$$P = -UN(-h) + B(t)EN(\mathcal{G}\sqrt{t} - h)$$

Where:

$$h = \frac{\ln(U/X) - \ln B(t) + \mathcal{G}(t)/2}{\mathcal{G}\sqrt{t}}$$

$$\mathcal{G}(t) = \int_0^t (v^2 + v_p^2 - 2\rho vv_p) dt$$

$$B(t) = e^{-R(t)t}$$

Whaley Model

The quadratic approximation method by Baron-Adesi and Whaley (1987) can be used to price American options.

TheoV

Call

$$c = \begin{cases} C_{GBS}(S, X, T, r, b, \sigma) & \text{when } b = r \text{ (options on stocks)} \\ C_{GBS}(S, X, T, r, b, \sigma) + A_2 \cdot (S / S^*)^{q_2} & \text{when } S < S^* \\ S - X & \text{when } S \geq S^* \end{cases}$$

where

b – the cost-of-carry rate;

$b = r$ to price options on stocks.

$b = r - q$ to price options on stocks and stock indexes paying a continuous dividend yield q

$b = 0$ to price options on futures.

$b = r - r_f$ to price currency options (r_f – risk-free rate of the foreign currency).

C_{GBS} – the generalized Black-Scholes call TheoV expression;

$$A_2 = \frac{S^*}{q_2} \left[1 - e^{(b-r)T} \cdot N(d_1(S^*)) \right]$$

$$d_1(S) = \frac{\ln(S/X) + (b + \sigma^2/2) \cdot T}{\sigma \sqrt{T}}$$

$$q_2 = \frac{-(N-1) + \sqrt{(N-1)^2 + 4 \cdot M/K}}{2}$$

$$M = 2r / \sigma^2$$

$$N = 2b / \sigma^2$$

$$K = 1 - e^{-rT}$$

S^* – the critical commodity price for the call option that satisfies

$$S^* - X = C_{GBS}(S^*, X, T, r, b, \sigma) + \frac{S^*}{q_2} \left[1 - e^{(b-r)T} \cdot N(d_1(S^*)) \right]$$

The last equation should be numerically solved to find S^* .

Put

$$p = \begin{cases} P_{GBS}(S, X, T, r, b, \sigma) + A_1 \cdot (S / S^{**})^{q_1} & \text{when } S > S^{**} \\ X - S & \text{when } S \leq S^{**} \end{cases}$$

where

P_{GBS} – the generalized Black-Scholes put TheorV expression;

$$A_1 = -\frac{S^{**}}{q_1} \left[1 - e^{(b-r)T} \cdot N(-d_1(S^{**})) \right]$$

$$q_1 = \frac{-(N-1) - \sqrt{(N-1)^2 + 4 \cdot M / K}}{2}$$

S^{**} – the critical commodity price for the put option that satisfies

$$X - S^{**} = P_{GBS}(S^{**}, X, T, r, b, \sigma) - \frac{S^{**}}{q_1} \left[1 - e^{(b-r)T} \cdot N(-d_1(S^{**})) \right]$$

The last equation should be numerically solved to find S^{**} .

Delta

Call

$$\Delta = \begin{cases} \Delta_{GBS}(S, X, T, r, b, \sigma) & \text{when } b = r \text{ (options on stocks)} \\ \Delta_{GBS}(S, X, T, r, b, \sigma) + A_2 \cdot q_2 \cdot S^{q_2-1} / (S^*)^{q_2} & \text{when } S < S^* \\ 1 & \text{when } S \geq S^* \end{cases}$$

where

Δ_{GBS} - the generalized Black-Scholes call Δ expression.

Put

$$\Delta = \begin{cases} \Delta_{GBS}(S, X, T, r, b, \sigma) + A_1 \cdot q_1 \cdot S^{q_1-1} / (S^{**})^{q_1} & \text{when } S > S^{**} \\ -1 & \text{when } S \leq S^{**} \end{cases}$$

where

Δ_{GBS} - the generalized Black-Scholes put Δ expression.

Gamma

Call

$$\Gamma = \begin{cases} \Gamma_{GBS}(S, X, T, r, b, \sigma) & \text{when } b = r \text{ (options on stoks)} \\ \Gamma_{GBS}(S, X, T, r, b, \sigma) + A_2 \cdot q_2 \cdot (q_2 - 1) \cdot S^{q_2 - 2} / (S^*)^{q_2} & \text{when } S < S^* \\ 0 & \text{when } S \geq S^* \end{cases}$$

Put

$$\Gamma = \begin{cases} \Gamma_{GBS}(S, X, T, r, b, \sigma) + A_1 \cdot q_1 \cdot (q_1 - 1) \cdot S^{q_1 - 2} / (S^{**})^{q_1} & \text{when } S > S^{**} \\ 0 & \text{when } S \leq S^{**} \end{cases}$$

Vega

Call

$$Vega = \begin{cases} Vega_{GBS}(S, X, T, r, b, \sigma) & \text{when } b = r \text{ (options on stoks)} \\ \text{Numerical differentiation} & \text{when } S < S^* \\ 0 & \text{when } S \geq S^* \end{cases}$$

Put

$$Vega = \begin{cases} \text{Numerical differentiation} & \text{when } S > S^{**} \\ 0 & \text{when } S \leq S^{**} \end{cases}$$

Theta

Call

$$\Theta = \begin{cases} \Theta_{GBS}(S, X, T, r, b, \sigma) & \text{when } b = r \text{ (options on stoks)} \\ \text{Numerical differentiation} & \text{when } S < S^* \\ 0 & \text{when } S \geq S^* \end{cases}$$

where

 Θ_{GBS} - the generalized Black-Scholes call Θ expression.

Put

$$\Theta = \begin{cases} \text{Numerical differentiation} & \text{when } S > S^{**} \\ 0 & \text{when } S \leq S^{**} \end{cases}$$

where

 Θ_{GBS} - the generalized Black-Scholes put Θ expression.

Rho

Call

$$\rho = \begin{cases} \rho_{GBS}(S, X, T, r, b, \sigma) & \text{when } b = r \text{ (options on stocks)} \\ \text{Numerical differentiation} & \text{when } S < S^* \\ 0 & \text{when } S \geq S^* \end{cases}$$

where

 ρ_{GBS} - the generalized Black-Scholes call ρ expression.

Put

$$\rho = \begin{cases} \text{Numerical differentiation} & \text{when } S > S^{**} \\ 0 & \text{when } S \leq S^{**} \end{cases}$$

where

 ρ_{GBS} - the generalized Black-Scholes put ρ expression.**Implied volatility**

System numerically finds implied volatility.

Implied volatility can't be calculated for call option if option value is less than (underlying price - strike).

Implied volatility can't be calculated for put option if option value is less than (strike - underlying).

Exotic Option Models

For further reading, we suggest:

- [The Complete Guide to Option Pricing Formulas](#). ISBN 0071389970.
- [Barrier Options](#), [Binary/Digital Options](#), and [Lookback Options](#) at www.global-derivatives.com.

Standard (Vanilla) Barrier

There are two kinds of the barrier options:

- In = Paid for today but first come into existence if the underlying price hits the barrier H before expiration.
- Out = Similar to standard options except that the option is knocked out or becomes worthless if the underlying price hits the barrier before expiration.

TheoV

In Barriers

Down-and-in call

$$c(X \geq H) = C + E \quad \eta = 1, \phi = 1$$

$$c(X < H) = A - B + D + E \quad \eta = 1, \phi = 1$$

Up-and-in call

$$c(X \geq H) = A + E \quad \eta = -1, \phi = 1$$

$$c(X < H) = B - C + D + E \quad \eta = -1, \phi = 1$$

Down-and-in put

$$p(X \geq H) = B - C + D + E \quad \eta = 1, \phi = -1$$

$$p(X < H) = A + E \quad \eta = 1, \phi = -1$$

Up-and-in put

$$p(X \geq H) = A - B + D + E \quad \eta = -1, \phi = -1$$

$$p(X < H) = C + E \quad \eta = -1, \phi = -1$$

Out Barriers

Down-and-out call

$$c(X \geq H) = A - C + F \quad \eta = 1, \phi = 1$$

$$c(X < H) = B - D + F \quad \eta = 1, \phi = 1$$

Up-and-out call

$$c(X \geq H) = F \quad \eta = -1, \phi = 1$$

$$c(X < H) = A - B + C - D + F \quad \eta = -1, \phi = 1$$

Down-and-out put

$$p(X \geq H) = A - B + C - D + F \quad \eta = 1, \phi = -1$$

$$p(X < H) = F \quad \eta = 1, \phi = -1$$

Up-and-out put

$$p(X \geq H) = B - D + F \quad \eta = -1, \phi = -1$$

$$p(X < H) = A - C + F \quad \eta = -1, \phi = -1$$

where

$$A = \phi \cdot S \cdot e^{(b-r)T} \cdot N(\phi \cdot x_1) - \phi \cdot X \cdot e^{-rT} \cdot N(\phi \cdot x_1 - \phi \cdot \sigma \cdot \sqrt{T})$$

$$B = \phi \cdot S \cdot e^{(b-r)T} \cdot N(\phi \cdot x_2) - \phi \cdot X \cdot e^{-rT} \cdot N(\phi \cdot x_2 - \phi \cdot \sigma \cdot \sqrt{T})$$

$$C = \phi \cdot S \cdot e^{(b-r)T} \cdot (H/S)^{2(\mu+1)} \cdot N(\eta \cdot y_1) - \phi \cdot X \cdot e^{-rT} \cdot (H/S)^{2\mu} \cdot N(\eta \cdot y_1 - \eta \cdot \sigma \cdot \sqrt{T})$$

$$D = \phi \cdot S \cdot e^{(b-r)T} \cdot (H/S)^{2(\mu+1)} \cdot N(\eta \cdot y_2) - \phi \cdot X \cdot e^{-rT} \cdot (H/S)^{2\mu} \cdot N(\eta \cdot y_2 - \eta \cdot \sigma \cdot \sqrt{T})$$

$$E = K \cdot e^{-rT} \cdot \left[N(\eta \cdot x_2 - \eta \cdot \sigma \cdot \sqrt{T}) - (H/S)^{2\mu} \cdot N(\eta \cdot y_2 - \eta \cdot \sigma \cdot \sqrt{T}) \right]$$

$$F = K \left[(H/S)^{\mu+\lambda} N(\eta \cdot z) + (H/S)^{\mu-\lambda} N(\eta \cdot z - 2 \cdot \eta \cdot \lambda \cdot \sigma \cdot \sqrt{T}) \right]$$

$$x_1 = \frac{\ln(S/X)}{\sigma \sqrt{T}} + (1 + \mu) \cdot \sigma \cdot \sqrt{T}$$

$$x_2 = \frac{\ln(S/H)}{\sigma \sqrt{T}} + (1 + \mu) \cdot \sigma \cdot \sqrt{T}$$

$$y_1 = \frac{\ln(H^2/(S \cdot X))}{\sigma \sqrt{T}} + (1 + \mu) \cdot \sigma \cdot \sqrt{T}$$

$$y_2 = \frac{\ln(H/S)}{\sigma \sqrt{T}} + (1 + \mu) \cdot \sigma \cdot \sqrt{T}$$

$$z = \frac{\ln(H/S)}{\sigma \sqrt{T}} + \lambda \cdot \sigma \cdot \sqrt{T}$$

$$\mu = \frac{b - \sigma^2/2}{\sigma^2}$$

$$\lambda = \sqrt{\mu^2 + \frac{2r}{\sigma^2}}$$

K – possible cash rebate,

b – the cost-of-carry.

b = r to price options on stocks.

b = r – q to price options on stocks and stock indexes paying a continuous dividend yield q

b = 0 to price options on futures.

b = r – rf to price currency options (rf – risk-free rate of the foreign currency).

Delta, Gamma, Vega, Theta, Rho

The system uses the numerical differentiation to calculate the Greeks.

Implied volatility

The software shall numerically find implied volatility.

Asset-or-Nothing Binary

At expiry, the asset-or-nothing call option pays 0 if $S \leq X$ and S if $S > X$. Similarly, a put option pays 0 if $S \geq X$ and S if $S < X$.

TheoV

Call

$$c = S \cdot e^{(b-r)T} \cdot N(d)$$

Put

$$p = S \cdot e^{(b-r)T} \cdot N(-d)$$

where

$$d = \frac{\ln(S/X) + \left(b + \frac{\sigma^2}{2}\right) \cdot T}{\sigma \cdot \sqrt{T}}$$

b – the cost-of-carry.

$b = r$ to price options on stocks.

$b = r - q$ to price options on stocks and stock indexes paying a continuous dividend yield q

$b = 0$ to price options on futures.

$b = r - rf$ to price currency options (rf – risk-free rate of the foreign currency).

Delta

$$\Delta_{call} = e^{(b-r)T} \left(N(d) + \frac{n(d)}{\sigma \sqrt{T}} \right)$$

$$\Delta_{put} = e^{(b-r)T} \left(N(-d) - \frac{n(-d)}{\sigma \sqrt{T}} \right)$$

Gamma

$$\Gamma_{call} = \frac{e^{(b-r)T} n(d) \left(1 - \frac{d}{\sigma \sqrt{T}}\right)}{S \sigma \sqrt{T}}$$

$$\Gamma_{put} = - \frac{e^{(b-r)T} n(-d) \left(1 - \frac{d}{\sigma \sqrt{T}}\right)}{S \sigma \sqrt{T}}$$

Vega

$$V_{call} = Se^{(b-r)T} n(d) \left(\frac{\sqrt{T}}{2} - \frac{\ln(S/X) + bT}{\sigma^2 \sqrt{T}} \right)$$

$$V_{put} = -Se^{(b-r)T} n(-d) \left(\frac{\sqrt{T}}{2} - \frac{\ln(S/X) + bT}{\sigma^2 \sqrt{T}} \right)$$

Theta

$$\Theta_{call} = S \cdot e^{(b-r)T} \left((b-r) \cdot N(d) + \frac{n(d)}{2\sigma\sqrt{T}} \left(\frac{-\ln(S/X)}{T} + \left(b + \frac{\sigma^2}{2} \right) \right) \right)$$

$$\Theta_{put} = S \cdot e^{(b-r)T} \left((b-r) \cdot N(-d) - \frac{n(-d)}{2\sigma\sqrt{T}} \left(\frac{-\ln(S/X)}{T} + \left(b + \frac{\sigma^2}{2} \right) \right) \right)$$

Rho

$$\rho_{call} = \frac{Se^{(b-r)T} n(d)T}{\sigma\sqrt{T}} \quad b \neq 0$$

$$\rho_{put} = -\frac{Se^{(b-r)T} n(-d)T}{\sigma\sqrt{T}} \quad b \neq 0$$

$$\rho_{call} = -STe^{-rT} N(d) \quad b = 0$$

$$\rho_{put} = -STe^{-rT} N(-d) \quad b = 0$$

Implied volatility

To find implied volatility the following equations should be solved for the value of sigma:

Call

$$c = S \cdot e^{(b-r)T} \cdot N(d)$$

Put

$$p = S \cdot e^{(b-r)T} \cdot N(-d)$$

System numerically solves these equations.

Floating Strike Lookback

The Lookback models are used to price European lookback options on stocks without dividends, stocks and stock indexes paying a continuous dividend yield and currency options.

A floating strike lookback call gives the holder of the option the right to buy the underlying security at the lowest price observed, S_{\min} , in the life of the option. Similarly, a floating strike lookback put gives the option holder the right to sell the underlying security at the highest price observed, S_{\max} , in the option's lifetime.

TheoV

Call

$$c = S \cdot e^{(b-r)T} \cdot N(a_1) - S_{\min} \cdot e^{-rT} \cdot N(a_2) + S \cdot e^{-rT} \frac{\sigma^2}{2b} \left[\left(\frac{S}{S_{\min}} \right)^{\frac{2b}{\sigma^2}} \cdot N\left(-a_1 + \frac{2b}{\sigma} \sqrt{T}\right) - e^{bT} \cdot N(-a_1) \right]$$

where

b – the cost-of-carry;

$b = r$ to price options on stocks;

$b = r - q$ to price options on stocks and stock indexes paying a continuous dividend yield q ;

$b = r - r_f$ to price currency options (r_f – risk-free rate of the foreign currency);

$$a_1 = \frac{\ln(S/S_{\min}) + (b + \sigma^2/2) \cdot T}{\sigma \sqrt{T}}$$

$$a_2 = a_1 - \sigma \sqrt{T}$$

Put

$$p = S_{\max} \cdot e^{-rT} \cdot N(-b_2) - S \cdot e^{(b-r)T} \cdot N(-b_1) + S \cdot e^{-rT} \frac{\sigma^2}{2b} \left[- \left(\frac{S}{S_{\max}} \right)^{\frac{2b}{\sigma^2}} \cdot N\left(b_1 - \frac{2b}{\sigma} \sqrt{T}\right) + e^{bT} \cdot N(b_1) \right]$$

where

$$b_1 = \frac{\ln(S/S_{\max}) + (b + \sigma^2/2) \cdot T}{\sigma \sqrt{T}}$$

$$b_2 = b_1 - \sigma \sqrt{T}$$

Delta, Gamma, Vega, Theta, Rho

The system uses the numerical differentiation to calculate the Greeks.

Implied volatility

The system uses numerically find implied volatility.

Fixed Strike Lookback

In a fixed strike lookback call, the strike is fixed in advance, and at expiry the option pays out the maximum of the difference between the highest observed price, S_{\max} , in the option lifetime and the strike X , and 0. Similarly, a put at expiry pays out the maximum observed price, S_{\min} , and 0.

TheoV

Call

when $X > S_{\max}$

$$c = S \cdot e^{(b-r)T} \cdot N(d_1) - X \cdot e^{-rT} \cdot N(d_2) + S \cdot e^{-rT} \frac{\sigma^2}{2b} \left[-\left(\frac{S}{X}\right)^{\frac{2b}{\sigma^2}} \cdot N\left(d_1 - \frac{2b}{\sigma}\sqrt{T}\right) + e^{bT} \cdot N(d_1) \right]$$

where

b – the cost-of-carry;

$b = r$ to price options on stocks;

$b = r - q$ to price options on stocks and stock indexes paying a continuous dividend yield q ;

$b = r - r_f$ to price currency options (r_f – risk-free rate of the foreign currency);

$$d_1 = \frac{\ln(S/X) + (b + \sigma^2/2) \cdot T}{\sigma\sqrt{T}}$$

$$d_2 = d_1 - \sigma\sqrt{T}$$

when $X \leq S_{\max}$

$$c = e^{-rT} (S_{\max} - X) + S \cdot e^{(b-r)T} \cdot N(e_1) - S_{\max} \cdot e^{-rT} \cdot N(e_2) + S \cdot e^{-rT} \frac{\sigma^2}{2b} \left[-\left(\frac{S}{S_{\max}}\right)^{\frac{2b}{\sigma^2}} \cdot N\left(e_1 - \frac{2b}{\sigma}\sqrt{T}\right) + e^{bT} \cdot N(e_1) \right]$$

where

$$e_1 = \frac{\ln(S/S_{\max}) + (b + \sigma^2/2) \cdot T}{\sigma\sqrt{T}}$$

$$e_2 = e_1 - \sigma\sqrt{T}$$

Put

when $X < S_{\min}$

$$p = X \cdot e^{-rT} \cdot N(-d_2) - S \cdot e^{(b-r)T} \cdot N(-d_1) + S \cdot e^{-rT} \frac{\sigma^2}{2b} \left[\left(\frac{S}{X}\right)^{\frac{2b}{\sigma^2}} \cdot N\left(-d_1 + \frac{2b}{\sigma}\sqrt{T}\right) - e^{bT} \cdot N(-d_1) \right]$$

when $X \geq S_{\min}$

$$p = e^{-rT}(X - S_{\min}) - S \cdot e^{(b-r)T} \cdot N(-f_1) + S_{\min} \cdot e^{-rT} \cdot N(-f_2) + S \cdot e^{-rT} \frac{\sigma^2}{2b} \left[\left(\frac{S}{S_{\max}} \right)^{\frac{2b}{\sigma^2}} \cdot N\left(-f_1 + \frac{2b}{\sigma} \sqrt{T}\right) - e^{bT} \cdot N(-f_1) \right]$$

where

$$f_1 = \frac{\ln(S/S_{\min}) + (b + \sigma^2/2) \cdot T}{\sigma \sqrt{T}}$$

$$f_2 = f_1 - \sigma \sqrt{T}$$

By defining the following variables all four formulas can be combined into one:

z - option type adjustment,

$$z = \begin{cases} 1 - \text{call option,} \\ -1 - \text{put option} \end{cases}$$

\bar{S} - price extreme observed,

$$\bar{S} = \begin{cases} S_{\max}, & \text{if calculating a call option,} \\ S_{\min}, & \text{if calculating a put option;} \end{cases}$$

S_L - price limit,

$$S_L = \begin{cases} \bar{S}, & \text{if } \bar{S} > X \text{ for calls or } \bar{S} < X \text{ for puts,} \\ X, & \text{otherwise;} \end{cases}$$

Now the formulas transform into:

$$\begin{aligned} \text{TheoV} &= z \cdot e^{-rT}(S_L - X) + z \cdot S \cdot e^{(b-r)T} \cdot N(z \cdot d_1) - z \cdot S_L \cdot e^{-rT} \cdot N(z \cdot d_2) + \\ &+ z \cdot S \cdot e^{-rT} \frac{\sigma^2}{2b} \left[- \left(\frac{S}{S_{\max}} \right)^{\frac{2b}{\sigma^2}} \cdot N\left(z \cdot \left(d_1 - \frac{2b}{\sigma} \sqrt{T} \right)\right) + e^{bT} \cdot N(z \cdot d_1) \right] = \\ &= z \cdot e^{-rT} \cdot \left(S_L - X - S_L \cdot N(z \cdot d_2) + S \cdot \frac{\sigma^2}{2b} \cdot \left(e^{bT} \cdot N(z \cdot d_1) - \left(\frac{S}{S_L} \right)^{\frac{2b}{\sigma^2}} \cdot N\left(z \cdot \left(d_1 - \frac{2b \sqrt{T}}{\sigma} \right)\right) \right) \right) \end{aligned}$$

Delta, Gamma, Vega, Theta, Rho

The system uses the numerical differentiation to calculate the Greeks.

Implied volatility

The systems finds implied volatility numerically.

Interest-Rate Option Models

For further reading, we suggest [The Complete Guide to Option Pricing Formulas](#). ISBN 0071389970.

The Vasicek Model

The Vasicek (1977) model is a yield-based one-factor equilibrium model. The model allows closed-form solutions for European options on zero-coupon bonds.

TheoV

Call

$$c = L \cdot P_\tau \cdot N(h) - X \cdot P_T \cdot N(h - \sigma_p)$$

Put

$$p = X \cdot P_T \cdot N(-h + \sigma_p) - L \cdot P_\tau \cdot N(-h)$$

where

L – bond principal (i.e. face value),

τ – bond time to maturity,

$$P_T = P(T),$$

$$P_\tau = P(\tau),$$

$P(T)$ - the price at time zero of a zero-coupon bond that pays \$1 at time T,

$$h = \frac{1}{\sigma_p} \ln \left[\frac{L \cdot P_\tau}{P_T \cdot X} \right] + \frac{\sigma_p}{2}$$

$$\sigma_p = \sigma \cdot d$$

$$d = \frac{1}{a} \left(1 - e^{-a(\tau-T)} \right) \sqrt{\frac{1 - e^{-2aT}}{2a}}$$

$$P(T) = A(T) \cdot e^{-B(T)r}$$

where

r – the initial risk-free rate

$$B(T) = \frac{1 - e^{-aT}}{a}$$

$$A(T) = \exp \left[\frac{(B(T) - T)(a^2 b - \sigma^2 / 2)}{a^2} - \frac{\sigma^2 \cdot B(T)^2}{4a} \right]$$

a – the speed of the mean reversion,

b – the mean reversion level.

Delta

Since, Delta is the option value sensitivity to small movements in the underlying price then

Call

$$\Delta = \frac{\partial c}{\partial P_T} = X \cdot n(h - \sigma_p) \cdot \frac{1}{\sigma_p} - X \cdot N(h - \sigma_p) - L \cdot P_\tau \cdot n(h) \cdot \frac{1}{\sigma_p \cdot P_T}$$

Put

$$\Delta = \frac{\partial p}{\partial P_T} = X \cdot n(h - \sigma_p) \cdot \frac{1}{\sigma_p} + X \cdot N(-h + \sigma_p) - L \cdot P_\tau \cdot n(h) \cdot \frac{1}{\sigma_p \cdot P_T}$$

Gamma

Gamma is identical for put and call options.

$$\Gamma = \frac{\partial \Delta}{\partial P_T} = L \cdot P_\tau \cdot n(h) \cdot \frac{1}{\sigma_p P_T^2} \cdot \left(1 - \frac{h}{\sigma_p}\right) + X \cdot n(h - \sigma_p) \cdot \frac{h}{\sigma_p^2 P_T}$$

Vega

System uses the numerical differentiation to calculate *Vega*.

Theta

System uses the numerical differentiation to calculate *Theta*.

Rho

Since the price at time zero of a zero-coupon bond that pays \$1 at time t is

$$P(t) = A(t) \cdot e^{-B(t) \cdot r} \text{ then}$$

$$P'_T = -B_T \cdot P_T$$

$$P'_\tau = -B_\tau \cdot P_\tau$$

$$h' = \frac{B_T - B_\tau}{\sigma_p}$$

where

$$B_\tau = B(\tau)$$

$$B_T = B(T)$$

Call

$$\rho = \frac{\partial c}{\partial r_T} = L \cdot P_\tau \cdot n(h) \cdot \frac{B_T - B_\tau}{\sigma_p} - L \cdot P_\tau \cdot B_\tau \cdot N(h) + X \cdot P_T \cdot B_T \cdot N(h - \sigma_p) - X \cdot P_T \cdot n(h - \sigma_p) \cdot \frac{B_T - B_\tau}{\sigma_p} \quad \text{Put}$$

$$\rho = \frac{\partial p}{\partial r} = L \cdot P_\tau \cdot B_\tau \cdot N(-h) + L \cdot P_\tau \cdot n(h) \cdot \frac{B_T - B_\tau}{\sigma_p} - X \cdot P_T \cdot B_T \cdot N(-h + \sigma_p) - X \cdot P_T \cdot n(h - \sigma_p) \cdot \frac{B_T - B_\tau}{\sigma_p}$$

Implied volatility

System numerically finds implied volatility.

The Hull and White Model

The Hull and White (1990) model is a yield-based no-arbitrage model. This is extension of the Vasicek model. The model allows closed-form solutions for European options on zero-coupon bonds.

TheoV

Call

$$c = L \cdot P_\tau \cdot N(h) - X \cdot P_T \cdot N(h - \sigma_p)$$

Put

$$p = X \cdot P_T \cdot N(-h + \sigma_p) - L \cdot P_\tau \cdot N(-h)$$

Where

L – bond principal (i.e. face value),

τ – bond time maturity,

$$P_T = P(T),$$

$$P_\tau = P(\tau),$$

P(T) - the price at time zero of a zero-coupon bond that pays \$1 at time T,

$$h = \frac{1}{\sigma_p} \ln \left[\frac{L \cdot P(\tau)}{P(T) \cdot X} \right] + \frac{\sigma_p}{2}$$

$$\sigma_p = \frac{\sigma}{a} \left(1 - e^{-a(\tau-T)} \right) \sqrt{\frac{1 - e^{-2aT}}{2a}}$$

a – the speed of the mean reversion.

Unlike Vasicek model, P_T and P_τ are input parameters.

Delta

Call

$$\Delta = \frac{\partial c}{\partial P_T} = X \cdot n(h - \sigma_p) \cdot \frac{1}{\sigma_p} - X \cdot N(h - \sigma_p) - L \cdot P_\tau \cdot n(h) \cdot \frac{1}{\sigma_p \cdot P_T}$$

Put

$$\Delta = \frac{\partial p}{\partial P_T} = X \cdot n(h - \sigma_p) \cdot \frac{1}{\sigma_p} + X \cdot N(-h + \sigma_p) - L \cdot P_\tau \cdot n(h) \cdot \frac{1}{\sigma_p \cdot P_T}$$

Gamma

Gamma is identical for put and call options.

$$\Gamma = \frac{\partial \Delta}{\partial P_T} = L \cdot P_\tau \cdot n(h) \cdot \frac{1}{\sigma_p P_T^2} \cdot \left(1 - \frac{h}{\sigma_p}\right) + X \cdot n(h - \sigma_p) \cdot \frac{h}{\sigma_p^2 P_T}$$

Vega

Because $n(x) = n(-x)$

$$\text{Vega} = \frac{\partial c}{\partial \sigma} = \frac{\partial p}{\partial \sigma} = L \cdot P_\tau \cdot n(h) \cdot \left(\frac{\sigma_p - h}{\sigma}\right) + X \cdot P_T \cdot n(h - \sigma_p) \cdot \frac{h}{\sigma}$$

Theta

Call

$$\Theta = \frac{\partial c}{\partial T} = L \cdot P_\tau \cdot n(h) \cdot \left(\left(-g + \frac{1}{2}\right)\sigma_p' + \frac{r}{\sigma_p}\right) + X \cdot r \cdot P_T \cdot N(h - \sigma_p) - X \cdot P_T \cdot n(h - \sigma_p) \cdot \left(\left(-g - \frac{1}{2}\right)\sigma_p' + \frac{r}{\sigma_p}\right)$$

$$g = \frac{1}{\sigma_p^2} \cdot \ln\left[\frac{L \cdot P_\tau}{P_T \cdot X}\right]$$

$$r = -\frac{1}{T} \ln(P_T)$$

Put

$$\Theta = \frac{\partial p}{\partial T} = -X \cdot r \cdot P_T \cdot N(-h + \sigma_p) - X \cdot P_T \cdot n(-h + \sigma_p) \cdot \left(\left(-g - \frac{1}{2}\right)\sigma_p' + \frac{r}{\sigma_p}\right) + L \cdot P_\tau \cdot n(-h) \cdot \left(\left(-g + \frac{1}{2}\right)\sigma_p' + \frac{r}{\sigma_p}\right)$$

$$\text{where } \sigma_p' = \sigma \left[-e^{-a(\tau-T)} \sqrt{\frac{(1 - e^{-2aT})}{2a}} + \frac{e^{-2aT} \cdot (1 - e^{-a(\tau-T)})}{\sqrt{2a \cdot (1 - e^{-2aT})}} \right]$$

Rho

Since, the price at time zero of a zero-coupon bond that pays \$1 at time t is

$$P(t) = e^{-tr} \text{ then}$$

$$P'_T = -T \cdot P_T$$

$$P'_\tau = -\tau \cdot P_\tau$$

$$h' = \frac{T - \tau}{\sigma_p}$$

Call

$$\rho = \frac{\partial c}{\partial r_T} = L \cdot P_\tau \cdot n(h) \cdot \frac{T - \tau}{\sigma_p} - L \cdot P_\tau \cdot \tau \cdot N(h) + X \cdot P_T \cdot T \cdot N(h - \sigma_p) - X \cdot P_T \cdot n(h - \sigma_p) \cdot \frac{T - \tau}{\sigma_p}$$

Put

$$\rho = \frac{\partial p}{\partial r} = L \cdot P_\tau \cdot \tau \cdot N(-h) + L \cdot P_\tau \cdot n(h) \cdot \frac{T - \tau}{\sigma_p} - X \cdot P_T \cdot T \cdot N(-h + \sigma_p) - X \cdot P_T \cdot n(h - \sigma_p) \cdot \frac{T - \tau}{\sigma_p}$$

Implied volatility

The system finds implied volatility numerically.

The Ho and Lee Model

Ho and Lee (1986) model is the no-arbitrage model. The model allows closed-form solutions for European options on zero-coupon bonds.

TheoV

Call

$$c = L \cdot P_\tau \cdot N(h) - X \cdot P_T \cdot N(h - \sigma_p)$$

Put

$$p = X \cdot P_T \cdot N(-h + \sigma_p) - L \cdot P_\tau \cdot N(-h)$$

Where

L – bond principal (i.e. face value),

τ – bond time maturity,

$$P_T = P(T)$$

$$P_\tau = P(\tau)$$

$P(T)$ - the price at time zero of a zero-coupon bond that pays \$1 at time T,

$$h = \frac{1}{\sigma_p} \ln \left[\frac{L \cdot P(\tau)}{P(T) \cdot X} \right] + \frac{\sigma_p}{2}$$

$$\sigma_p = \sigma(\tau - T) \cdot \sqrt{T}$$

The distinctions from Vasicek model are

- P_T and P_τ are input parameters,
- σ_p expression is different.

Delta

Call

$$\Delta = \frac{\partial c}{\partial P_T} = X \cdot n(h - \sigma_p) \cdot \frac{1}{\sigma_p} - X \cdot N(h - \sigma_p) - L \cdot P_\tau \cdot n(h) \cdot \frac{1}{\sigma_p \cdot P_T}$$

Put

$$\Delta = \frac{\partial p}{\partial P_T} = L \cdot P_\tau \cdot n(h) \cdot \frac{1}{\sigma_p \cdot P_T^2} \cdot \left(1 - \frac{h}{\sigma_p} \right) + X \cdot n(h - \sigma_p) \cdot \frac{h}{\sigma_p^2 \cdot P_T}$$

Gamma

Gamma is identical for put and call options.

$$\Gamma = \frac{\partial \Delta}{\partial P_T} = L \cdot P_\tau \cdot n(h) \cdot \frac{1}{\sigma_p P_T^2} \cdot \left(1 + \frac{1}{\sigma_p}\right) + X \cdot n(h - \sigma_p) \cdot \frac{1}{\sigma_p P_T} \cdot \left(1 - \frac{1}{\sigma_p}\right)$$

Vega

Because $n(x) = n(-x)$

$$\text{Vega} = \frac{\partial c}{\partial \sigma} = \frac{\partial p}{\partial \sigma} = L \cdot P_\tau \cdot n(h) \cdot \left(\frac{\sigma_p - h}{\sigma}\right) + X \cdot P_T \cdot n(h - \sigma_p) \cdot \frac{h}{\sigma}$$

Theta

Call

$$\Theta = \frac{\partial c}{\partial T} = L \cdot P_\tau \cdot n(h) \cdot \left(\left(-g + \frac{1}{2}\right) \sigma_p' + \frac{r}{\sigma_p} \right) + X \cdot r \cdot P_T \cdot N(h - \sigma_p) -$$

$$- X \cdot P_T \cdot n(h - \sigma_p) \cdot \left(\left(-g - \frac{1}{2}\right) \sigma_p' + \frac{r}{\sigma_p} \right)$$

$$g = \frac{1}{\sigma_p^2} \cdot \ln \left[\frac{L \cdot P_\tau}{P_T \cdot X} \right]$$

$$r = -\frac{1}{T} \ln(P_T)$$

Put

$$\Theta = \frac{\partial p}{\partial T} = -X \cdot r \cdot P_T \cdot N(-h + \sigma_p) + X \cdot P_T \cdot n(-h + \sigma_p) \cdot \left(\left(g + \frac{1}{2}\right) \sigma_p' - \frac{r}{\sigma_p} \right) -$$

$$- L \cdot P_\tau \cdot n(-h) \cdot \left(\left(g - \frac{1}{2}\right) \sigma_p' - \frac{r}{\sigma_p} \right)$$

where

$$\sigma_p' = \frac{\sigma}{2\sqrt{T}} [\tau - 3T]$$

Rho

Since the price at time zero of a zero-coupon bond that pays \$1 at time t is

$$P(t) = e^{-tr} \text{ then}$$

$$P'_T = -T \cdot P_T$$

$$P'_\tau = -\tau \cdot P_\tau$$

$$h' = \frac{T - \tau}{\sigma_p}$$

Call

$$\rho = \frac{\partial c}{\partial r_T} = L \cdot P_\tau \cdot n(h) \cdot \frac{T - \tau}{\sigma_p} - L \cdot P_\tau \cdot \tau \cdot N(h) + X \cdot P_T \cdot T \cdot N(h - \sigma_p) - X \cdot P_T \cdot n(h - \sigma_p) \cdot \frac{T - \tau}{\sigma_p}$$

Put

$$\rho = \frac{\partial p}{\partial r} = L \cdot P_\tau \cdot \tau \cdot N(-h) + L \cdot P_\tau \cdot n(h) \cdot \frac{T - \tau}{\sigma_p} - X \cdot P_T \cdot T \cdot N(-h + \sigma_p) - X \cdot P_T \cdot n(h - \sigma_p) \cdot \frac{T - \tau}{\sigma_p}$$

Implied volatility

The system finds implied volatility numerically.

Spread Options Model

For an overview of spread options, we suggest:

- [The Complete Guide to Option Pricing Formulas](#). ISBN 0071389970.
- [Spread Options](http://www.global-derivatives.com) at www.global-derivatives.com

Kirk's Approximation

The approximation method by Kirk (1995) can be used to price European spread options on futures.

TheoV

Call price is

$$c = (F_2 + X) \cdot e^{-rT} \cdot (F \cdot N(d_1) - N(d_2)) = e^{-rT} (F_1 N(d_1) - (F_2 + X) N(d_2))$$

Put price is

$$p = (F_2 + X) \cdot e^{-rT} \cdot (N(-d_2) - F \cdot N(-d_1))$$

where

$$d_1 = \frac{\ln(F) + (\sigma^2 / 2) \cdot T}{\sigma \cdot \sqrt{T}}$$

$$d_2 = d_1 - \sigma \cdot \sqrt{T}$$

$$F = \frac{F_1}{F_2 + X}$$

and the volatility of F is approximated by the combined value:

$$\sigma = \sqrt{\sigma_1^2 + \left(\sigma_2 \cdot \frac{F_2}{F_2 + X} \right)^2 - 2 \cdot \kappa \cdot \sigma_1 \cdot \sigma_2 \cdot \frac{F_2}{F_2 + X}}$$

F_1 – price on futures contract 1,

F_2 – price on futures contract 2,

σ_1 – volatility of futures 1,

σ_2 – volatility of futures 2,

κ - correlation between the two futures contracts.

However, it should be noted that both formulas for c and p above can be easily calculated using generalized Black-Scholes equation. Notice that if we take

$$S = F_1$$

$$K = F_2 + X$$

, and σ is calculated by the formula above than c may be expressed as

$$c = c_{BS} = Se^{-rT} N(d_1) - Xe^{-rT} N(d_2),$$

which is exactly identical to BS equation. Similar is true for p . That also implies that some of Greeks can be calculated by the corresponding BS formulas.

Prior to giving formulas for Greeks lets introduce a few helper equations which may help in implementing the formulas found across the section.

$$\beta = \sigma_2 \cdot \frac{F_2}{F_2 + X}$$

, thus simplifying $\sigma = \sqrt{\sigma_1^2 + \beta^2 - 2\kappa\sigma_1\beta}$.

Put-call parity in Kirk's model is expressed as:

$$p = c + e^{-rT}(F_2 + X - F_1).$$

Below are some partial derivatives used in equations

$$\frac{\partial d_1}{\partial F_1} = \frac{\partial d_2}{\partial F_1} = (F_1\sigma\sqrt{T})^{-1}$$

The first derivative of sigma by the price of the second futures is:

$$\frac{\partial \sigma}{\partial F_2} = \frac{\sigma_2 X}{\sigma} \times \frac{\beta - \kappa\sigma_1}{(F_2 + X)^2}$$

The second derivative of sigma by the price of the second futures is a bit more complex and is:

$$\frac{\partial^2 \sigma}{\partial F_2^2} = \frac{\sigma_2 X}{\sigma^2 (F_2 + X)^3} \cdot \left(\frac{\sigma\sigma_2 X}{F_2 + X} + (\kappa\sigma_1 - \beta) \cdot \left(2\sigma + (F_2 + X) \frac{\partial \sigma}{\partial F_2} \right) \right)$$

Partial derivatives of d_1, d_2 by the price of the second futures are also useful to have. Those are:

$$\frac{\partial d_1}{\partial F_2} = -\frac{1}{\sigma} \cdot \frac{\partial \sigma}{\partial F_2} d_2 - \frac{1}{\sigma\sqrt{T}(F_2 + X)},$$

$$\frac{\partial d_2}{\partial F_2} = -\frac{1}{\sigma} \cdot \frac{\partial \sigma}{\partial F_2} d_1 - \frac{1}{\sigma\sqrt{T}(F_2 + X)}.$$

Also, some partial derivatives of the combined volatility are as follow:

$$\frac{\partial \sigma}{\partial \sigma_1} = \frac{\sigma_1 - \beta\kappa}{\sigma},$$

$$\frac{\partial \sigma}{\partial \sigma_2} = \frac{\beta}{\sigma} \left(\beta - \kappa \frac{\sigma_1}{\sigma_2} \right),$$

$$\frac{\partial \sigma}{\partial \kappa} = -\frac{\sigma_1}{\sigma} \beta$$

Finally it should be noted that

$$n(d_1) - n(d_2) / F = 0$$

and hence:

$$F \cdot n(d_1) = n(d_2)$$

Delta1, Delta2

Each delta is calculated with respect to the corresponding asset price movement. Sensitivity of call option price to price change of the first futures is:

$$\Delta_1^c = \frac{\partial c}{\partial F_1} = e^{-rT} N(d_1)$$

Sensitivity of call option price to price change of the second futures is:

$$\Delta_2^c = \frac{\partial c}{\partial F_2} = e^{-rT} \cdot \left(-N(d_2) + (F_2 + X)n(d_2)\sqrt{T} \frac{\partial \sigma}{\partial F_2} \right)$$

By virtue of call-put parity given above the following expressions are true for put option Deltas. Sensitivities of put option price to price change in price of either the first or the second futures are, respectively:

$$\Delta_1^p = \frac{\partial p}{\partial F_1} = \Delta_1^c - e^{-rT}$$

$$\Delta_2^p = \frac{\partial p}{\partial F_2} = \Delta_2^c + e^{-rT}$$

Gamma1, Gamma2

Each gamma is calculated similar to delta, with respect to the corresponding asset price movement.

The equation is identical for call and put:

$$\Gamma_1^c = \Gamma_1^p = e^{-rT} \cdot \frac{1}{F_1 \cdot \sigma^2 \cdot T} \left(n(d_1) \cdot [\sigma\sqrt{T} - d_1] + \frac{1}{F} n(d_2) \cdot [\sigma\sqrt{T} + d_2] \right) = e^{-rT} \cdot \frac{n(d_1)}{F_1 \sigma \sqrt{T}}$$

The gamma with respect to the second futures price is identical for call and put and is expressed as:

$$\Gamma_2^c = \Gamma_2^p = e^{-rT} n(d_2) \cdot \left(-\frac{\partial d_2}{\partial F_2} + \sqrt{T} \cdot \left(\frac{\partial \sigma}{\partial F_2} + (F_2 + X) \cdot \left(\frac{\partial^2 \sigma}{\partial F_2^2} - d_2 \frac{\partial d_2}{\partial F_2} \frac{\partial \sigma}{\partial F_2} \right) \right) \right)$$

Vega

The vega is chosen to reflect sensitivity of the spread price with respect to movement of value of the combined volatility σ :

$$Vega = F_1 \cdot e^{-rT} n(d_1) \cdot \sqrt{T}$$

Theta

Call

$$\Theta = -r \cdot c + g$$

Put

$$\Theta = -r \cdot p + g$$

where

$$g = \frac{F_2 + X}{2 \cdot \sqrt{T}} \cdot e^{-rT} \cdot \left(F \cdot n(d_1) \cdot \left(\frac{\sigma}{2} - \frac{\ln(F)}{\sigma \cdot T} \right) + n(d_2) \cdot \left(\frac{\sigma}{2} + \frac{\ln(F)}{\sigma \cdot T} \right) \right) = e^{-rT} \cdot \frac{F_2 + X}{2 \cdot \sqrt{T}} \cdot n(d_2) \cdot \sigma = e^{-rT} \frac{F_1 \sigma}{2 \sqrt{T}} n(d_1)$$

Rho

Call

$$\rho = -T \cdot c$$

Put

$$\rho = -T \cdot p$$

Chi

Chi χ (as defined in Carmona & Durrleman) denotes the first derivative of option price by correlation coefficient κ .

$$\chi = \frac{\partial c}{\partial \kappa} = -e^{-rT} F \cdot F_2 \sqrt{T} \cdot n(d_1) \frac{\sigma_1 \sigma_2}{\sigma}$$

Implied Volatility & Correlation

There is no definite way to calculate both σ_1, σ_2 given a concrete spot price. It is supposed to determine the value of the combined volatility σ by the standard approach of solving the equation numerically as done in Black-Scholes model.

However, it should be possible to calculate implied value of any of three $\sigma_1, \sigma_2, \kappa$ variables provided the other two are known. For that purpose the partial derivatives of option value by any of three variables may be required to apply Newton's equation solver, for instance.

Let's denote a selected variable as ξ , which may be either of $\sigma_1, \sigma_2, \kappa$. The generic form of the partial derivative of option value $\frac{\partial c}{\partial \xi}$ is:

$$\frac{\partial c}{\partial \xi} = e^{-rT} F_1 n(d_1) \sqrt{T} \times \frac{1}{\sigma} \frac{\partial \sigma}{\partial \xi} = \frac{\partial c_{BS}}{\partial \sigma} \times \frac{1}{\sigma} \times \frac{\partial \sigma}{\partial \xi} = Vega \times \frac{1}{\sigma} \times \frac{\partial \sigma}{\partial \xi}$$

The expression demonstrates that values calculated with BS model can be used. Substituting ξ with σ_1, σ_2 , and κ the expressions for each of $\frac{\partial c}{\partial \sigma_1}, \frac{\partial c}{\partial \sigma_2}$, and $\frac{\partial c}{\partial \kappa}$ can be obtained using the corresponding partial derivatives of σ given earlier.

Cumulative Normal Distribution Function Approximation

For further reading, we suggest:

- [The Complete Guide to Option Pricing Formulas](#). ISBN 0071389970.
- [Handbook of Mathematical Functions](#). ISBN 0486612724.

Abromowitz and Stegun approximation

The following approximation of the cumulative normal distribution function $N(x)$ produces values to within six decimal places of the true value.

When $x \geq 0$

$$N(x) = 1 - n(x)(a_1 * k + a_2 * k^2 + a_3 * k^3 + a_4 * k^4 + a_5 * k^5)$$

when $x < 0$

$$N(x) = 1 - N(-x)$$

where

$n(x)$ – normal distribution;

$$k = 1 / (1 + 0.2316419 * x);$$

$$a_1 = 0.319381530;$$

$$a_2 = -0.356563782;$$

$$a_3 = 1.781477937;$$

$$a_4 = -1.821255978;$$

$$a_5 = 1.330274429;$$

Hart's approximation

This algorithm uses high degree rational functions to obtain the approximation. This function is accurate to double precision (15 digits) throughout the real line.

Numerical Methods for Solving Equations

The system offers several methods of the solving of the nonlinear equations.

For further reading, we suggest [Numerical Recipes: The Art of Scientific Computing](#), 3rd ed. ISBN-10: 0521880688.

Bisection Method

The bisection method is a simple iterative root-finding algorithm.

The method convergence is linear, which is quite slow. On the positive side, the method is guaranteed to converge.

Newton's Method

Newton's method, also called the Newton-Raphson method, is an iterative root-finding algorithm.

The method convergence is usually quadratic, however it can encounter problems for function with local extremes.

Newton's method requests that function is differentiable.

Newton Safe Method

Newton Safe method is an iterative root-finding algorithm, which combines the bisection and Newton's methods.

The method , however if function has local extremes convergence can be linear.

Like Newton's method, Newton safe method requests that function is differentiable.

Brent's Method

Brent's method is an iterative root-finding algorithm.

This method is characterized by quadratic convergence in case of smooth functions and guaranteed linear convergence in case of non-smooth or sophisticated functions.

Numerical Differentiation

The first derivative shall be calculated as

$$\left. \frac{df}{dx} \right|_{x=x_i} \approx \frac{f_{i+1} - f_{i-1}}{2h}$$

The first derivative represents instantaneous rate of change, which is limit of average rate of change where h is the small time interval,

h = the time between point t and point $t+1 = \Delta t$ (delta t) The second derivative shall be calculated as

$$\left. \frac{d^2 f}{dx^2} \right|_{x=x_i} \approx \frac{f_{i+1} - 2f_i + f_{i-1}}{h^2}$$

Trading Options

Trading with CQG IC is explained in detail in our [trading user guide](#).

As an options trader, you may want to:

- Add a Greek column to DOMTrader (Trading Preferences > Display > Greek column for options)
- Highlight theoretical value on the DOMTrader (Trading Preferences > Display > Price Column)
- Select on options model (Trading Preferences > Display > Options)
- Use theoretical value to calculate UPL/MVO (Trading Preferences > Display > Status)

DOMTrader and Order Ticket have options-specific components. The current strike price is displayed, and you can change the model and Greeks directly on the trading application. The Account Summary area of Orders and Positions also has options-specific data.

Note about options prices on DOMTrader

You may wonder why price calculations sometimes differ between the options window and DOMTrader.

As expected, the price on the options window is calculated using market data and shows the current value of the Greek for a single price.

DOMTrader offers an entire ladder of prices. Except for the single cell where the last trade occurred, other prices are potential prices at which the options contract may be traded later, if the market moves in that direction. Because we cannot calculate an actual price for a future state, we use predictive mathematics to derive those potential prices.

To calculate Delta for a potential price of C.EP U213350 away from the current market (say, at 4100), we use the price of the underlying instrument F.EPU2 and other characteristics of the F.EP market movement that would result in market of C.EP U213350 moving to 4100.

Thus, we are trying to predict what the value of Delta would be then if the option price achieves 4100. CQG uses a complex algorithm to make that prediction.

Because of this difference in calculation, the prices on the options window may be different from the prices on DOMTrader.

The image displays three screenshots from a trading platform, illustrating price discrepancies between different windows for E-Mini S&P 500 options.

Window 1: E-Mini S&P 500, Sep 12 - D (EPU2)

Order Type	Quantity	Price	Volume
Buy		133600	1116
Buy		133575	1002
		133550	589
		133525	646
Buy	234	133500	806
	2382	133475	303
	5970	133450	280
Buy	5736	133425	300
	5856	133400	301
	4	133375	97
Buy	0	133350	235
	4702	133325	296
	4324	133300	430
Buy	5880	133275	362
	8968	133250	421
	7379	133225	432
Buy	6320	133200	480
	6690	133175	604
	11K	133150	667

Window 2: E-Mini S&P 500 Options, Sep (C.EPU213350)

Order Type	Quantity	Price	Volume
Buy		4150	51.99
		4125	51.82
		4100	51.64
Buy		4075	51.47
		4050	51.29
		4025	51.12
Buy		4000	50.94
	0	3975	50.76
		3950	50.58
Buy	0	3925	50.41
		3900	50.22
		3875	50.04
Buy		3850	49.86
		3825	49.68
		3800	49.49
Buy		3775	49.31
	✓	3750	49.12
		3725	48.94
Buy		3700	48.75
		3675	48.56
		3650	48.37
Buy		3625	48.18
		3600	47.99

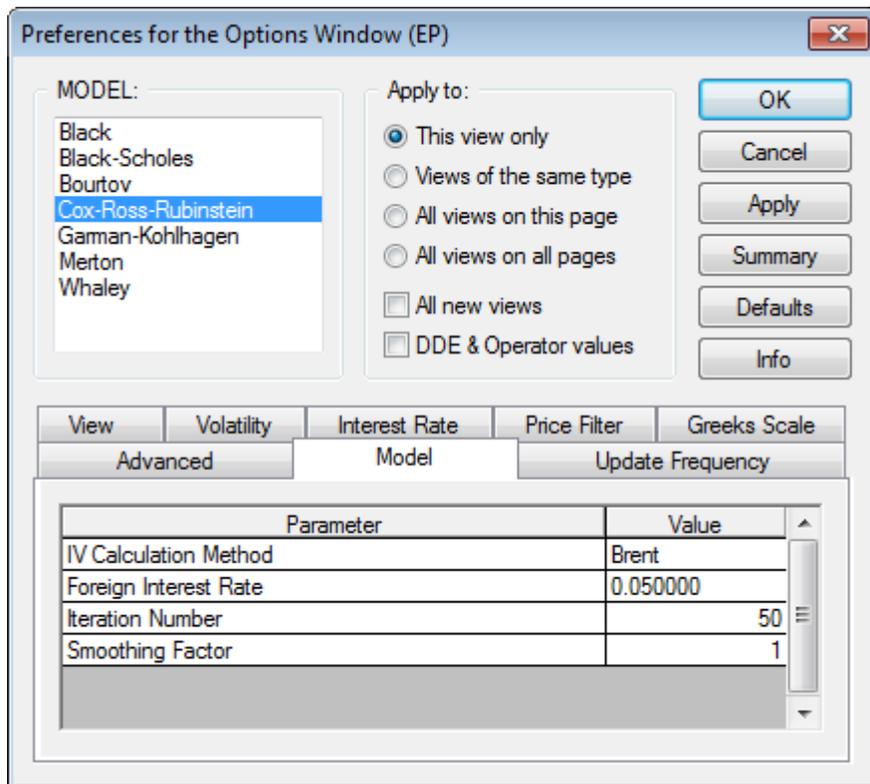
Window 3: EP(E-Mini S&P 500 Options)

EP	SEP2 CALLS	UndPr	DTE	EXP	Vol	IVS	IR
		133375A	70	09/21/12	17.45	0.00	0.41
12700	8500A	72.28					
12750	8100A	71.01					
12800	7725A	69.62					
12850	7350A	68.20					
12900	6975A	66.69					
12950	6475B	65.60					
13000	6250A	63.60					
13050	5900A	61.97					
13100	5575A	60.27					
13150	5225A	58.52					
13200	4900A	56.72					
13250	4600A	54.86					
13300	4275A	52.95					
13350	3975A	50.99					
13400	3075A	48.97					
13450	3350B	46.82					
13500	3150A	44.83					
13550	2900A	42.72					
13600	2650A	40.58					
13650	2425A	38.41					
13700	2175A	36.13					
13750	2000A	34.07					
13800	1750B	31.57					
13850	1625A	29.78					
13900	1400B	27.25					
13950	1300A	25.62					
14000	1150A	23.56					
14050	1025A	21.69					
14100	900A	19.78					
14150	725B	17.20					
14200	625B	15.43					
14250	600A	14.66					
14300	480B	12.55					
14350	400B	10.95					
14400	350B	9.82					
14450	295B	8.58					
14500	280A	8.08					
14550	210B	6.52					
14600	170B	5.45					

Setting Options Preferences

To set options preferences, click the **Setup** button and then click **Options Preferences**. You can also click the **Prefs** button on the Options toolbar.

To start, select the model and where to apply these preferences. If you select **DDE & Operator values**, changes apply to other areas where options are used, such as custom studies.



- Click the **Summary** button to view, print, and save (.dat file) the current settings.
- Click the **Defaults** button to return to default values.

Other Options preferences include (tabbed area at bottom of window):

- **View** settings allow you to show or hide Greek and implied volatility scales, order columns, and set extended coloring parameters.
- **Volatility** settings allow you to set the implied volatility type, evaluation method for average volatility, and select a volatility calculation type.
- **Interest Rate** settings allow you to set the interest rate for various currencies.
- **Price Filter** settings allow you to select which price to use for underlying and option. You can also choose to use most recent settlement prices.

- **Greeks Scale** settings allow you to set the price scale, time direction, and time scale and to choose percent or fractions for implied volatility and delta and gamma.
- **Advanced** settings allow you to select the underlying contract type and increase days to expiration.
- **Model** settings allow you to define parameters for each model.
- **Update Frequency** settings allow you to set the refresh period for average volatility, interest rate, and new/removed contract and to set update delays for theoretical value and the Greeks.

Setting Options Window View Preferences

View settings allow you to show or hide Greek and implied volatility scales, order columns, and set extended coloring parameters for old and stale.

Advanced	Model	Update Frequency		
View	Volatility	Interest Rate	Price Filter	Greeks Scale
Appearance				
<input checked="" type="checkbox"/> Show Greek and Implied Volatility scale setting in the header				
Column order		Extended Coloring: Mark as		
<input checked="" type="radio"/> Months <input type="radio"/> Puts/Calls		OLD, if option price hasn't changed for <input type="text" value="1"/> hours STALE, if the theoretical movement of option price exceeds <input type="text" value="10"/> %		

Appearance

Select this check box to display the scale setting (percent or fraction) in the header.

Column order

Click the **Months** check box to arrange the columns by month.

EP	SEP2 CALLS	SEP2 PUTS	OCT2 CALLS	OCT2 PUTS	NOV2 CALLS	NOV2 PUTS
UndPr	133550 ^A	133550 ^A	134575 ^A	134575 ^A	134575 ^A	134575 ^A
DTE	73	73	101	101	129	129
EXP	09/21/12	09/21/12	10/19/12	10/19/12	11/16/12	11/16/12
VOL	17.71	17.54	17.76	17.48	0.00	0.00
IVS	0.00	0.00	0.00	0.00	0.00	0.00
IR	0.44	0.44	0.45	0.45	0.45	0.45

Click the **Puts/Calls** check box to arrange the columns so that all calls columns come before puts columns.

EP	SEP2 CALLS	OCT2 CALLS	NOV2 CALLS	SEP2 PUTS	OCT2 PUTS	NOV2 PUTS
UndPr	133550 ^A	134575 ^A	134575 ^A	133550 ^A	134575 ^A	134575 ^A
DTE	73	101	129	73	101	129
EXP	09/21/12	10/19/12	11/16/12	09/21/12	10/19/12	11/16/12
VOL	17.71	17.76	0.00	17.54	17.79	0.00
IVS	0.00	0.00	0.00	0.00	0.00	0.00
IR	0.44	0.45	0.45	0.44	0.45	0.45

Extended Coloring: Mark as

Set the threshold for old prices and stale movement.

Setting Options Calculator View Preferences

The image shows a software dialog box with a tabbed interface. The 'Advanced' tab is selected. Inside the dialog, there are two settings: 'Degree of Polynomial' with a value of 4, and 'Points to Plot' with a value of 60. Each value is displayed in a small box with up and down arrow buttons for adjustment.

Degree of Polynomial

Enter a value up to 8. The higher value, the slower the drawing of the graph but the better the curve fits the Volatility Skew graph.

Points to Plot

Enter a value up to 120. The higher the number, the slower the drawing of the graph but the higher the definition.

Setting Volatility Workshop View Preferences

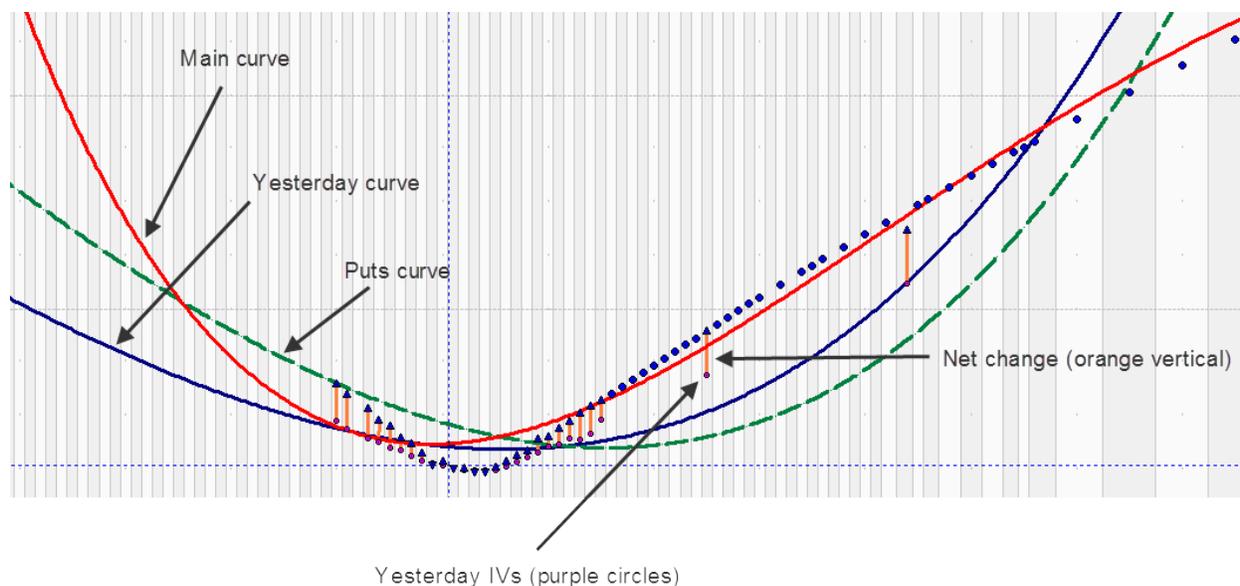
Advanced	Model	Update Frequency
View	Volatility	Interest Rate
	Price Filter	Greeks Scale
Show		
<input type="checkbox"/> Yesterday curve	<input type="checkbox"/> Yest. IVs	Strikes Range
<input type="checkbox"/> Call/Put curve	<input type="checkbox"/> NetChange	Extend at right side by 0 %
		Extend at left side by 0 %
X-Axis type		
Strike Price		
Mark as		
OLD, if option price hasn't changed for 1 hours		
STALE, if the theoretical movement of option price exceeds 10 %		

Show

Choose the elements to add to the Volatility Workshop display: **Yesterday curve**, **Yest. IVs**, **Call/Put curve**, or **Net Change**.

Each of these becomes an additional row in the table about the graph and are displayed on the graph.

The curves are added to the graph. Yesterdays IV (each option's settlement IV) is represented as circles on the graph. Net change is represented as a vertical line between the current IV and yesterday's settlement IV.



Strikes Range

Expand the curves on the left and right side by a designated percentage. This facilitates estimating the IVs of options that have not yet been listed. For example, if the range prior to the expansion was from 1000 to 3000 and the range was expanded on the right side by 10 percent, the new range would be from 1000 to 3200 $[(.1 * (3000 - 1000) + 3000)]$.

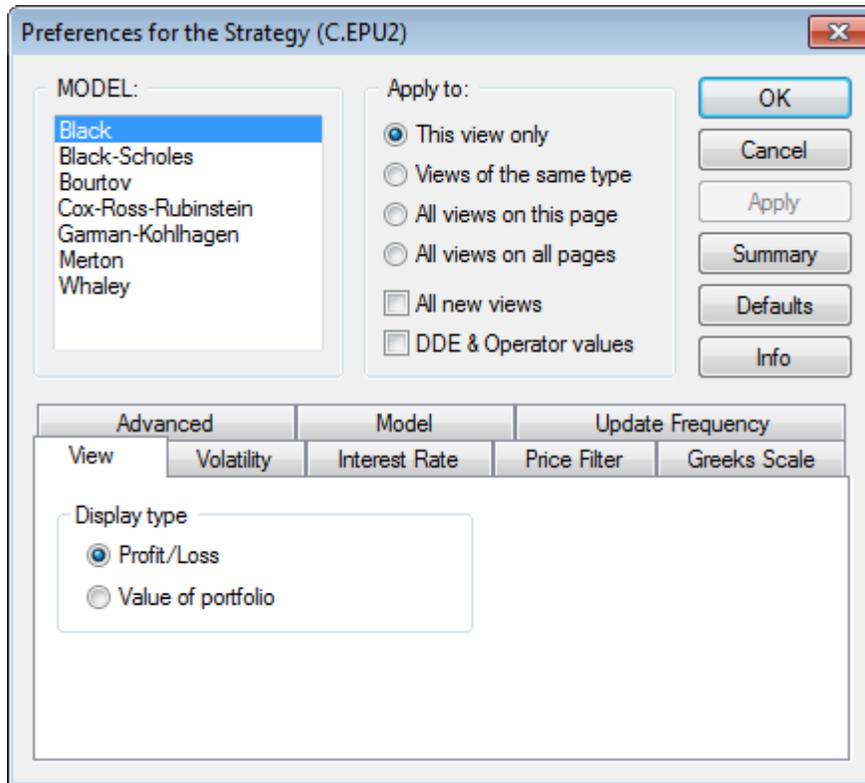
X-Axis type

Select the variable represented by the X-axis: **Strike Price** or **Delta**.

Mark as

Set the threshold for old prices, in hours, and stale movement, in percent.

Setting Strategy Analysis View Preferences



Display type

Select whether to display the P&L graph using profit/loss as a function of the underlying price or value of the portfolio as a function of price.

Setting Volatility Preferences

Volatility settings allow you to set the implied volatility type, evaluation method for average volatility, and select a volatility calculation type.

Advanced		Model		Update Frequency	
View	Volatility	Interest Rate	Price Filter	Greeks Scale	
Volatility for calculation <input type="radio"/> Apply vol.surface <input checked="" type="radio"/> Apply vol.curve <input type="radio"/> Use IV for Greeks&TheoV <input type="radio"/> Use IV for Greeks <input type="radio"/> Use Average Vol.		Implied Volatility Type <input checked="" type="radio"/> Traded <input type="radio"/> Momentary Average volatility Select evaluation method: <input type="text" value="Put - Call Separate"/>			

Volatility for calculation

Select one of:

- **Apply vol surface** = 3-D value from the Volatility Workshop
- **Apply vol curve** = 2-D value from the Volatility Workshop
- **Use IV for Greeks&TheoV** = Used in conjunction with the Implied Volatility Type, Traded or Momentary.
- **Use IV for Greeks** = Used in conjunction with the Implied Volatility Type, Traded or Momentary.
- **Use Average Vol** = Used in conjunction with the Average Volatility evaluation method.

The average volatility using Put-Call Separate and Put-Call Combined is calculated by taking a weighted average of the 2 implied volatilities for the strikes encompassing the at-the-money-strike.

For example, with the underlying at 1392.00 and the implied volatility of the 1390.00 calls at 26.02 and the implied volatility of the 1395.00 calls at 25.42 the average call volatility would be: $.6(26.02) + .4(25.42) = 25.78$. This volatility would be used to value all the calls. The average put volatility would be calculated the same way and that value would be used to value the puts. If the Put-Call Combined choice were selected, the call volatility and put volatility would be averaged and that volatility would be used for all the options series of that particular underlying.

Please note that theoretical value cannot be calculated using implied volatility. If you select the **Use implied volatility** checkbox, CQG uses implied volatility to calculate all the values except theoretical value, where it uses one of the selections from the dropdown list: Put-Call Separate, Put-Call Combined or Historical. However, if the **Use implied volatility** box is not selected, all the values are calculated using one of the three methods.

Implied Volatility Type

Select one of:

- **Traded** = Matches the options price with the underlying price, based on a time when the two prices were in sync, that is, the options price happened no later than 3 hours after the underlying price. This could lead to a value that is in sync but not current.

Using this value involves taking the synced underlying price (also referred to as the coherent underlying price), which is the close of the underlying instrument during the minute prior to the last option tick. However, if the underlying has not traded during this minute, the system uses the underlying tick closest to the time of the option trade, as long as it happened during the current trading day. If the options price is a closing value, the settlement price for the underlying is used as the coherent underlying price.

- **Momentary** = Matches the options tick with the nearest tick in the underlying, even if the underlying trade happened after the options price. Volatilities calculated this way may be off by a large amount if the underlying trade took place substantially before or after the options trade.

If you select this value, the calculation uses the most current underlying price and the most current options price. Volatilities calculated this way may be off by a large amount, if the underlying price has changed significantly since the last options tick. In other words, momentary implied volatility takes the most current underlying tick without matching it to the time of the options. This may or may not result in the same volatility as the traded implied volatility.

These selections are global, which means they apply to all models. (Implied volatility selections made on the **Model** tab are only relevant to the selected model.)

Average volatility

Select one of:

- **Put-Call Separate** = Two values, one for the calls and one for the puts, are calculated and given separately. These values are then used as the volatility input for the selected options model.
- **Put-Call Combined** = The separate call and put volatilities are averaged together and one value is given. This value is then used as the volatility input for the selected options model.
- **Historical Volatility** = Represents the standard deviation of a series of price changes measured at regular intervals. You define the Historical Volatility using either Percent or Logarithmic price changes. Percent changes assume that prices change at fixed intervals. Logarithmic changes assume that prices are continuously changing. Historical Volatility requires a period value. Constant value requires a percentage value.
- **Constant Volatility** = If selected, you must also select a percentage for the volatility. For example, if the selected contract was trading at 1300 and the volatility value selected was 10%, you would be implying an underlying price of 1300+ or - 10%, i.e., 1170-1430 over the next year.

Setting Interest Rate Preferences

These settings allow you to set the interest rate for various currencies.

Advanced		Model		Update Frequency	
View	Volatility	Interest Rate	Price Filter	Greeks Scale	
If the symbol is traded in currency:		USD			
use this interest rate:		<input checked="" type="radio"/> evaluated by contract:	EDAA		
		<input type="radio"/> constant value (%):	0.00		

First, select the currency using the drop down menu, then select the type of interest rate and set the value.

Setting Price Filter Preferences

These settings allow you to select the options and underlying prices that are used for the options displays. You can also choose to use most recent settlement prices.

Use Most Recent Settlement Prices

When you click this button, the system disables the other choices and yesterday's settlement price is used. If the market has already closed for the day, then today's settlement price is used.

Yesterday

Select this button to use yesterday's closing price.

No Filtering

Click this button to use the most current Bid, Ask, Last Trade, or Yesterday's Close as the operative option price.

Option price and Underlying price

Select the price type for both the Option and the Underlying price: **Bid**, **Ask**, **Bid/Ask average**, **Last Trade**, and **Yesterday's Close**.

If more than one price is selected, the system uses the most current of the selected prices.

For example, if only Last Trade and Yesterday's Close are selected, the last trade appears as long as that trade took place in the current day's session. Likewise, if Bid or Ask is selected along with Last Trade, the most recent Bid or Ask appears as long as it is more recent than the last trade. If not, the last trade appears.

Setting Greeks Scale Preferences

Greeks Scale settings allow you to set the price scale, time scale, and time direction and to choose percent or fractions for implied volatility and delta and gamma.

Advanced		Model		Update Frequency	
View	Volatility	Interest Rate	Price Filter	Greeks Scale	
Price scale <input type="text" value="Normalized (pr)"/>		Time scale <input checked="" type="radio"/> Days <input type="radio"/> Years		Implied Volatility <input checked="" type="radio"/> Percents <input type="radio"/> Fraction	
Time direction <input checked="" type="radio"/> Direct time (negative Theta) <input type="radio"/> Time left to expiration			Delta & Gamma <input checked="" type="radio"/> Percents <input type="radio"/> Fraction		

Price Scale

Select **Decimal**, **Normalized**, **Currency**, or **Tick Units**.

Time Scale

The time scale applies to Theta values. Select **Days** or **Years**. Years multiplies the daily Theta value by 365.

Implied Volatility

Select **Percents** or **Fraction**.

Time direction

The time direction applies to Theta values. Select **Direct time** or **Time left to expiration**. If **Direct Time** is selected, negative Theta values are reported rather than positive.

Delta and Gamma

Select **Percents** or **Fraction**.

Setting Advanced Preferences

Advanced settings allow you to select the underlying contract type and increase days to expiration.

View	Volatility	Interest Rate	Price Filter	Greeks Scale
Advanced		Model	Update Frequency	
Contract style <input checked="" type="radio"/> American <input type="radio"/> European		Underlying contract type <input checked="" type="checkbox"/> select automatically <input type="radio"/> Futures <input type="radio"/> Indices, Stocks, etc...	Dividends amount <input type="text" value="0"/> %	
Modifications Increase days to expiration by <input type="text" value="0"/>				

Not all options are available for all models:

- Black, Black-Scholes, Bourtov, and Garman-Kohlhagen – Modifications only
- Whaley – Modifications and Dividends amount
- Merton – Modifications, Underlying contract type, Dividends amount
- Cox-Ross-Rubinstein – All

Contract style

Select **American** or **European**.

Underlying contract type

Select **Futures** or **Indices, Stocks, etc.** or click the **select automatically** check box.

Type a value for the percentage of the underlying price for the dividends amount.

Modifications

Type a value for how many days you want to increase the expiration by. You can also use the arrows. This is useful for contracts that are deliverable or settle after the last trading day.

Setting Model Preferences

Model settings allow you to define parameters for each model. The parameters you set here apply to the model you have selected at the top-right of the window.

For each parameter, either select a new value from the list (click the field to open the menu) or enter a new value.

Preferences for the Volatility Workshop (EP)

MODEL:

- Black
- Black-Scholes
- Boutov
- Cox-Ross-Rubinstein
- Garman-Kohlhagen
- Merton
- Whaley

Apply to:

- This view only
- Views of the same type
- All views on this page
- All views on all pages
- All new views
- DDE & Operator values

OK
Cancel
Apply
Summary
Defaults
Info

View: Volatility Interest Rate Price Filter Greeks Scale
Advanced Model Update Frequency

Parameter	Value
IV Calculation Method	Brent
Foreign Interest Rate	0.050000
Iteration Number	50
Smoothing Factor	1

Setting Update Frequency Preferences

Because Greek values generally change slowly and updating them takes a lot of processing time, COG IC offers you the opportunity to set optimal update frequencies based on your preferences.

Update Frequency settings allow you to set the refresh period for average volatility, interest rate, and new/removed contract and to set update delays for theoretical value and the geeks.

View	Volatility	Interest Rate	Price Filter	Greeks Scale
Advanced		Model		
Update Frequency				
<input checked="" type="checkbox"/> Delayed updates for model values				
Theoretical value	1	sec.	Average Volatility	60
Delta & Gamma	10	sec.	Interest Rate	60
Vega, Theta, Rho	60	sec.	New/Removed Contracts	240

These preference do not apply to the Options Calculator.

Delayed updates for model values

This setting allows you to delay updates for particular model values. Select the check box, then enter delays, in seconds, for the theoretical value; Delta & Gamma; and Vega, Theta, Rho.

If this check box is cleared, the system updates the Greek and Theoretical values whenever there is a relevant change in the data.

Refresh period for

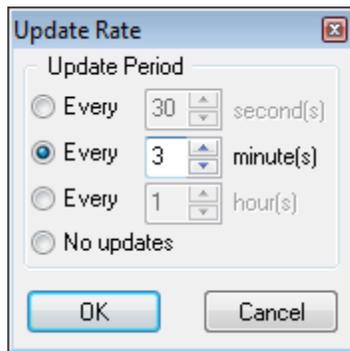
Enter refresh periods for Average Volatility, Interest Rate, and New/Removed Contracts.

Updating the Refresh Rate

The refresh rate is different from the update frequency rates set in preferences. While frequency rates dictate when calculations are updated, the refresh rate dictates when the particular options window view is updated.

To change the update rate

1. Click the **Setup** button.
2. Click **Update Rate**.



3. Click the rate you want to set and enter a value for the interval. To stop updates, click the **No updates** button.
4. Click **OK**.

Options Window

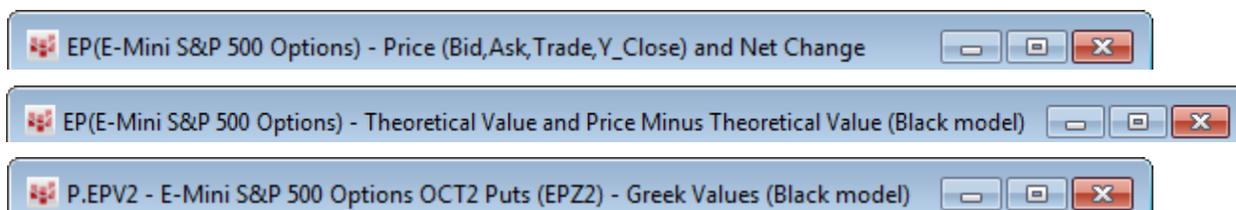
The Options Window has three views:

- Standard
- Greek
- Theoretical versus Underlying.

The Standard view changes based on the value you want displayed: LPrice, TheoV, Delta, Gamma, Theta, Vega, IV, Open Int, and Volume.

You can customize these views, so that they display information relevant to you.

The title bar indicates which view is active.



To open the Options window, click the **OptWnd** button on the toolbar. If the button is not displayed, then click the **More** button, and then click **Options**. You can also click the **Options** button and then click **Options Window**.

Standard view

EP(E-Mini S&P 500 Options) - Price (Bid,Ask,Trade,Y_Close) and Net Change

EP	JUL2 CALLS	JUL2 PUTS	AUG2 CALLS	AUG2 PUTS
UndPr 134525 ^A	134525 ^A	134525 ^A	134525 ^A	134525 ^A
DTE 3	3	3	31	31
EXP 07/20/12	07/20/12	07/20/12	08/17/12	08/17/12
VOL 17.73	17.73	16.70	15.52	15.52
IVS 0.00	0.00	0.00	0.00	0.00
IR 0.46	0.46	0.46	0.42	0.42
12800	6800 -425	45 -15	7475 -425	775 ^A
12850	6300 -425	45 ^B -25	7050 -425	825 ^A
12900	5825 -425	50 ^B -30	6650 -400	875 ^B
12950	5325 -425	85 ^A -10	6225 -400	950 ^B
13000	4675 ^A -175	85 ^B -30	5525 ^B -300	1050 ^B
13050	4050 ^B -325	105 ^B -35	5250 ^A -175	1150 ^B
13100	3600 ^B -300	150 ^A -20	4850 ^A -200	1325
13150	3250 ^A -200	185 ^A -20	4475 ^A -175	1450 ^A
13200	2800 ^A -200	235 ^A -20	4100 ^A -200	1525 ^B
13250	2350 ^A -200	285 ^B -30	3750 ^A -200	1675 ^B
13300	1850 ^B -300	370 ^B -30	3400 ^A -200	1825 ^B
13350	1525 ^A -225	480 ^B -20	3025 ^B -250	2000 ^B
13400	1125 ^B -275	650 ^A 0	2775 ^A -175	2200 ^B
13450	875 ^A -200	800 ^B -50	2425 ^B -225	2400 ^B
13500	625 ^A -175	1100 ^A +50	2125 ^B -225	2625 ^B
13550	405 ^A -170	1425 ^A +100	1875 ^B -225	2850 ^B
13600	245 ^B -145	1725 ^B +75	1625 ^B -225	3100 ^B
13650	160 ^A -105	2200 ^A +175	1450 ^A -150	3375 ^B

Enter a symbol here → EP

Underlying price → UndPr

Days til expiration → DTE

Expiration date → EXP

Volatility → VOL

Implied Volatility Shift → IVS

Interest Rate → IR

Strike price → 13300

Bid or ask → 13450

Last price net change
Content depends on your settings

Data in the top row includes:

UndPr = underlying price

DTE = number of calendar days until expiration

Exp = expiration date

Vol = default volatility used for calculations, default values is set in Options preferences:

Advanced		Model	Update Frequency	
View	Volatility	Interest Rate	Price Filter	Greeks Scale
Volatility for calculation <input type="radio"/> Apply vol.surface <input type="radio"/> Apply vol.curve <input checked="" type="radio"/> Use IV for Greeks&TheoV <input type="radio"/> Use IV for Greeks <input type="radio"/> Use Average Vol.		Implied Volatility Type <input checked="" type="radio"/> Traded <input type="radio"/> Momentary Average volatility Select evaluation method: Put - Call Separate		

IVS = implied volatility shift, sets the increase or decrease of all implied volatility values

IR = default interest rate calculated by taking 1 – near term T-Bill price

Data in the bottom row includes the strike price, the bid or ask price, and then a value based on your settings. For example, if the **LPrice** button is selected, then this value is last price net change. If the **Theta** button is selected, last price and theta is displayed.

In this example:

- pink text = yesterday extended colors
- red text = daily net down
- green text = daily net up

Colors can be [changed](#).

Greek view

The Greek view displays data for one month's call or put.

C.EPU2 - E-Mini S&P 500 Options SEP2 Calls (EPU2) - Greek Values (Black model)											
UndPr = 133625 ^A			DTE = 73			EXP = 09/21/12					
VOL = 17.28			IVS = 0.00			IR = 0.44					
Strike	Price B,A,TR,YC	Net Chg	Time	Und Pr	TheoVal	Imp Vol %	Delta %	Gamma %/pr	Theta pr/day	Vega pr/7%	Volume
12650	9075 ^B	-1125	07/10	133550	9103.7	20.34	74.08	0.00266	-26.798	193.114	0
12700	8675 ^B	-1125	07/10	133550	8702.5	20.09	72.87	0.00275	-27.097	197.657	0
12750	8300 ^B	-1100	07/10	133550	8326.0	19.94	71.53	0.00284	-27.539	202.387	0
12800	7900 ^B	-1100	07/10	133550	7924.9	19.64	70.26	0.00295	-27.686	206.577	0
12850	7550 ^B	-1050	07/10	133550	7573.3	19.54	68.77	0.00303	-28.165	211.122	0
12900	7175 ^B	-1050	07/10	133550	7197.0	19.30	67.35	0.00312	-28.349	215.130	0
12950	6800 ^B	-1050	07/10	133550	6820.8	19.03	65.89	0.00322	-28.444	218.896	0
13000	6500 ^B	-950	07/10	133550	6519.0	19.06	64.20	0.00327	-29.011	222.821	0
13050	6150 ^B	-950	07/10	133550	6167.7	18.84	62.61	0.00336	-29.094	226.083	0
13100	5800 ^B	-925	07/10	133550	5816.6	18.58	60.98	0.00345	-29.075	229.015	0
13150	5475 ^B	-900	07/10	133550	5490.3	18.40	59.27	0.00353	-29.127	231.652	0
13200	5150 ^B	-875	07/10	133550	5164.0	18.18	57.53	0.00360	-29.066	233.881	0
13250	4825 ^B	-875	07/10	133550	4837.9	17.93	55.74	0.00368	-28.889	235.683	0
13300	4525 ^B	-825	07/10	133550	4536.6	17.75	53.89	0.00374	-28.763	237.033	0
13350	4150 ^B	-125	15:56	133625	4122.5	17.06	51.96	0.00391	-27.741	237.889	0
13400	4125 ^A	+150	15:54	133625	4096.4	17.95	50.16	0.00372	-29.239	238.188	0
13450	3675 ^B	-125	15:56	133600	3560.0	16.67	47.95	0.00400	-27.112	237.890	0
13500	3300 ^B	-100	15:56	133625	3273.5	16.39	45.85	0.00405	-26.551	236.930	0
13550	3300 ^A	+150	15:56	133600	3283.2	17.32	44.35	0.00381	-27.933	235.829	0
13600	2800 ^B	-100	15:56	133600	2784.5	16.05	41.66	0.00407	-25.577	233.016	0
13650	2575 ^B	-75	15:45	133575	2570.0	15.94	39.59	0.00404	-25.088	230.095	0
13700	2325 ^B	-125	15:56	133625	2301.0	15.54	37.26	0.00407	-24.033	226.006	0
13750	2325 ^A	+100	15:56	133625	2300.1	16.30	36.07	0.00384	-24.928	223.581	0
13800	1925 ^B	-100	15:45	133575	1919.0	15.29	33.08	0.00396	-22.655	216.512	1
13850	1925 ^A	+100	15:56	133625	1901.8	15.91	31.96	0.00376	-23.243	213.486	0
13900	1550 ^B	-100	15:45	133575	1543.8	14.87	28.75	0.00384	-20.719	203.639	0
13950	1575 ^A	+100	15:56	133600	1560.7	15.60	28.00	0.00361	-21.461	201.080	0
14000	1225 ^B	-100	15:33	133600	1212.2	14.43	24.48	0.00364	-18.533	187.718	0

Data in the top row includes:

UndPr = underlying price

DTE = number of calendar days until expiration

Exp = expiration date

Vol = default volatility used for calculations

IVS = implied volatility shift, sets the increase or decrease of all implied volatility values

IR = default interest rate calculated by taking 1 - near term T-Bill price

You can choose the columns to be displayed.

Move to another month by clicking the <>> button. Move between calls and puts by clicking the **Calls** button and the **Puts** button.

Note: CQG uses coherent ('at the time") price evaluation to calculate Greek values. In other words, the system uses the underlying value at the time the option traded to calculate Greek values.

Theoretical versus underlying (T/U) view

The T/U view displays data according to strike price.

	13300	13350	13400	13450	13500	13550	13600	13650	13700	13750	13800	13850	13900
133150	4173	3933	3703	3482	3270	3068	2875	2691	2516	2350	2192	2042	1900
133175	4187	3946	3715	3493	3281	3079	2885	2701	2525	2368	2200	2050	1908
133200	4200	3958	3727	3505	3293	3089	2895	2711	2535	2367	2208	2058	1915
133225	4213	3971	3739	3517	3304	3100	2906	2720	2544	2376	2217	2066	1923
133250	4226	3984	3751	3528	3315	3111	2916	2730	2553	2385	2225	2074	1930
133275	4239	3996	3763	3540	3326	3122	2926	2740	2563	2394	2234	2082	1938
133300	4252	4009	3776	3552	3337	3132	2937	2750	2572	2403	2242	2090	1946
133325	4265	4022	3788	3563	3349	3143	2947	2760	2581	2412	2251	2098	1953
133350	4278	4034	3800	3575	3360	3154	2957	2770	2591	2421	2259	2106	1961
133375	4292	4047	3812	3587	3371	3165	2968	2779	2600	2430	2268	2114	1969
133400	4305	4060	3825	3599	3382	3176	2978	2789	2610	2439	2277	2122	1977
133425	4318	4073	3837	3611	3394	3186	2988	2799	2619	2448	2285	2131	1984
133450	4331	4085	3849	3622	3405	3197	2999	2809	2629	2457	2294	2139	1992
133475	4345	4098	3862	3634	3417	3208	3009	2819	2638	2466	2302	2147	2000
133500	4358	4111	3874	3646	3428	3219	3020	2829	2648	2475	2311	2155	2008
133525	4371	4124	3886	3658	3439	3230	3030	2839	2657	2484	2320	2164	2016
133550	4385	4137	3899	3670	3451	3241	3041	2849	2667	2494	2329	2172	2024
133575	4398	4150	3911	3682	3462	3252	3051	2860	2677	2503	2337	2180	2031
133600	4412	4163	3924	3694	3474	3263	3062	2870	2686	2512	2346	2189	2039
133625	4425	4176	3936	3706	3486	3274	3072	2880	2696	2521	2355	2197	2047
133650	4439	4189	3949	3718	3497	3285	3083	2890	2706	2530	2364	2205	2055
133675	4452	4202	3961	3730	3509	3297	3094	2900	2715	2540	2373	2214	2063
133700	4466	4215	3974	3742	3520	3308	3104	2910	2725	2549	2381	2222	2071
133725	4479	4228	3986	3754	3532	3319	3115	2921	2735	2558	2390	2231	2079
133750	4493	4241	3999	3767	3544	3330	3126	2931	2745	2568	2399	2239	2087
133775	4506	4254	4012	3779	3555	3341	3137	2941	2755	2577	2408	2248	2095

Data in the top row includes:

UndPr = underlying price

DTE = number of calendar days until expiration

Exp = expiration date

Vol = default volatility used for calculations

IVS = implied volatility shift, sets the increase or decrease of all implied volatility values

IR = default interest rate calculated by taking 1 – near term T-Bill price

Options Window Toolbar

The Options toolbar includes these buttons:

Greek button

Displays the composite Greek page.

Theoretical Versus Underlying button

Displays the current theoretical value for a series of option strikes shown on the horizontal axis versus a range of underlying futures prices shown on the vertical axis.

Last Price button

Displays the last price and the net change from the previous trading day's close for each option series.

TheoV button

Displays the current theoretical value and the difference between the current price (last price) and the current theoretical value of the option.

Delta button

Displays last price and [delta](#).

Gamma button

Displays last price and [gamma](#).

Theta button

Displays last price and [theta](#).

Vega button

Displays last price and [vega](#).

Implied Volatility button

Displays the last price with the current [implied volatility](#) for each series of the underlying index or commodity.

Open Interest button

Displays the last price and open interest for each option series.

Volume button

Displays the last price and volume for each option series.

WhatIf button

Opens the Options Parameters window.

Actuals button

Copies the values from the **Actual** column to the **What if** column without closing the window.

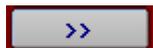
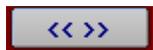
Calls button

Changes a Greek or T/U display from puts to calls.

Puts button

Changes a Greek or T/U display from calls to puts.

<<>> button



Right-click the <<>> button to move forward to month after the one currently displayed.

Once you reach the last available month, the button then moves you back. The direction is indicated by the << button.

Click the << button to move back to the month before the one currently displayed.

Once you reach the first available month, the button again moves you forward. The direction is indicated by the >> button.

These buttons are active with the Greek and Theoretical versus Underlying views.

Pause button

Pauses data updates and value recalculations.

Options displays constantly update during trading hours. Consequently, when the markets are active, the displays could be changing quite rapidly, not allowing you to fully digest the effects of each change. To alleviate this problem, you can pause without losing data.

Right-click this button to update the data immediately and update the rate.

Settle button

Click this button to view options data based on the most recent settlement price rather than the most recent tick data.

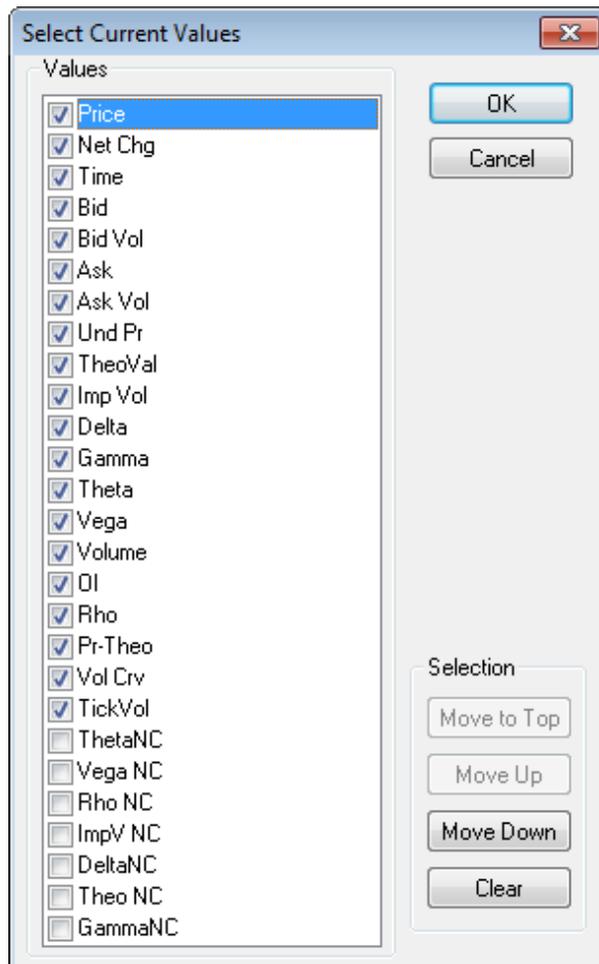
Prefs button

Opens the [Options Preferences](#) window.

Customizing Columns

You are able to customize the columns displayed in the Greek view.

1. Click the **Setup** button.
2. Click Customize Columns.



3. Select and clear the check boxes for the columns you want to show and hide.
4. To move the columns, use the **Move to Top**, **Move Up**, and **Move Down** buttons.

Column Names

Column Label	Full Name
Ask	Ask Price
Ask Vol	Ask Volume
Bid	Bid Price
Bid Vol	Bid Volume
Delta	Delta
DeltaNC	Delta Net Change
Gamma	Gamma
GammaNC	Gamma Net Change
Imp Vol	Implied Volatility
ImpV NC	Implied Volatility Net Change
Net Chg	Net Change
OI	Open Interest
Price	Price
Pr-Theo	Price - Theoretical Value
Rho	Rho
Rho NC	Rho Net Change
Theo NC	Theoretical Value Net Change
TheoVal	Theoretical Value
Theta	Theta
ThetaNC	Theta Net Change
TickVol	Tick Volume
Time	Time
Und Pr	Underlying Price
Vega	Vega
Vega NC	Vega Net Change
Volume	Volume
Vol Crv	Volatility Curve Value

Changing the Order of Columns

To toggle the order of the columns between months and puts/calls for the LPrice, TheoV, Delta, Gamma, Theta, Vega and IV views:

1. Click the **Setup** button.
2. Select **Change Order**. A months view changes to puts/calls and a puts/calls view changes to months.

Months view:

EP	SEP2 CALLS	SEP2 PUTS	OCT2 CALLS	OCT2 PUTS	NOV2 CALLS	NOV2 PUTS
UndPr	133550 ^A	133550 ^A	134575 ^A	134575 ^A	134575 ^A	134575 ^A
DTE	73	73	101	101	129	129
EXP	09/21/12	09/21/12	10/19/12	10/19/12	11/16/12	11/16/12
VOL	17.71	17.54	17.76	17.48	0.00	0.00
IVS	0.00	0.00	0.00	0.00	0.00	0.00
IR	0.44	0.44	0.45	0.45	0.45	0.45

Puts/Calls view:

EP	SEP2 CALLS	OCT2 CALLS	NOV2 CALLS	SEP2 PUTS	OCT2 PUTS	NOV2 PUTS
UndPr	133550 ^A	134575 ^A	134575 ^A	133550 ^A	134575 ^A	134575 ^A
DTE	73	101	129	73	101	129
EXP	09/21/12	10/19/12	11/16/12	09/21/12	10/19/12	11/16/12
VOL	17.71	17.76	0.00	17.54	17.79	0.00
IVS	0.00	0.00	0.00	0.00	0.00	0.00
IR	0.44	0.45	0.45	0.44	0.45	0.45

Marking At-the-Money

It's possible to add an at-the-money indicator on the options window. Here, you see it in orange:

8000	12 _B	-611	.....	5 _B	-638	218 _A	+5	797	-144
8050	393	-185	.....	609	-151	234 _A	+5	765	-141
8100	232 _B	-302	.....	576	-148	251 _A	+5	733	-138
8150	315	-176	.....	544	-144	269 _A	+5	702	-135
8200	280	-170	.....	513	-140	288 _A	+5	672	-132
8250	.....	.....	.....	483	-136	279 _B	-24	642	-130
8300	.....	.....	.....	454	-132	299 _B	-25	613	-127
8350	.....	.....	.....	426	-129	350 _A	+4	585	-124
8400	.....	.....	.....	399	-126	373 _A	+4	558	-121
8450	.....	.....	.....	399 _A	-126	404 _A	+11	531	-118
8650	.....	326	+117	305 _A	-120	514 _A	+12	.....	.....
8700	.....	8 _B	-230	284 _A	+23	531	+105	.....	.....
8750	.....	403	+135	236 _B	-6	562	+110	.....	.....
8800	.....	446	+145	218 _B	-6	70 _B	-524	.....	.....
8850	.....	177 _B	-159	201 _B	-6	5 _B	-622	.....	.....

If there is a price given for the strikes immediately above and immediately below the current underlying price, the system draws a solid line between the two strikes.

If there is a quote for the strike price immediately above the current underlying price, but no quote in the strike price immediately below the current underlying price, the system looks for the next lowest strike, below the current underlying price, with a price quote, and place a dashed line below that price.

If there is a quote for the strike price immediately below the current underlying, but no activity in the strike immediately above the current underlying price, the system displays a solid line underneath the lower strike.

If there has been no activity in either strike, immediately above or immediately below the current underlying price, the system does not display any at-the-money indicator.

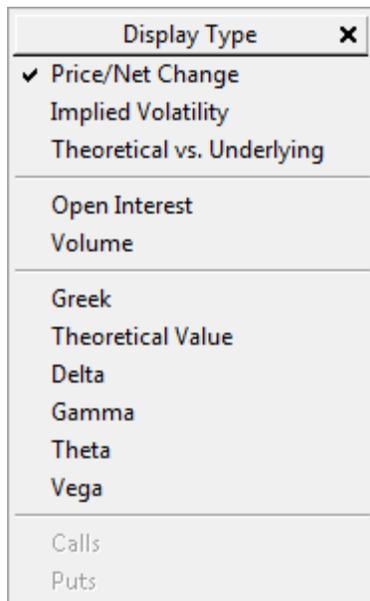
To mark the at-the-money strike:

1. Click the **Setup** button
2. Select **Mark ATM**.

The color of the line can be [changed](#).

Changing the Display Type

In addition to changing the display of the standard view options window with the toolbar buttons, you can right-click the **Setup** button and then click the display you want:



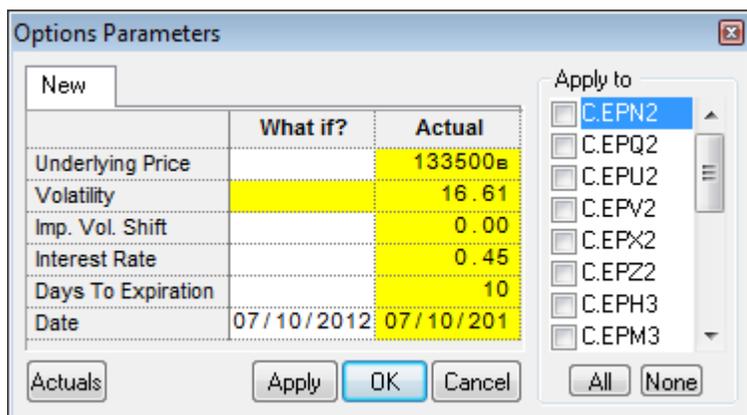
Opening Another Application from an Options Window

Right-click the options window, and then click an application name, including:

- Time & Sales
- Snap Quote
- Chart
- Options Calculator
- Options Graph
- Volatility Workshop

Setting What If Options Parameters

On the **Options Parameters** window, you can change any or all of several variables for different series: Underlying Price, Volatility, Implied Volatility Shift, Interest Rate, Days to Expiration (days until the most distant expiration selected in the Apply to area), and Date.



1. Click the **What If** button. You can also right-click on the Options window.
2. Select the series to which the changes are applied from the **Apply to** column. Click the **All button** to select every series in the selected commodity.
3. Enter the changes in the **What if** column.

Click the **New** tab to create another What If set.

Click the **Actuals** button to clear any What Ifs that have been applied to the options window.

Copying Data to Excel

To facilitate additional evaluation of options data, you may decide to copy the information into a Microsoft Excel spreadsheet.

1. Right-click the data to be copied from the options display.
2. Select Copy to Excel.
3. Open the **Excel** application.
4. Select the cell where the data should be pasted.
5. Right-click that cell.
6. Select **Paste**.

Note: The DDE model preference is Black. Therefore, if the model chosen for the options display is not Black, then the value in the Excel spreadsheet will not agree with the value in the options display, unless you have selected the DDE & Operator Values checkbox in the Apply to section of the Preferences for Options Window.

Placing Orders from the Options Window

1. Right-click on the options window.
2. Click Place an Order.

The Order Ticket, Simple Order Ticket, or DOMTrader opens depending on your system settings. (**Setup > System Preferences > Misc > Preferred Order Entry Display**).

Options Calculator

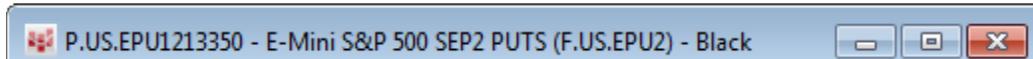
CQG designed the Options Calculator to calculate and display the theoretical and Greek values of an option contract based on user-defined What if values. You can display outputs for a single set of What if values or in graphical form over a continuously varying range of What ifs.

To open the Options Calculator, click the **OptCalc** button on the toolbar to launch the Options Calculator. If the button is not displayed, click the **More** button, and then click **Options Calculator**. You can also click the **Options** button and then click **Options Calculator**.

Options Calculator Components

The Options Calculator includes these areas:

Title bar



Contract area

Contract	
Symbol	EP
Option	SEP2 PUT
Strike	13350
Model	Black

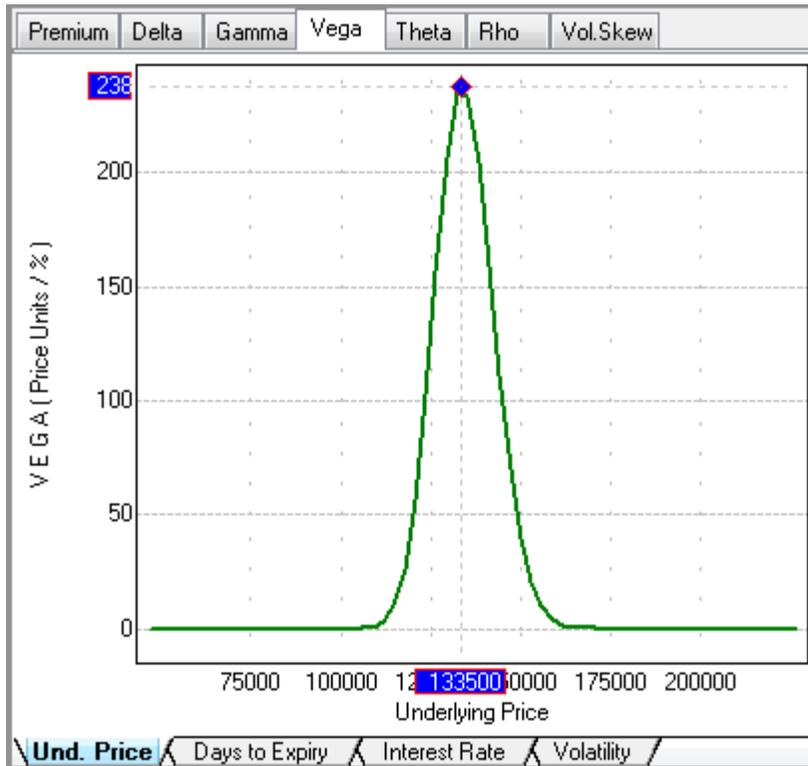
Inputs area

Inputs		
	What if...	Actuals
Underlying Price		133500€*
Option Price		3250€*
Volatility, %		13.57
Interest Rate, %		0.44
Days to Expiry		73
Date	07/10/2012	07/10/2012
* Yesterday Price		

Calculate area

CALCULATE RESULTS FOR :		<input checked="" type="radio"/> Theoretical Value <input type="radio"/> Implied Volatility	
Premium	3228.5	Vega	237.859
Delta	-48.75 %	Theta	-22.067
Gamma	0.00492	Rho	-6.457

Graph area



Options Calculator Toolbar

These buttons are common to both the options window and the options calculator:

[Actuals](#)

[Puts](#)

[Calls](#)

[Prev/Next](#)

[Pause](#)

[Settlement](#)

[Prefs](#)

The Options Calculator toolbar also includes these buttons:

FullScr button

Displays the Options Calculator graph across the entire width of the CQG window, hiding the Contract and Input sections.

Rescale button

Re-adjusts the scales.

Futures button

Switches from an FX OTC view to a futures view.

FXOTC button

Click this button to view OTC Foreign Exchange contracts.

The COG FX OTC Options Calculator allows users to evaluate several types of OTC cross currency options. Currently users can evaluate 4 types of options: Vanilla OTC Spot, Exotic Vanilla Barrier, Exotic Binary AON and Exotic Lookback.

To use the FX OTC Options Calculator, you must specify:

- a model
- underlying asset price
- strike price
- interest rate
- volatility
- days until expiration
- specific model parameters.

When these values are given, the Options Calculator evaluates the theoretical value or implied volatility (if options price was specified) and all Greeks for the "virtual contract."

Using the Options Calculator

Using the **[Tab]** key (to move to the next cell) and **[Shift] + [Tab]** keys (to move to the previous cell) keys facilitates moving around in the **Options Calculator**.

Using the Options Calculator involves:

1. Selecting the desired instrument symbol.
2. Inputting the desired series.
3. Selecting a model.
4. Inputting the **What if** values (if desired).
5. Choosing a type of graph (top tabs).
6. Selecting a view (bottom tabs).

Selecting a Symbol

To begin using the Options Calculator you must:

Enter the commodity symbol without any month indicator.

Example: JY

Selecting the Class and Expiration Month

Once you have entered the desired symbol, a drop-down list appears in the Option row of the Contract section.

Select the desired class and expiration month from the drop-down list associated with the Option row in the Contract section.

Selecting the Strike

After you have selected a symbol, class and expiration month, a drop-down list appears in the **Strike** row.

Select the desired strike price.

After a series is selected, the **Actuals** column is filled in with the most recent values.

Note: Prices indicated by an asterisk in the Actuals column are yesterday's values.

Selecting a Model

Options pricing models produce theoretical values for an option contract based on five inputs: **Underlying Price**, **Strike Price**, **Time to Expiration**, **Interest Rate**, and **Underlying Volatility**.

CQG offers seven basic option models that serve as the framework for valuing options: Black, Black-Scholes, Bourtov, Cox-Ross-Rubinstein, Garman-Kohlhagen, Merton, and Whaley.

1. Click the drop down arrow in the **Model** row in the **Contract** section.
2. Select the desired model.
Or
 1. Click the **Setup** button.
 2. Select Preferences.
 3. Select a model from the list.
 4. Click the **OK** button to close the **Preferences for the Options Calculator** window.

Inputting What Ifs

	Inputs	
	What if..	Actuals
Underlying Price	133500	133500
Option Price		7600 _A *
Volatility, %	10.8	31.75
Interest Rate, %	0.3	0.44
Days to Expiry	120	73
Date	05/24/2012	07/10/2012
		* Yesterday Price

The **Inputs** section allows you to enter new values for **Underlying Price, Options Price, Volatility, Interest Rate, Days to expiration and/or expiration Date** and to see what effect those changes will have on the Greek, theoretical and implied volatility values. You can see how implied volatility is impacted if the price were to change. You can also see how changes in the What if values impact prices.

You can enter a number in any enabled box in the **What if** column. When you have chosen to calculate results for Implied Volatility, the system replaces the **Premium** box with the **Imp. Vol.** box.

Changing the Expiration Date

Enter either the number of days until expiration or the expiration date in the **Days to Expiry** box

or enter the expiration date in the **Date** box.

One adjusts based on the other.

Additionally, users use the function keys to change the date:

- F2** Changes the date to the first day of the year.
- F3** Restores the current date.
- F4** Displays the calendar, allowing users to select a date.

[Enter].

Viewing Summary Statistics

CALCULATE RESULTS FOR :		<input type="radio"/> Theoretical Value	
		<input checked="" type="radio"/> Implied Volatility	
Imp. Vol.	14.26 %	Vega	304.821
Delta	51.58 %	Theta	-18.077
Gamma	0.00365	Rho	-14.299

In the **Calculate Results For** section of the **Options Calculator**, you can view the Greek values for the selected underlying price. Additionally, you can see the premium value when the **Theoretical Value** radio button is selected or the implied volatility when the **Implied Volatility** radio button has been selected.

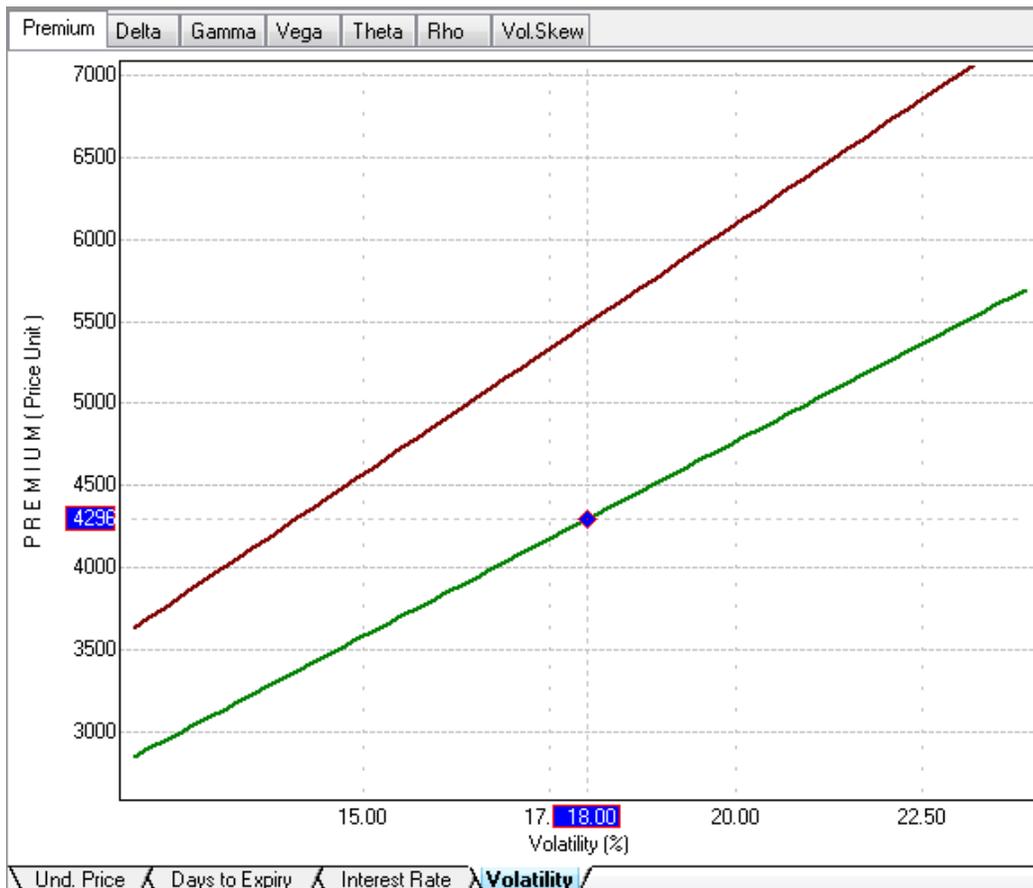
Using the Options Calculator Graph

The **Options Calculator** allows you to view graphically the **Premium, Delta, Gamma, Theta, Vega, Rho** and **Volatility Skew** as a function of **Underlying Price, Days to Expiration, Interest Rate** or **Volatility**. The display indicates the current X and Y values by placing a diamond on the curve and highlighting the axis values in blue.

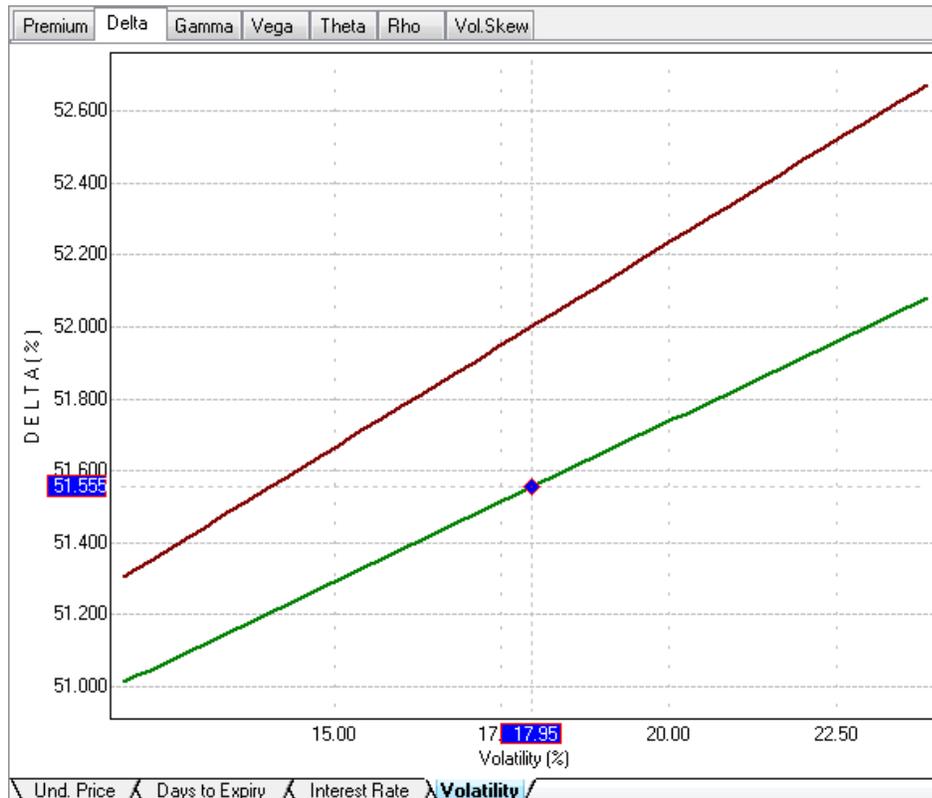
1. Click one of the top tabs (**Premium, Delta, Gamma, Theta, Vega, Rho** or **Volatility Skew**) to set the vertical axis value.
2. Click one of the bottom tabs, **Und Price, Days to Expiry, Interest Rate** or **Volatility** to establish the horizontal axis variable.

Note: The bottom tabs are disabled when a Volatility Skew graph is displayed.

Premium



Delta

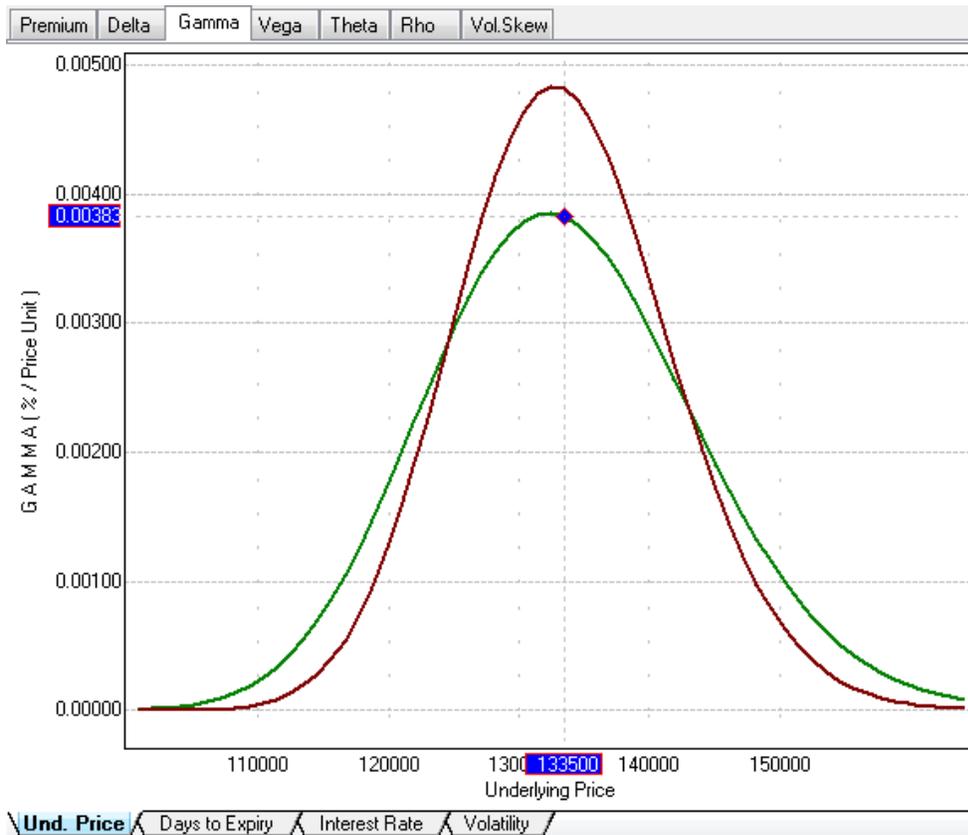


Delta represents the change in theoretical value associated with a change in the price of the underlying. When stating delta values, **CQG** multiplies the individual contract deltas by 100.

Example: A Delta of 86 means that the option value will change by 86% of the underlying value.

The Delta tab displays the Delta versus Underlying Price, Days to Expiration, Interest Rates or Volatility, given the model selected, the Underlying Price, Option Price, Volatility, Interest Rate, and Days to Expiration inputs.

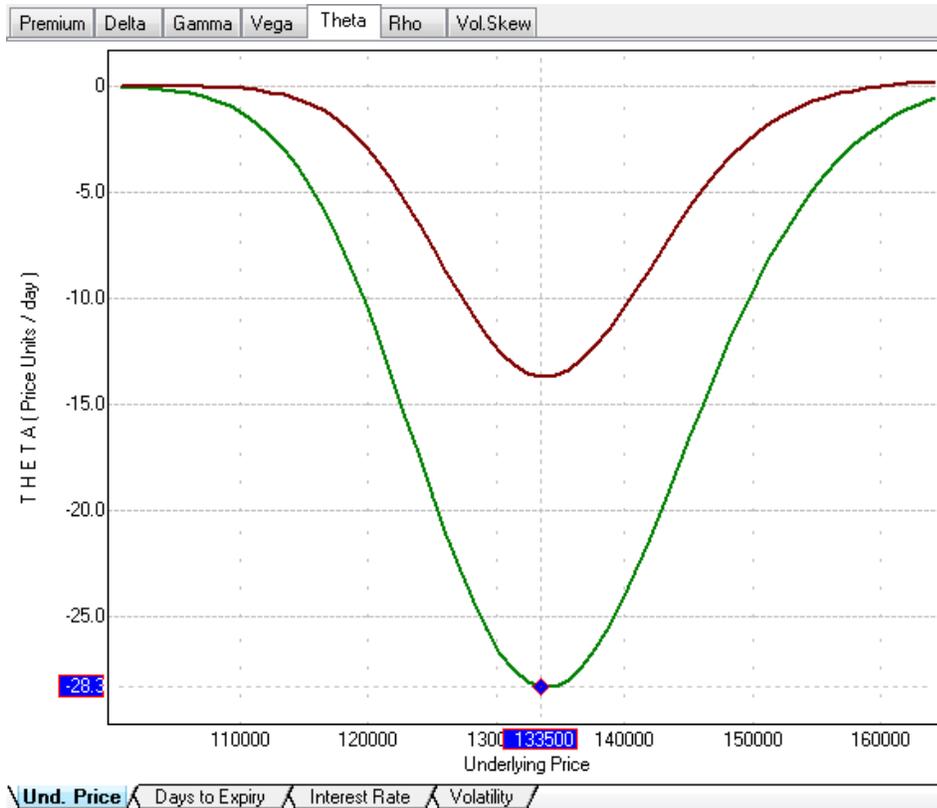
Gamma



Gamma represents the rate of change in the delta.

Example: A Gamma of .004 means that for every \$1.00 change in the value of the underlying, the delta will change by .4

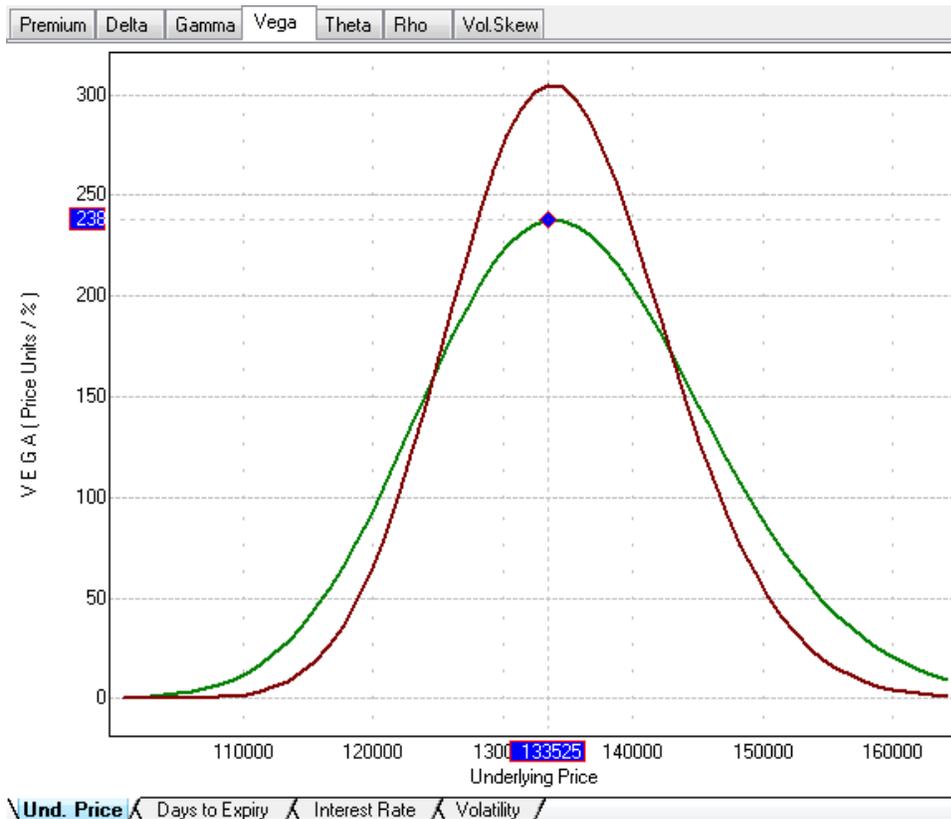
Theta



Theta, also known as the time decay factor, represents the rate of change in the theoretical value with respect to time. It is generally expressed as a negative number.

Example: A Theta of $-.057$, for example in the S&Ps, means that each day, solely as a result of the time decay, the option loses $.057$ points.

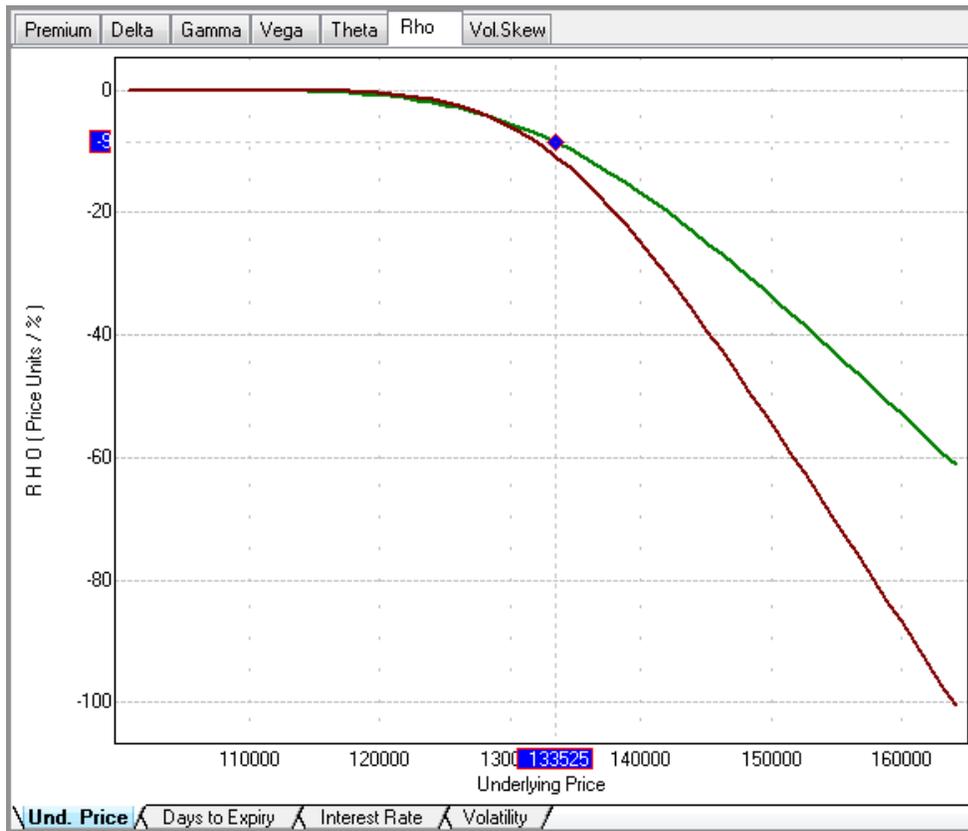
Vega



Vega represents the rate of change in theoretical value with respect to a change in volatility.

Example: A Vega of .25 indicates that an increase of one percentage point in the volatility of the underlying would result in a $\frac{1}{4}$ point increase in the theoretical value of the option.

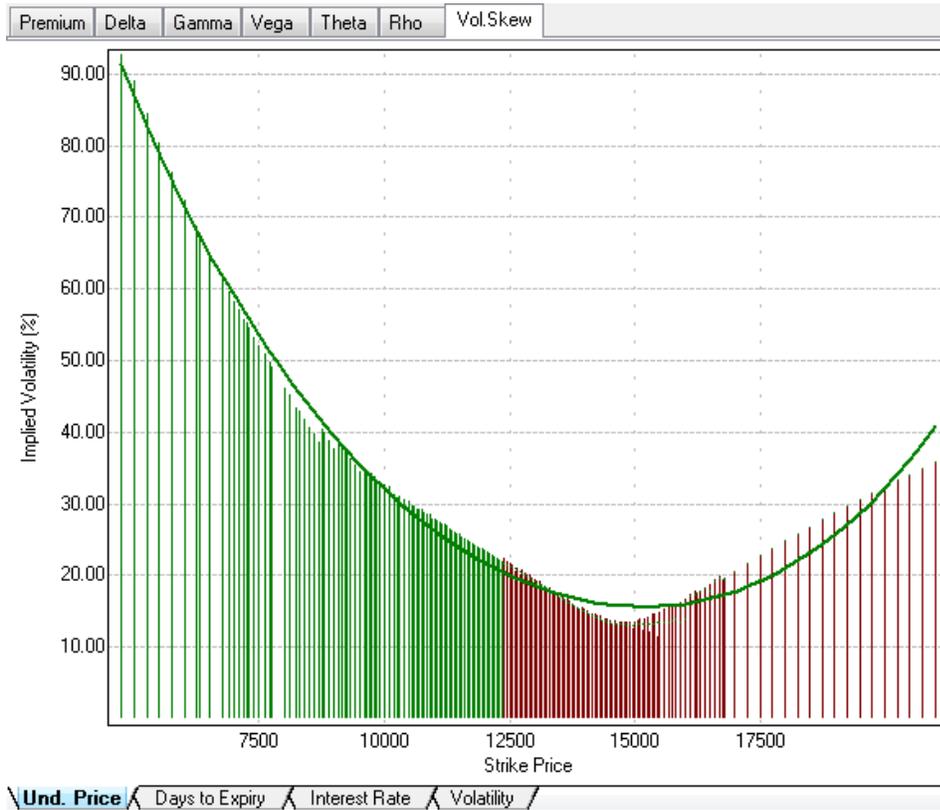
Rho



Rho quantifies the change in theoretical value with respect to a 1-percentage point change in the interest rate.

Example: A Rho of -25.00 indicates that an increase of one percentage point in the assumed interest rate would result in a \$25.00 decrease in the theoretical value of the option.

Volatility Skew



The **Volatility Skew** tab displays a graph of Implied Volatility vs. Strike Price for each currently traded strike. Additionally, it displays a polynomial curve fit to the Implied Volatilities calculated from yesterday's settlement prices. Contracts that have traded on the current day are displayed in a separate user-selected color.

Using Cursors with an Options Calculator Graph

As in a **Chart** view, you can activate vertical and horizontal cursors in an **Options Calculator** view.

To use a vertical or horizontal cursor:

1. Click the horizontal (vertical) scale to activate the vertical (horizontal) cursor.

The cursor value box is gray.

2. Drag the mouse to position the cursor at the desired spot.
3. Click to anchor the cursor at the desired point.

The cursor value box turns brown.

To remove a vertical or horizontal cursor:

1. Click an anchored cursor value box to activate the cursor.
2. Right click the active cursor value box.

Information Displayed in an FX OTC View

Contract		
Currencies	EURUSD	
Option Type	Exotic Vanilla Barrier	
Option Style	European	
Call / Put	PUT	
Model	Exotic Barrier	
Currencies Info		
	Put Ccy	Call Ccy
Symbol	EUR	USD
Amount	1,000.0	1,225.0
Spot	1.2251	0.81626
Strike	1.225	0.816327
Option Price	0	0
Interest Rate, %	0	0.965
Volatility, %	8.94	
Days to Expiry	90	
Dates		Delta in Days
Today	07/10/2012	
Spot Date	07/19/2012	9
Expiry Date	10/17/2012	90
Delivery Date	10/19/2012	2
Model Specific Parameters		
Barrier Type	Up and In	
Barrier Value	95	
Barrier Rebate	0	

When using the FX OTC Options Calculator, you must input Contract, Currency, Date and Model Specific Parameter information.

You can collapse the **Contract**, **Currencies Info** and/or **Dates-Delta in Days** views, so that only the section heading shows.

To collapse a section view, click the – button to left of the section header.

To re-expand a section view, click the + button to the left of the section header.

Contract

These values should be entered in the Contract area:

Parameter	Description
Currencies	The cross currencies being analyzed.
Option Type	The type of options being analyzed. Choices include: <ul style="list-style-type: none"> • Vanilla OTC Spot • Exotic Vanilla Barrier • Exotic Binary AON • Exotic Lookback
Options Style	Describes the time restrictions relevant to exercising the option. Values: American Options European Options
Call/Put	The type of options being displayed.
Model	The model used. Values: Cox-Ross-Rubinstein Garman-Kohlhagen

Currencies Info

These values should be entered in the Currencies Info area:

Parameter	Description
Symbol	Currency symbol, for example, USD or EUR.
Amount	Input the amount of the first currency. The display then calculates the amount of the second currency, based on current market prices.
Spot	Enter a theoretical spot market price for the first currency.
Strike	Enter a strike price value.
Option Price	Enter a theoretical option price, if implied volatility is the selected calculation value.

Parameter	Description
Interest Rate %	Enter separate interest rates for the currencies involved. The defaults represent the interest rates based on the settings selected in the Interest Rate tab of the Preferences window.
Volatility%	Enter an assumed volatility value, if Theoretical Value is the selected calculation value.
Days to Expiry	Enter the number of days until expiration.

Note: You can change the dependent and independent relationship by left clicking on the currency header in the dependent column. Any values that have been derived through the CQG data line or given by a CQG data provider are displayed in a special color, green by default. If you change one of these values, its color changes to black.

Dates and Delta in Days

The **Dates and Delta in Days** section displays four dates in addition to the difference in days between the date in one row and the date in the row immediately above. The key dates are:

- Today
- Spot Date
- Expiry Date
- Delivery Date

You can enter either a date in the **Dates** column or **Delta** values in the **Delta in Days** column. When you make changes in one column, values in other columns change as appropriate.

Model Specific Parameters

In addition to contract information, you must enter the following model specific parameters for each option type:

Vanilla OTC Spot

The Vanilla OTC Spot option type allows you to choose between the Cox-Ross-Rubinstein model and the Garman Kohlhagen model. If you choose the Cox-Ross Rubinstein model, you must also designate the following model specific parameters.

Parameter	Description
Iteration Number	The number of calculations used to arrive at the expiration value.
Smoothing Factor	Smooths out the model's Theoretic Value curve. Input a number from 0-10. Higher numbers produce a smoother curve. However, they also increase the error factor, especially in the Greek values.

Exotic Vanilla Barrier

Parameter	Description
Barrier Type	Way of describing the movement of the underlying versus the strike price. Choices include: Up and In, Up and Out, Down and In, Down and Out.
Barrier Value	Threshold price an underlying must reach for the option to have value.
Barrier Rebate	Price that is paid to the holder of an option if it expires worthless.

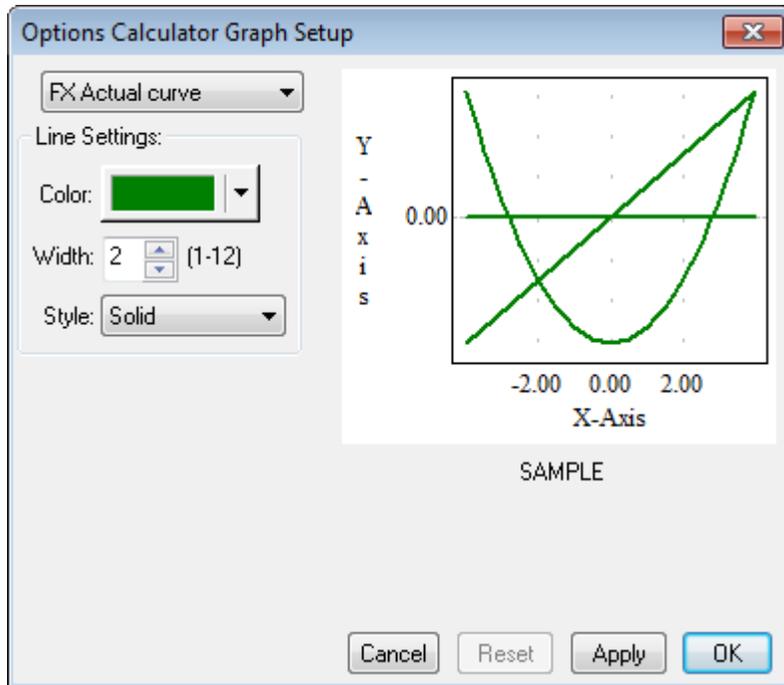
Exotic Binary AON

There are no parameters for the **Exotic Binary AON** option type.

Exotic Lookback

Parameter	Description
Lookback Type	Specify the brand of lookback. Values: Floating strike Fixed strike
Lowest Price	The lowest price of the underlying within the life of the contract.
Highest Price	The highest price of the underlying within the life of the contract.

Selecting the Properties for the Options Calculator Graph Lines



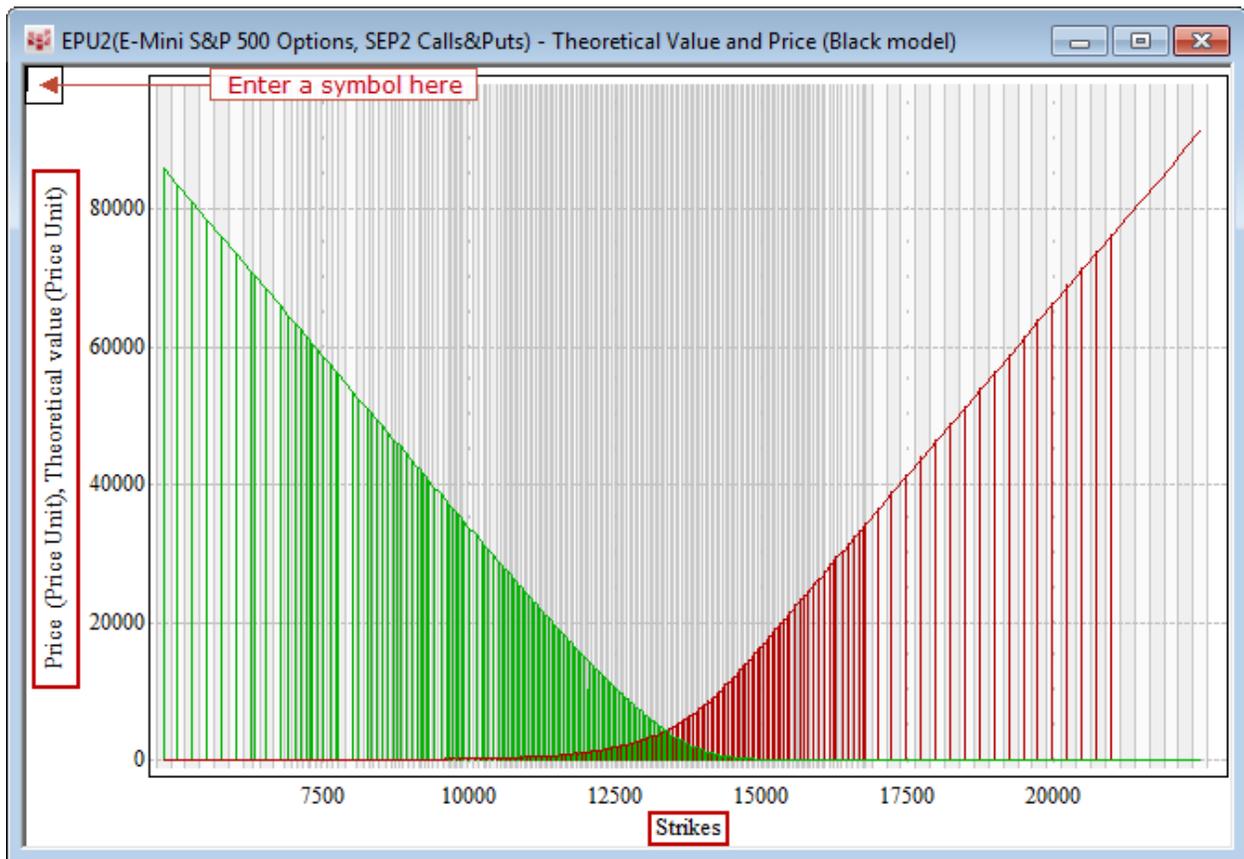
In addition to the colors selected in the **Select Colors** window, you can select the colors for the **Options Calculator** graph lines separately.

1. Right click anywhere within the **Options Calculator** graph. This displays the **Options Calculator Graph Setup** window.
2. Select the curve to be changed from the drop-down list.
3. Click the drop-down list associated with **Color**.
4. Select the desired color for the selected curve from the color palette.
5. Select the width (in pixels, from 1-12) for the selected curve.
6. Select the desired line style. Choices include: **Solid**, **Dash**, **Dash Dot** and **Dash Dot Dot**.

Options Graph

The Options Graph application allows you to fully customize an options graph.

To open the Options Graph, click the **OptGrph** button on the toolbar. If the button is not displayed, click the **More** button, and then click **Options Graph**. You can also click the **Options** button and then click **Options Graph**.



Options Graph Toolbar

Most of the buttons on this toolbar are the same as the [Options window toolbar](#).

The Options Graph has these additional buttons:

Both button

Displays both calls (green) and puts (red).

Display button

Opens the Setup Options Graph Contents window.

Vol/OI button

Visible	Selected
	Selected
Graph Content	
>>>Scale	Volume
	Volume
>>>Data	Open Interest
	Volume
>>>Display	Line
	Bar
>>>Caption	Open Interest
	Volume
Color	
>>>Put	Red
>>>Call	Green
Settings	
>>>Style	Solid
	Solid
>>>Hatch	Not Selected
>>>Width	1
Smoothing	
>>>Type	None

	None
>>>Degree	None
	None
>>>Sensitivity	4
	4
Multiplier	1
	1

TickVol button

Visible	Selected
	Selected
Graph Content	
>>>Scale	Volume
	Volume
>>>Data	Tick Volume
	Tick Volume
>>>Display	Bar
	Smooth
>>>Caption	Tick Vol
	Tick Vol
Color	
>>>Put	Red
>>>Call	Green
Settings	
>>>Style	Solid
	Solid
>>>Hatch	Not Selected
>>>Width	1
Smoothing	
>>>Type	None
	None
>>>Degree	None
	None

>>>Sensitivity	4
	4
Multiplier	1
	1

TheoV/Pr button

Visible	Selected
	Selected
Graph Content	
>>>Scale	Price
	Price
>>>Data	Trade or Settlement
	Theoretical Value
>>>Display	Bar
	Line
>>>Caption	Trade or Settlement
	Theoretical Value
Color	
>>>Put	Red
>>>Call	Green
Settings	
>>>Style	Solid
	Solid
>>>Hatch	Not Selected
>>>Width	1
Smoothing	
>>>Type	None
	None
>>>Degree	None
	None
>>>Sensitivity	4
	4

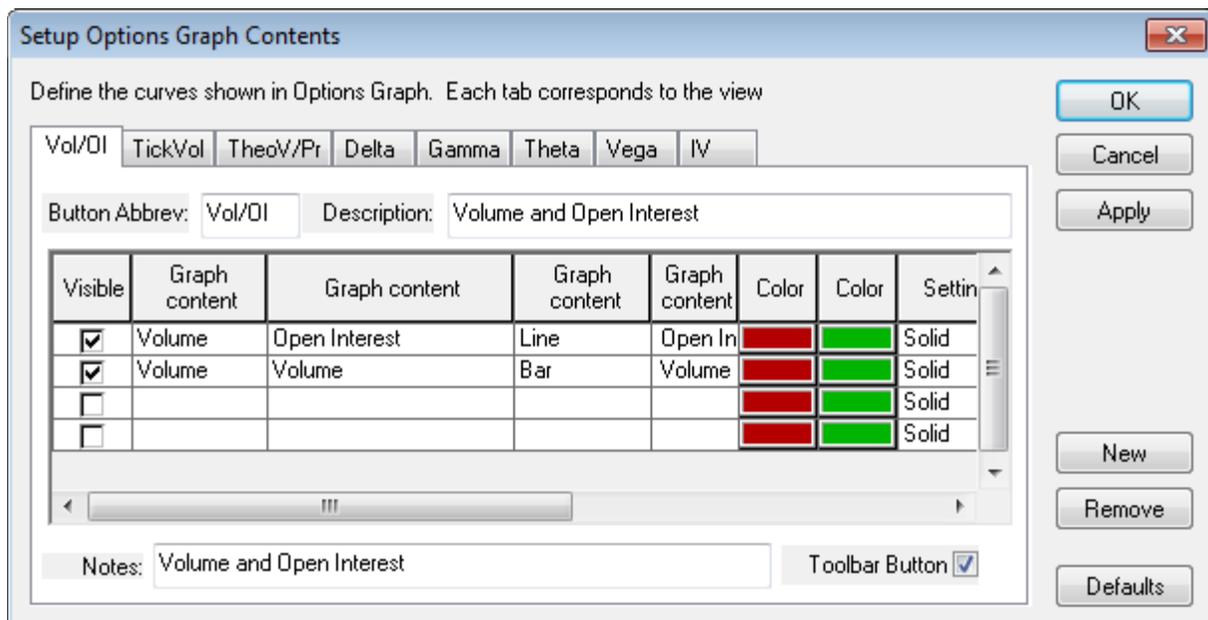
Multiplier	1
	1

Rescale button

You can set the vertical and horizontal scales to any spacing you choose by left-dragging a horizontal scale number to the left to condense the scale or to the right to spread out that scale. Left-dragging the vertical scale either up to spread it out or down to condense it.

After either the vertical scale or horizontal scale has been changed from its original default sizing, return them both to their default states by clicking the **Rescale** button.

Define Options Graph Curves



1. Click the **Display** button to reveal the **Setup Options Graph Contents** window or right-click the title bar of the **Options Graph** window.
2. Select Customize displays.

The **Setup Options Graph Contents** window gives you wide latitude to customize the Options Graphs displays. By default, the window displays 8 tabs: Vol/OI, TickVol, TheoV/Pr, Delta, Gamma, Theta, Vega, IV. Within each tab you can select a Button Abbreviation, Button Description, Graph Content, Put and Call Colors, Specific Graph Style Settings, Smoothing properties, and the Multiplier.

You may also add, remove or change the construction of any of the display tabs or revert the display back to its original state, that is, its state before any changes were made.

Adding a Tab

Click the New button to place a new tab in the Setup Options Graph Contents window and clear the cells so you can make new selections.

Entering a Button Abbreviation

If you enter a name in the Abbreviation section, this name appears as the toolbar button name and as the tab name in the Setup Options Graph Contents window.

Entering a Description

The name entered in the Description box appears in the title bar of the Options Graph window when that graph is displayed.

Selecting the Graph Content

Within the Graph Content section of the window you can select the Scale, Data type and Display type and enter a Caption.

Selecting a Scale

The Scale variable allows you to select the value displayed on the vertical axis.

1. Click the dropdown list arrow to display the choices.
2. Select one or more of the choices, which include: **Price**, **Greek** and **Volume**.

Note: You can select a Multiplier to adjust scales that have different magnitudes.

Selecting the Data type

Depending on the Scale choice, you have different Data choices available. The Data choices for each Scale choice within each tab include:

Data choices for the Price scale:

- Price-Theor.Value
- Theoretical Value
- Price
- Close Price
- Last Price
- Open Price
- Strike Price
- Yesterday's close
- Settlement
- Ask
- Bid
- Trade or Settlement

Data choices for the Greek scale:

- Delta
- Gamma
- Theta

- Vega
- Rho
- Implied Volatility

Data choices for the Volume scale:

- Volume
- Open Interest
- Tick Volume

Selecting the Display Type

Select from the following display types:

- Unsmoothed line
- Bar
- Smoothed line

Entering a Caption

Input a brief description in the Caption section. The caption appears in the mouse text that is displayed when you move the mouse over a display element.

Selecting Colors for the Puts and Calls

You can select the call and put colors for each of the lines within each tab.

1. Click the color under the **Call** or **Put** heading.
2. Select a color from the color palette.

Selecting the Settings

In the settings sections, users can select a **Style**, **Hatch**, and a **Width** size.

Selecting a Style

The Style section allows users to further refine the **Display** choice.

Style choices include: **Hatch** and **Solid**.

Note: **Hatch** style refers to a pattern within the bar.

Selecting a hatch style facilitates differentiating bar colors when printing on a black and white printer.

A **Hatch** style can only be selected if you have chosen **Bar** as the **Display** type.

If you have selected **Hatch** as the designated style, you can select a hatch style from the drop-down list under the Hatch heading.

If you have chosen **Solid** as the designated style, you can set the thickness of the line (not the thickness of the bar) in pixels in the **Width** area of the **Settings** section.

Choosing the Smoothing Characteristics

Choosing the smoothing characteristics allows you to decide how the curve is fitted to the actual display points. You can only choose smoothing characteristics if the Smooth display type has been chosen.

CQG allows you to select from the following smoothing methods:

- **Standard:** If you select the Standard method, you can select a polynomial degree and a sensitivity. The higher the polynomial degree, the more flexible (curvy) the line is and therefore, the better it will fit the curve. However, the more points that are considered, the less generally applicable the curve will be. The higher the sensitivity number, the more points are taken into consideration when fitting the curve.
- **Polynomial:** The Polynomial method uses the following formula:
$$Y(X) = a_0 + a_1 * X + a_2 * X^2 + a_R * X^R$$
Where the a's are values automatically selected by CQG to make the curve fit.
- **Hyperbolic:** The Hyperbolic method uses the following formula:
$$Y(X) = a_0 + a_1 / X + a_2 / X^2 + a_R / X^R$$
Generally works the same way as the Polynomial method, with the X's representing observed values and the a's representing coefficients which make the curve fit. However, this method would present a more accurate curve if the shape of the points was more like a hyperbola rather than a parabola, i.e. the curve does not switch directions.

Note: Users may want to try all three methods to see which yields the best fit for the observed points.

You must choose **Smooth** as the **Display** type for the smoothing variables to become active.

Choosing a Multiplier

Selecting a multiplier increases the values on the vertical scale by the selected factor. Enter the desired factor in the **Multiplier** section.

Entering a Note

You can enter a note that appears whenever the **Setup Options Graph Contents** window is visible.

Showing/Hiding the Display Components

Select the **Visible** checkbox next to the desired display element to include that graph element in the display.

Clear the checkbox next to the desired display to eliminate that piece from the display.

Removing a Curve

Click the **Remove** button in the **Setup Options Graph Contents** window to remove the entire tab and all the curves associated with that tab.

Customizing the Options Graphs

The Setup Options Graph Contents window enables you to add, remove and rename the tabs. Additionally, you can easily restore the window to its original settings.

To add a tab to the display:

1. Click the **New** button
2. This displays a new template with the **Abbreviation and Description** sections blank.
3. Enter an Abbreviation and Description for the new tab.
4. The abbreviated name actually appears on the tab.
5. The description appears in the title bar.
6. Select the **Scale**, **Data** and **Display** characteristics from the respective dropdown lists.
7. Enter a caption, if you want one.
8. The inputted caption appears as part of the mouse text.
9. Select the desired **Colors**, **Settings**, **Smoothing** and **Multiplier** characteristics.

To remove a tab from the display:

1. Select the desired tab.
2. Click the **Remove** button.
3. You cannot remove all the tabs; at least one must be displayed.

To rename a tab:

1. Click in the **Abbreviation** box.
2. Enter the new name.
3. To restore the defaults:
4. Click the **Defaults** button to restore the system to its original state (when first delivered to the user).

Restoring the Setup Options Graph Defaults

You can revert the **Options Graph** displays to their original state (the state when **CQG** was first delivered) by:

Clicking on the **Defaults** button in any of the tabs in the **Setup Options Graph Contents** window.

This restores **ALL** the tabs to their original state.

Delta Tab Original State

Visible	Selected
Graph Content	
Scale	Greek
Data	Delta
Display	Bar
Caption	Delta
Color	
Put	Red
Call	Green
Settings	
Style	Solid
Hatch	Not Selected
Width	Not Selected
Smoothing	
Type	None
	None
Degree	None
	None
Sensitivity	4
Multiplier	1

Gamma Tab Original State

Visible	Selected
Graph Content	
Scale	Greek
Data	Gamma
Display	Bar
Caption	Gamma
Color	
Put	Red
Call	Green
Settings	
Style	Solid
Hatch	Not Selected
Width	Not Selected
Smoothing	
Type	None
	None
Degree	None
	None
Sensitivity	4
Multiplier	1

Theta Tab Original State

Visible	Selected
Graph Content	
Scale	Greek
Data	Theta
Display	Bar
Caption	Theta
Color	
Put	Red
Call	Green
Settings	
Style	Solid
Hatch	Not Selected
Width	Not Selected
Smoothing	
Type	None
	None
Degree	None
	None
Sensitivity	4
Multiplier	1

Vega Tab Original State

Visible	Selected
Graph Content	
Scale	Greek
Data	Vega
Display	Bar
Caption	Vega
Color	
Put	Red
Call	Green
Settings	
Style	Solid
Hatch	Not Selected
Width	Not Selected
Smoothing	
Type	None
Degree	None
Sensitivity	4
Multiplier	1

IV Tab Original State

Visible	Selected
	Selected
Graph Content	
Scale	Greek
	Greek
Data	Implied Volatility
	Implied Volatility
Display	Bar
	Smooth
Caption	Implied
	Implied
Color	
Put	Red
Call	Green
Settings	
Style	Solid
	Solid
Hatch	Not Selected
Width	Not Selected
Smoothing	
Type	None
	Standard
Degree	None
	4
Sensitivity	4
	4
Multiplier	1

Volatility Workshop

The Volatility Workshop allows you to adjust the characteristics of an options implied volatility curve and review how those adjustments affect the theoretical values of either individual option or a portfolio of options. You can modify either the implied volatility for a single options series or the entire volatility curve.

To open Volatility Workshop, click the **VolWS** button on the toolbar. If the button is not displayed, click the **More** button, and then click **Volatility Workshop**. You can also click the **Options** button and then click **Volatility Workshop**.

Volatility Workshop Components

The Volatility Workshop window has these areas:

Title bar



Reset button



Contracts Group area

Contracts Group	
Symbol	EP
Month Call/Put	SEP2 Calls

Approximation area

Approximation	
Method	Polynomial
Degree	4
Corrections	Till First Change
Weighting	Disabled
Adjustment	Disabled

Modification area

Modification	
Minimum, %	1
Maximum, %	300
Hor.Shift, pr	0
Vert.Shift, %	0
Hor.Shape	0
Vert.Shape	0
Slope	0

3D area

Displayed when the [3D button](#) is on.

3D	
- Time, day	Hide
Hor.Shift, pr	-0
Vert.Shift, %	0
Hor.Shape	0
Vert.Shape	0
Slope	0
Min.DTE	1
- AvgVol, %	Show >>>
Hor.Shift, pr	0
Vert.Shift, %	1
Hor.Shape	0
Vert.Shape	0
Slope	0
Max.Down, %	10
Max.Up, %	10
- UndPr, pt	Show >>>
Hor.Shift, pr	100
Vert.Shift, %	0
Hor.Shape	0
Vert.Shape	0
Slope	0
Max.Down, %	10
Max.Up, %	10

Price area

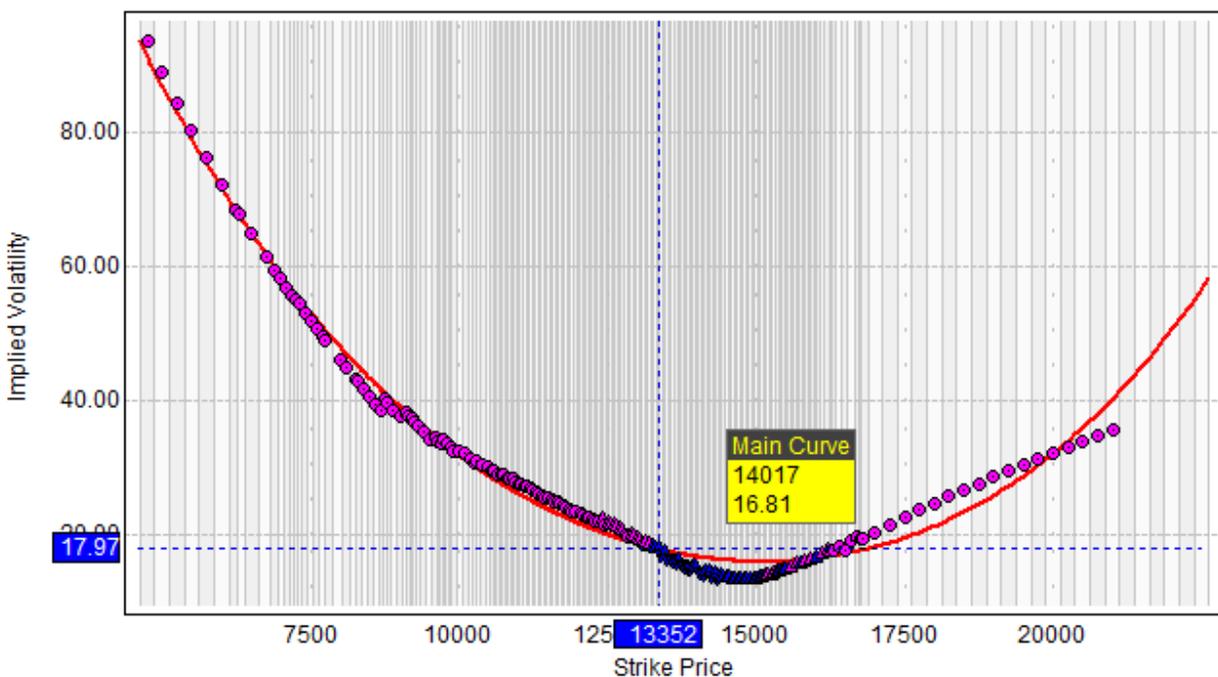
Strike price	4750	5000	5250	5500	5750	6000	6250	6300	6500	6750	6900	7000	7100	7200
Included	<input checked="" type="checkbox"/>													
Implied Vol.	93.79	89.07	84.59	80.33	76.27	72.38	68.66	67.93	65.08	61.65	59.65	58.35	57.06	55.79
Corrections														
Main Curve	91.41	87.17	83.1	79.2	75.46	71.87	68.43	67.76	65.13	61.98	60.15	58.96	57.79	56.64

Graph

The Volatility workshop displays actual, current implied volatility (IV) points. These are calculated using the method selected from the Volatility tab in the Preferences for Volatility Workshop window. Each option's IV is indicated by:

- a colored circle, if the series has not traded today,
- an up triangle, indicating an increase in the option's IV, or
- a down triangle, indicating a decrease in the option's IV.
- User-created, corrected IV points. An up arrow indicates a volatility that has been adjusted upward. A down arrow indicates a volatility that has been adjusted downward. Select different colors to distinguish between current, old and stale volatility points. Click here for information on the Volatility Workshop color window.
- Up arrows, down arrows or circles indicate if today's volatility is greater than, less than or equal to yesterday's.
- A volatility curve constructed from user-adjusted points.
- Yesterday's implied volatility curve.

In addition, the display shows a vertical line in the user-selected color at the current underlying price.



Volatility Workshop Toolbar

In addition to the buttons it shares with the [Options window toolbar](#), the Volatility Workshop toolbar also includes these buttons:

Volatility Workshop FullScr button

Click this button to expand the table and graph view so they cover the entire viewable area, hiding the parameters section.

Volatility Workshop Rescale button

Click this button to reset the spacing in the axes.

Save button

Opens the [Save Volatility Curve](#) window.

Load button

Opens the [Load Volatility Curve](#) window.

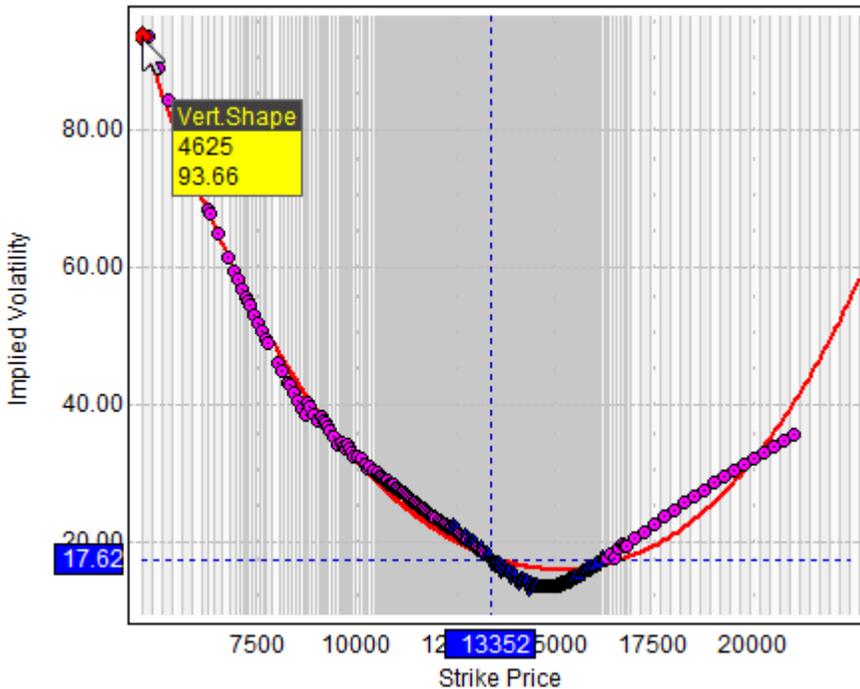
3D button

Click the **3D** button to change the current 2-dimensional Volatility Workshop graph to a 3-D display. Click it again to go back to 2D.

[3D](#) provides a clearer picture of the interactions between the variables over time.

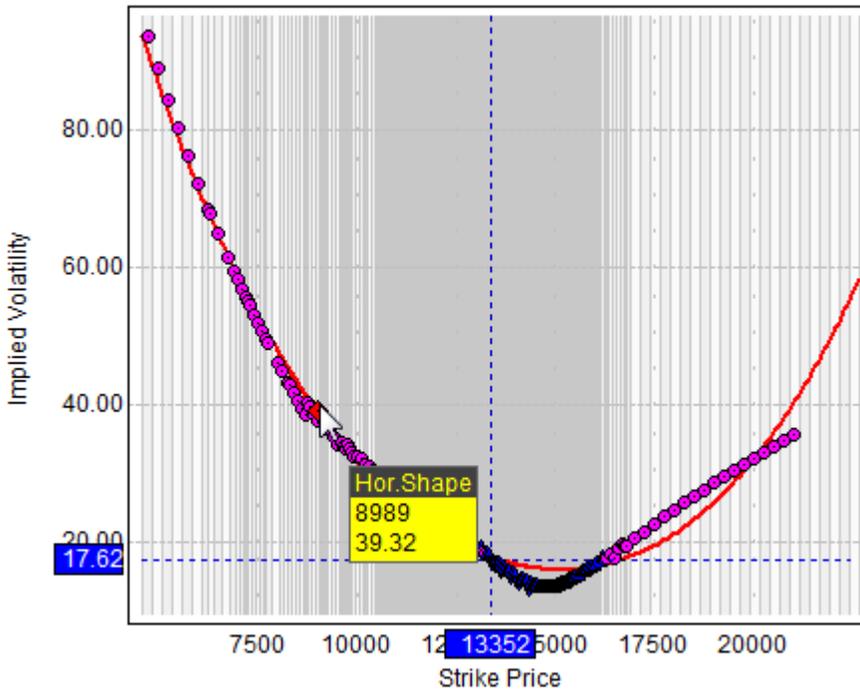
VShape button

Click this button to add the vertical shape icon to the graph. You can then drag this icon to change the vertical shape of the graph. Changing the vertical shape keeps the horizontal axis values constant, while changing the vertical axis values by a constant proportion.



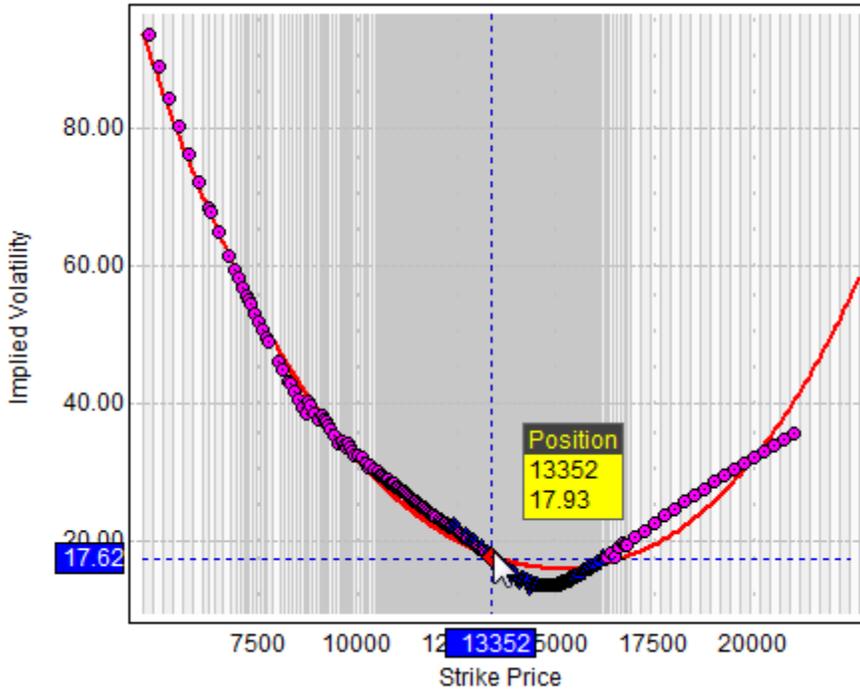
HShape button

Click this button to add the horizontal shape icon to the graph. You can then drag this icon to change the horizontal shape of the graph. Changing the horizontal shape keeps the vertical axis values constant while changing the horizontal axis values by a constant proportion.



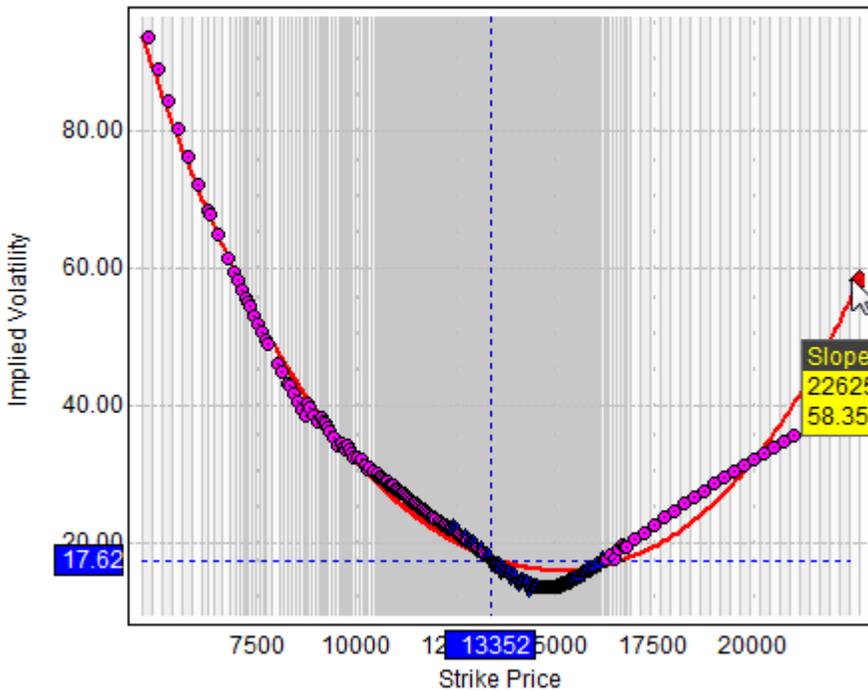
Position button

Click this button to move the main curve either up or down, or left or right, create a vertical shift, or create a horizontal shift, without changing its shape.



Slope button

Adjusting the slope changes the tilt of the curve. Larger numbers tilt the curve more; smaller numbers tilt the curve less.



Apply button

Click this button to apply the volatility selections made in the **Volatility Workshop** to option values in other options applications.

Volatility Workshop Actuals button

Click this button to remove all corrections and user-designated weights.

Measure button

Click this button to open the **Volatility Curve Measurements** window. This window displays:

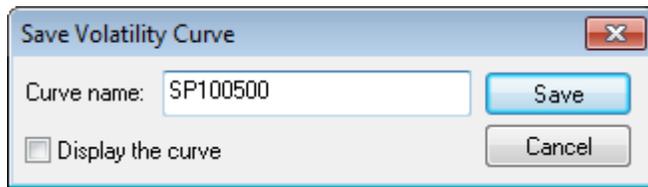
Parameter	Definition
Minimum Curve Value	The lowest point on the curve.
Maximum Curve Value	The highest point on the curve.
Curve value at-the-money	The volatility value calculated for the at-the-money strike.
Turning points number	The number of times the volatility curve switches from going down to going up or vice-versa.
Slope at left end	The slope of the curve for the lowest x-axis value.
Slope at right end	The slope of the curve for the highest x-axis value.
Minimum slope	The minimum slope of the volatility curve.
Maximum slope	The maximum slope of the volatility curve.
Average slope	The average slope of the volatility curve.
Curve value at Delta 10%	The implied volatility for the strike where the delta equals 10.00.
Difference with ATM	Difference between the volatility values at the strike where the delta equals 10 and volatility value for the at-the-money strike.
Curve value at Delta 25%	The implied volatility for the strike where the delta equals 25.00.
Difference with ATM	Difference between the volatility values at the strike where the delta equals 25 and volatility value for the at-the-money strike.
Curve value at Delta 50%	The implied volatility for the strike where the delta equals 50.00.
Difference with ATM	Difference between the volatility values at the strike where the delta equals 50 and volatility value for the at-the-money strike.
Curve value at Delta 75%	The implied volatility for the strike where the delta equals 75.00.
Difference with ATM	Difference between the volatility values at the strike where the delta equals 75 and volatility value for the at-the-money strike.
Curve value at Delta 90%	The implied volatility for the strike where the delta equals 90.00.
Difference with ATM	Difference between the volatility values at the strike where the delta equals 90 and volatility value for the at-the-money strike.

Parameter	Definition
Average Absolute Error	The average error calculated using the absolute values of the errors of the observation points.

Merge button

Click this button to display a main curve that uses merged call and put volatilities.

Saving the Volatility Curve

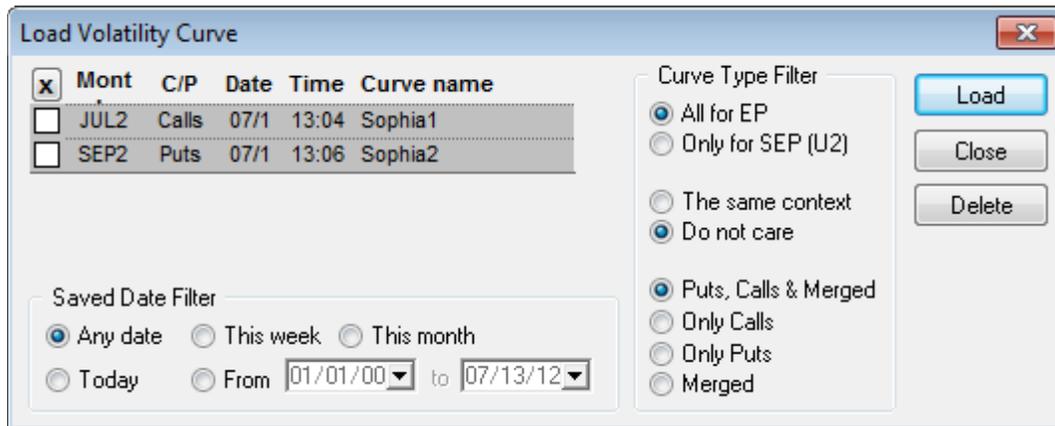


1. Enter a name for the curve.
2. Select the **Display the curve** checkbox to keep the curve displayed.
The curve initially appears directly underneath the main curve and is not visible unless the main curve is moved.
3. Click the **Save** button to save the curve and close the **Save Volatility Curve** window.
Or
4. Click the **Cancel** button to close the window without saving the volatility curve.

Curves are saved by commodity, but not by month.

Opening a Saved Volatility Curve

The curve can only be applied to the same commodity and same type of option (call, put, or merged) as the one that was active was when the curve was saved. The month does not need to be the same.



Select the curve from the list at the top left side of the window.

Additionally, the **Load Volatility Curve** allows you to activate various filters to facilitate locating the desired volatility curve. The window allows you to filter by the saved date and/or the curve type.

Filtering by Date

The **Date** filter allows you to display volatility curves that were created: Select one of the following date filters:

- Any Date
- This week
- This month
- Today

Within a user defined date range.

Filtering by Curve Type

In addition to filtering the volatility curves by date, you can further shorten the list of available curves by filtering by **Curve Type**.

To filter by curve type, select one option from each of the following three sections:

Section I

Item	Description
All For...	Filters the volatility curve only by commodity
Only For...	Filters the volatility by expiration month

Section II

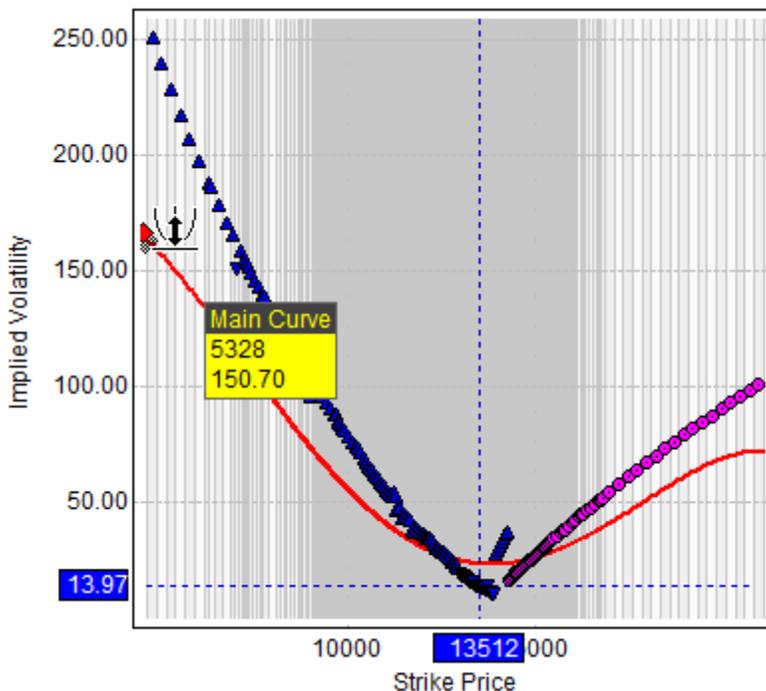
Item	Description
This same context	The option is using the same model, same implied volatility type, same average volatility type and same price filter.
Do not care	The above criteria are irrelevant

Section III

Item	Description
Puts Calls & Merged	Looks for volatilities which have used the Put-Call Combined or the Put-Call separate average volatility calculation method
Only Calls	Looks for volatilities that have used the Put-Call Separate method of average volatility calculation.
Only Puts	Looks for volatilities that have used the Put-Call separate method of average volatility calculation.
Merged	Looks for volatilities that have used the Put-Call Combined Average volatility calculation method.

Adjusting the shape of the curve

The [VShape](#), [HShape](#), [Position](#), and [Slope](#) buttons add icons to the graph that you can use to manipulate the display of the curve. Drag the icon to change the graph shape.



As the **VShape** diamond is dragged, the number in the vertical shape row in the Modification table changes. Smaller numbers indicate the curve is getting flatter; higher numbers indicate the curve is getting rounder. The range of acceptable numbers is -200 to 200 . You can also change this number directly in the Modification table.

As the **HShape** diamond is dragged, the number in the HorShape row in the Modification table changes. More negative numbers indicate the curve is getting skinnier; less negative numbers indicate the curve is getting fatter. The range of acceptable numbers is -200 to 200 . You can also change this number directly in the Modification table.

As the **Position** diamond is dragged, the curve is repositioned as it maintains its shape. The horizontal shift variable moves the curve right (for positive numbers) or left (for negative numbers) by the designated price amount, scaled for price units. For example, entering 1000 for an S&P 500 option moves the curve right by 10 strike price units. However, the actual points do not change. The vertical shift variable moves the curve up (for positive numbers) or down (for negative numbers) by the designated percent. The horizontal and vertical shift parameters can also be changed directly using the Modification table.

As the **Slope** diamond is dragged, the number in the slope row in the modification table changes. You can also adjust the slope directly using the modification table.

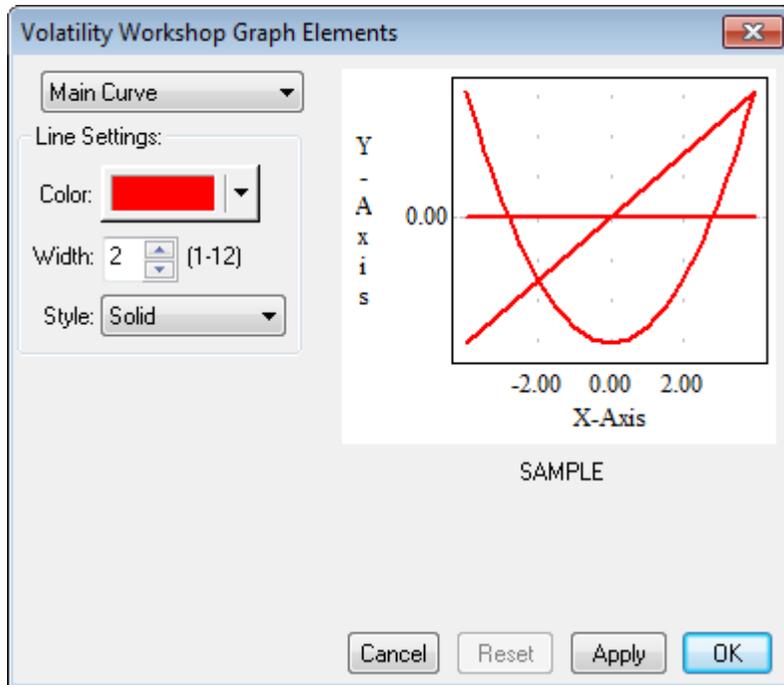
Removing Corrections

To remove all corrections, click the **Actuals** button.

To remove a single correction, right-click on a point that has been moved and select **Reset Position**.

You can cancel any changes made by entering zeros for all the entries in the Modification table except Minimum % and Maximum %, which should be small enough and large enough respectively to ensure that no points are left out.

Selecting the Colors for the Volatility Workshop Graph Lines



In addition to the colors selected in the **Select Volatility Workshop Colors** window, you can select the colors for the **Volatility Workshop** graph lines separately.

1. Right click anywhere within the **Volatility Workshop** graph
2. This displays the Volatility Workshop Graph Elements window.
3. Select the curve to be changed from the drop-down list. The list includes all curves currently displayed.
4. Click the drop-down list associated with Color.
5. Select the desired color for the selected curve from the color palette.
6. Select the width (in pixels, from 1-12) for the selected curve.
7. Select the desired line style.
Choices include: Solid, Dash, Dash Dot and Dash Dot Dot.
8. Click **OK**.

Designating the Approximation Characteristics

Approximation	
Method	Polynomial
Degree	4
Corrections	Till First Change
Weighting	Disabled
Adjustment	Disabled

In the **Approximation** section, you select characteristics used for estimating the curve. Specifically, select the approximation method used to fit the data points, the degree of the polynomial, used by the curve to fit the points, the corrections method, the weighting scheme and the adjustment method.

Changing the Approximation Method

The **Volatility Workshop** offers the following 4 approximation methods:

Polynomial

The **Polynomial** method uses the following formula:

$$f(x) = \sum_{i=0}^{n-1} a_i x^i$$

Where n is the degree parameter and is user-defined. The coefficients are selected to guarantee the least possible error between data points and curve points according to their weights (i.e. the greater the weight given to the point, the closer the curve should be to that point). Larger n values result in lower errors.

Large n values pose 2 problems:

1. Data spikes take on greater importance
2. The behavior of the curve for data points outside the range is exaggerated.

Hyperbolic

The **Hyperbolic** method uses the following formula:

$$f(x) = \sum_{i=0}^{n-1} a_i / x^i$$

Where n is the degree parameter and is user-defined. The coefficients are selected to guarantee the least possible error between data points and curve points according to their weights (i.e. the greater the weight given to the point, the closer the curve should be to that point). Larger n values result in lower errors.

Large n values pose 2 problems:

1. Data spikes take on greater importance
2. The behavior of the curve for data points outside the range is exaggerated.

Reciprocal

The **Reciprocal** method uses the following formula:

$$f(x) = \left[\sum_{i=0}^{n-1} a_i / x^i \right]^{-1}$$

Where n is the degree parameter and is user-defined. The coefficients are selected to guarantee the least possible error between data points and curve points according to their weights (i.e. the greater the weight given to the point, the closer the curve should be to that point). Larger n values result in lower errors.

Large n values pose 2 problems:

1. Data spikes take on greater importance
2. The behavior of the curve for data points outside the range is exaggerated.

Exponential

The **Exponential** method uses the following formula:

$$f(x) = \sum_{i=0}^{n-1} a_i e^{ix}$$

Where n is the degree parameter and is user-defined. The coefficients are selected to guarantee the least possible error between data points and curve points according to their weights (i.e. the greater the weight given to the point, the closer the curve should be to that point). Larger n values result in lower errors.

Large n values pose 2 problems:

- Data spikes take on greater importance
- The behavior of the curve for data points outside the range is exaggerated.

Selecting the Curve Degrees

Changing the curve degrees changes the flexibility of the curve, enabling it to better fit the points. However, increasing the number of degrees also causes the curve to behave erratically at the endpoints.

Selecting a Method for Keeping Corrections

You can select from 4 choices for designating how long corrected points are maintained. These choices are:

Disabled	No corrections are made.
Till First Change	When the system calculates a new implied volatility, the user-selected IV is discarded.
Absolute Value	The corrected value is maintained even when new ticks are received.
Absolute Difference	The implied volatility value changes but the difference between the actual implied volatility and the setup implied volatility remains the same. Example: If the real implied volatility was 50 and the setup implied volatility was 52, and, subsequently, the real volatility increased to 54, the setup implied volatility would rise to 56.
Relative Difference	The implied volatility value changes but the percentage difference between the actual implied volatility and the setup implied volatility remains the same. Example: If the real implied volatility was 50 and the setup implied volatility was 10% more, i.e. 55, and, subsequently, the real volatility increased to 60, the setup implied volatility would rise to 60 + 10% or 66.

Selecting a Weighting Method

Selecting a weighting factor allows you to designate how various volatilities is used to create the volatility curve. The Volatility Workshop offers 3 distinct weighting factors. Additionally, you can create customized weighting factors or use no weighting (by selecting disabled). The 3 weighting factors offered are:

- Volume (yesterday's)
- Open Interest (yesterday's)
- Tick Volume (today's)
-

To create a customized weighting scheme:

1. Select **Customized** from the weighting drop-down list in the **Approximation** section.
2. Enter the desired weights in the **Weights** row of the **Volatility Workshop** table.

Note: You can only enter new weight values directly when the **Customize** option has been selected. However, by excluding selected series (by clearing the box in the Included row), you can create a form of weighting.

Selecting an Adjustment Method

CQG offers two adjustment methods rot calculating the volatility curve, Underlying and Bourtov.

The Underlying Adjustment Method

For the **Underlying Adjustment** method, implied volatility values are moved horizontally a distance equal to the difference between the current underlying price and the coherent (at the moment of the tick) underlying price.

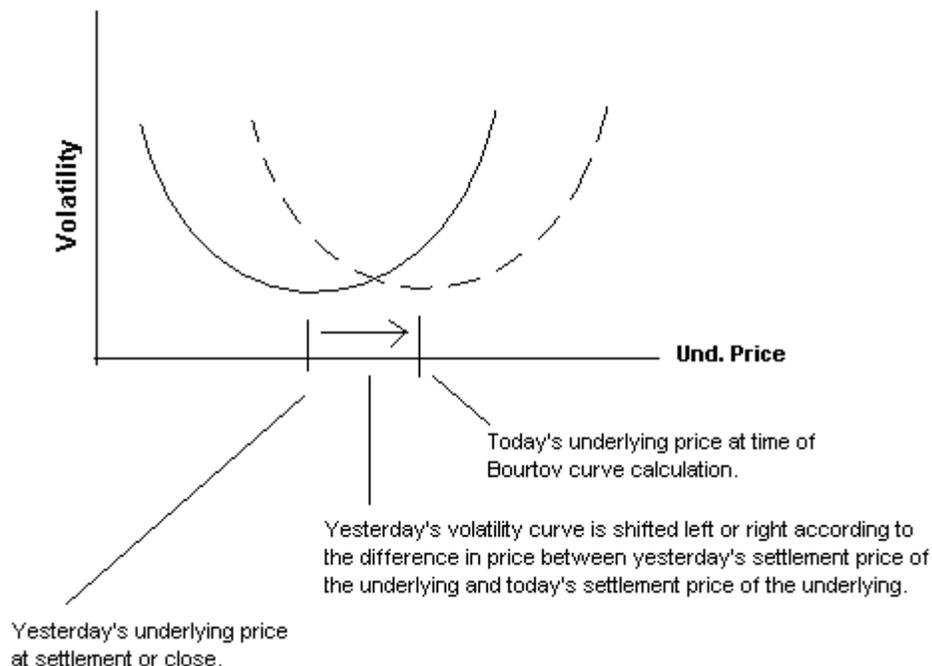
Example: Assume the implied volatility is 25.35 and the last tick happened when the underlying was 1115.70. Currently, the underlying stands at 1117.10. Without any adjustment the point 1000, 25.35 is used to draw the volatility curve. With the adjustment, the point is 1001.40, 25.35, where $1001.40 = 1000 + (1117.10 - 1115.70)$

The Bourtov Adjustment Method

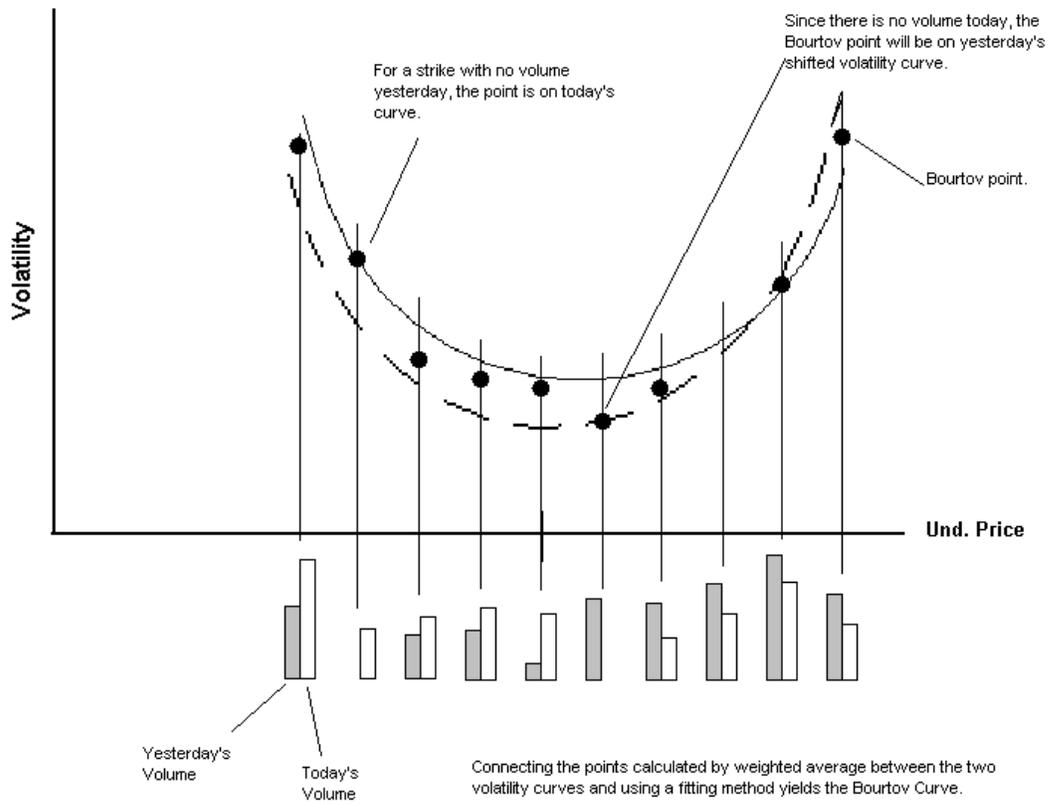
The **Bourtov Adjustment** Method involves 3 steps:

1. Taking yesterday's volatility curve.
2. Shifting it (while keeping the shape the same) according to the change in underlying price.
3. Adjusting the shape according to the relative volumes (either tick or actual, depending on which was selected from the drop-down list related to Weighting) of the strikes between yesterday and today.

Steps 1 & 2



Step 3



Modifying the Volatility Curve

Modification	
Minimum, %	1
Maximum, %	300
Hor.Shift, pr	0
Vert.Shift, %	0
Hor.Shape	0
Vert.Shape	-62.69
Slope	0

The **Volatility Workshop** allows you to modify the shape and position of the main volatility curve. You can make up to 7 modifications to the volatility curve. Within the 5 modification areas, **COG** offers 2 ways to modify each aspect of the volatility curve, either by dragging the curve and adjusting it directly in the window, or by entering numbers in the Modifications table. The 5 types of modifications are: Horizontal Shift, Vertical Shift, Horizontal Shape, Vertical Shape and Slope.

In addition, you can set the minimum and maximum percent volatilities specifications from the **Modification** table.

Selecting the Minimum and Maximum Percent Modifications

The maximum percent implied volatility represents the smallest implied volatility that is displayed on the graph. Volatilities smaller than the designated value are displayed as horizontal lines at the minimum value.

The minimum percent implied volatility represents the largest implied volatility that is displayed on the graph. Volatilities greater than the designated value are displayed as horizontal lines at the maximum value.

Resetting the Volatilities

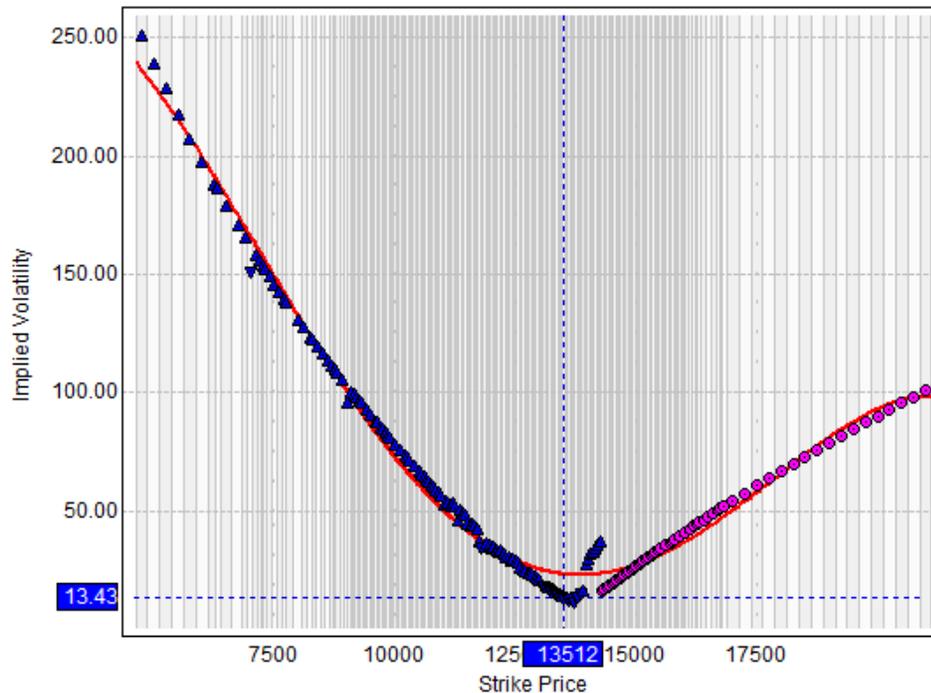
Modification	
Minimum, %	1
Maximum, %	300
Hor.Shift, pr	0
Vert.Shift, %	0
Hor.Shape	0
Vert.Shape	0
Slope	0

Because COG translates the user-input volatility assumptions into the theoretical values in all the option views, you may find it necessary to reverse your volatility assumptions.

1. Enter a small Minimum % number.
2. Enter a fairly large Maximum number.
3. Enter 0 (zero) in all the other rows.

Using 3D

If there is ample market data, we can calculate a graph of Implied Volatility (IV) depending on the strikes. It is 2D Volatility Curve, which helps to find a value of IV even for those strikes that have no market data.



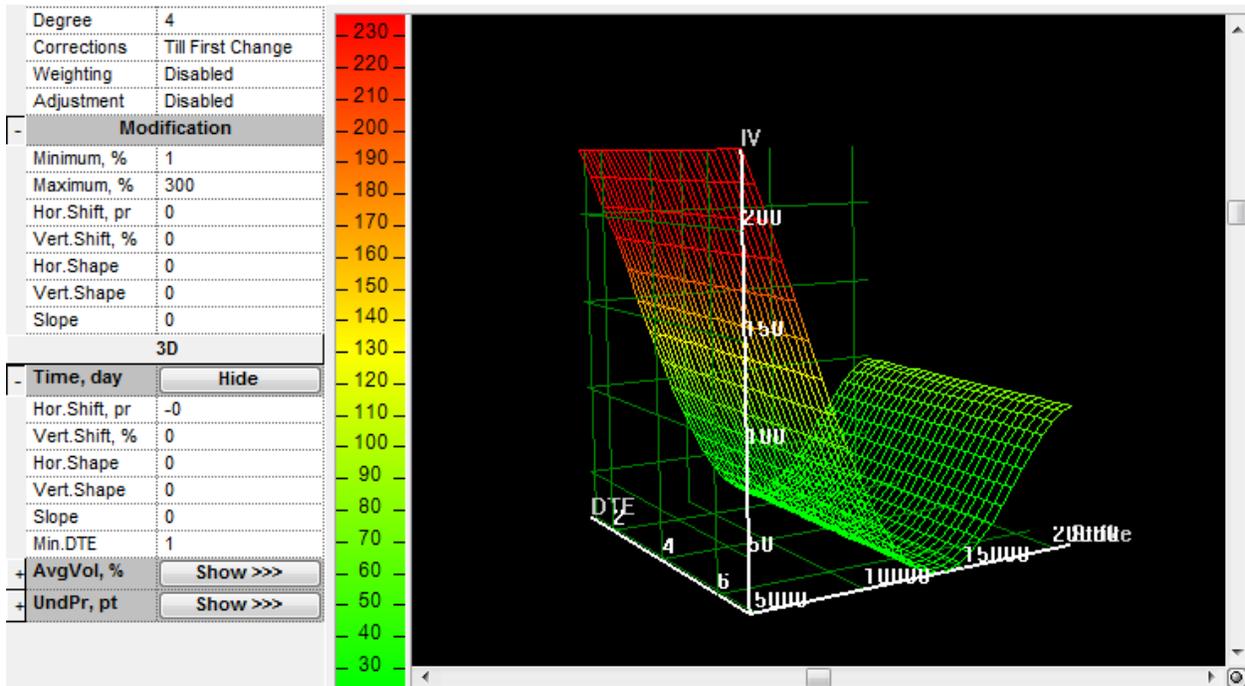
The calculated diagram represents the market state when it was generated. In reality, the change of market data should change the volatility curve. A 3D diagram allows you to select a third parameter to define the change of the 2D graph: time (days to expiration), average volatility, or underlying price.

These parameters clearly represent the changed market state and strongly affect IV values.

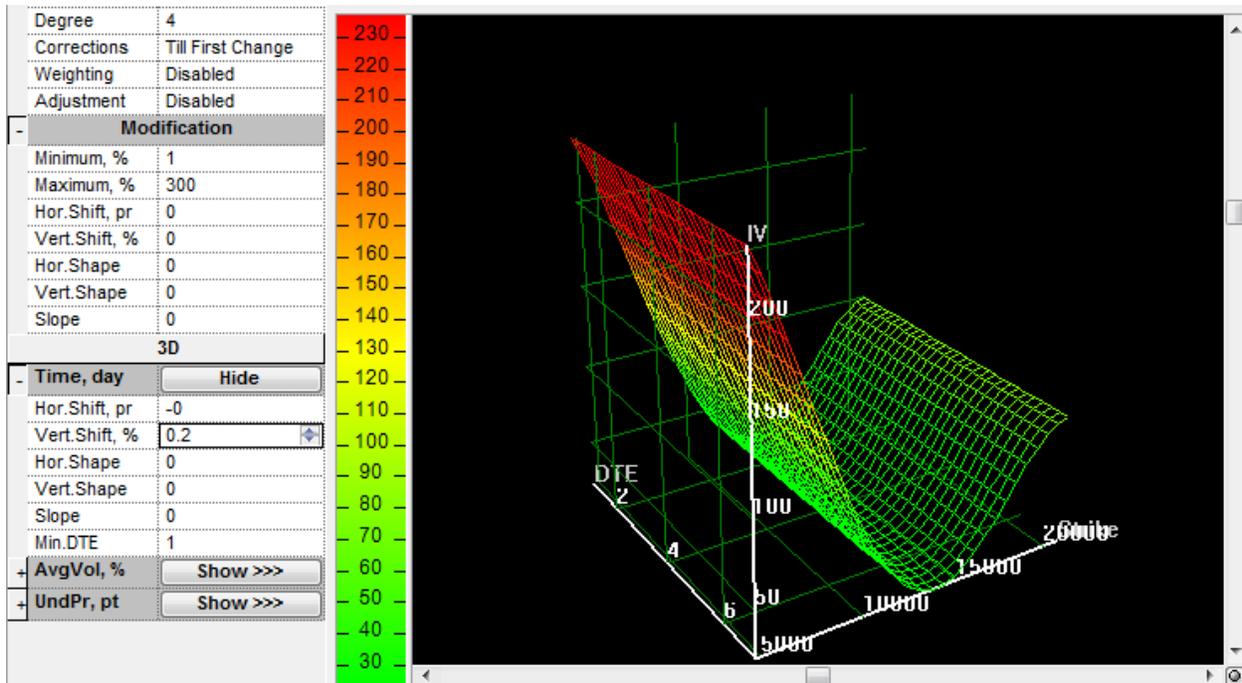
Volatility Workshop provides several modification parameters for time, average volume, and underlying price:

- Horizontal Shift (it is defined as option price value)
- Vertical Shift (in percent)
- Horizontal Shape
- Vertical Shape
- Slope
- Min.DTE (time only)
- Max Down % (AvgVol and UndPr only)
- Max Up % (AvgVol and UndPr only)

Let's consider time as an example.



The volatility curve for current market state (the slice of the surface for DTE = 68) corresponds to the 2D diagram. However, this surface does not depend on DTE; it is the same for all DTE values. It is displayed according to the parameters of the Time type, and all modification parameters have value 0. (Min DTE value, which is 1, defines the left DTE limit value; it does not define any modification.) By changing one of the time parameters, such as changing the Vert. Shift % to 0.2, the volatility curve now depends on DTE value: the smaller DTE value, the higher IV value.



You can define the volatility surface as the method of Volatility Calculation to help you find the correct volatility value for the next day in situations where there is not ample data by using settlements for the previous date.

You can choose to define the IV depending on the Underlying Price or Average Volatility. These options operate under the same principles as Time. They offer additional parameters to define the range: Max. Down (in percent) and Max. Up (in percent), both of which is related to the current value of the price or volatility.

Strategy Analysis Window

The Strategy window allows you to analyze the theoretical behavior of an options strategy. Strategies consist of one or more option positions and/or underlying product positions. The strategy may be analyzed using changes in underlying price, time, volatility and interest rate. The 'Table Tabs' section at the top of the window provides information about the strategy's current characteristics including the Greeks, breakeven points and specific contract details, for both the total strategy and the individual parts.

The central feature of the Strategy window is the graph, which facilitates visual "what if" analysis of the strategy. This graph displays theoretical Profit and Loss (P&L), or any of the Greeks, on the Y-axis and the underlying price, or other variable, on the X-axis. Once one or more positions are entered, the graph shows the theoretical P&L curve for the strategy, both for the current time and at expiration.

Each leg or position of a strategy is entered as a trade into the Table Tabs section of the Strategy window. You can save strategies either as a workspace within the Strategy window or into an account in the Orders and Positions view. Similarly, strategies previously saved to the Orders and Positions view can be loaded into, and analyzed in, the Strategy window. Any strategy can be customized, either by adding new positions or liquidating existing ones.

To open Strategy Analysis, click the **Strat** button on the toolbar. If the button is not displayed, click the **More** button, and then click **Strategy**. You can also click the **Options** button and then click **Strategy Analysis**.

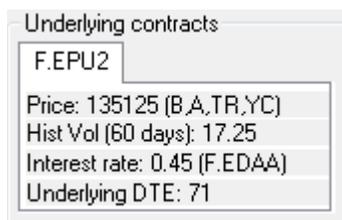
Strategy Analysis Window Components

The Strategy Analysis window has these areas:

Strategy area



Underlying contracts area



Plot

Plot	Range	WhatIf
Model:	Black	
X-Axis:	Underlying Price	
Y-Axis:	Price Units	
Z-Axis:	Days to Expiration	
Points per X-Axis: (30-120 pts)	Z-Axis: (10-100)	
60	10	

Range

Plot	Range	WhatIf
X-Axis:	Underlying Price	
Low:	132783	High: 137509
<input checked="" type="checkbox"/> Use standard deviation range.		
Display:	<input type="checkbox"/> Lines <input checked="" type="checkbox"/> Shades	
<input checked="" type="checkbox"/> 1 StdDev	<input type="checkbox"/> 2 StdDev	
<input type="checkbox"/> 3 StdDev	<input type="checkbox"/>	

When the **Use standard deviation range** check box is selected, standard deviation range is used. The formula for standard deviation range is:

$$\text{denominator} = \text{volatility} * \text{sqrt}(\text{DTE}/365);$$

$$\text{xhi} = \text{exp}(+\text{COUNT} * \text{denominator}) * \text{UPRICE}; // \text{range High value}$$

$$\text{xlo} = \text{exp}(-\text{COUNT} * \text{denominator}) * \text{UPRICE}; // \text{range Low value}$$

UPRICE = last price of the underlying instrument

COUNT = number of std deviations to offset from the underlying price (1, 2, 3, etc.)

DTE = minimum of the DTE for all trades of the strategy, for option not for underlying instrument (same value shown in **DTE** column of the very first row with the strategy name)

exp() = exponential function

sqrt = square root function

volatility = value shown in **Under Avg Vol** column (specified in Volatility tab of the Strategy preferences window)

What If

Plot	Range	WhatIf		
Volatility				
Vol shift				
Interest				
DTE				
Color				

Trades

The trades area has six tabs:

- Trades
- Greeks
- Costs
- Trade Times
- VolumeOI
- Underlying

Trades	Greeks	Costs	TradeTimes	VolumeOI	Underlying					
	Symbol	Long / Short	Qty	Exp Month	Strike	Call / Put / Under	Entry	Comm	DTE	Full Symbol
BullC								0.00	7	Bull Call Spread
Trade 1	EP	Long	1	JUL2	13500	Call	1000	0.00	7	C.EPN213500
Trade 2	EP	Short	1	JUL2	13550	Call	775	0.00	7	C.EPN213550

Trades	Greeks	Costs	TradeTimes	VolumeOI	Underlying		
	Full Symbol	Theo Value	Delta %	Gamma %/pr	Theta pr/day	Vega pr/%	Rho pr/%
BullC	Bull Call Spread		5.1126	0.0001	-0.0176	0.2293	-0.0451
Trade 1	C.EPN213500	1598.8	51.5962	0.0103	-110.5279	74.5729	-0.3066
Trade 2	C.EPN213550	1363.8	-46.4837	-0.0102	110.5103	-74.3435	0.2616

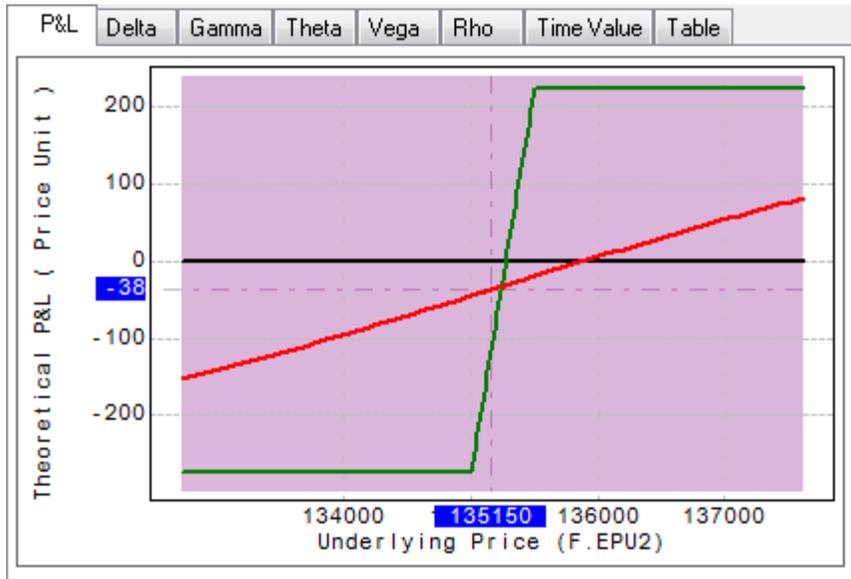
Trades	Greeks	Costs	TradeTimes	VolumeOI	Underlying							
	Full Symbol	Trade Qty	Trade Comm	Trade Entry	Theo Value	Last Trade	Credit / Debit	Max Gain	Max Loss	Open Trade Equity	B-E Point At Exp	B-E Point Cur Val
BullC	Bull Call Spread		0.00				-2.50	2.50	-2.50	0.00	1352.50	1353.94
Trade 1	C.EPN213500	Long 1	0.00	1025	1607.3	1025	-10.25	unlimited	-10.25	0.00		
Trade 2	C.EPN213550	Short 1	0.00	775	1369.9	775	7.75	7.75	unlimited	0.00		

Trades	Greeks	Costs	TradeTimes	VolumeOI	Underlying
	Full Symbol	Last Trade	Last Bid	Last Ask	Bid Ask Time
BullC	Bull Call Spread				
Trade 1	C.EPN213500	1025	1000	1050	14:56
Trade 2	C.EPN213550	775	750	775	14:56

Trades	Greeks	Costs	TradeTimes	VolumeOI	Underlying
	Full Symbol				
BullC	Bull Call Spread				
Trade 1	C.EPN213500				
Trade 2	C.EPN213550				

Trades	Greeks	Costs	TradeTimes	VolumeOI	Underlying
	Full Symbol	Underlying Trade	Under Trade Change	Under Trade Time	Under Trade Elapse
BullC	Bull Call Spread				
Trade 1	C.EPN213500	135150	+25	14:57	:00
Trade 2	C.EPN213550	135150	+25	14:57	:00

Graph



Strategy Analysis Toolbar

This toolbar shares these buttons with the other options windows:

[Pause](#)

[Settle](#)

[Prefs](#)

[Save](#)

It also includes these buttons:

Load button

Click the **Load** button to display the **Load Strategy** window.

3D button

The COG 3D Strategy graph gives users a clear picture of the interaction of three variables.

Click on the 3D button to display a 3-dimensional version of the Strategy graph.

FullScr button

Click the **FullScr** button to display only the strategy graph, hiding the other elements of the Strategy window.

Right click on the **FullScr** button to hide the strategy graph, the strategy selection box, the underlying information and the display properties tabs, leaving only the table tabs displayed.

Rescale button

Set the vertical and horizontal scales to any spacing by:

- Dragging a scale number to the left to condense the scale or to the right to spread it out for the horizontal scale.
- Dragging the vertical scale either up to spread it out or down to condense it.

After the vertical scale or horizontal scale has been changed from its original default sizing, the Rescale button becomes active. Likewise, if the both scales are currently in their default state, the Rescale button is not available.

Cursors button

When Underlying Price is showing on the horizontal axis, users can elect to display a cross-hair cursor. Click the Cursors button to activate a cross-hair cursor on a Strategy graph.

To move the cross hair cursor:

1. Drag the diamond to the desired Underlying Price on the horizontal axis.
2. Click on the diamond to set the Underlying Price

The Strategy graph cross hair cursor positions itself so it is tangent to the theoretical value curve at the selected Underlying Price.

To make the cross hair cursor tangent to a different curve:

1. Right click on the diamond.
2. Select the curve to which the cursor snaps.

Advanced button

Opens the Advanced Strategy Analysis window.

Strategy Analysis Actuals button

Removes what ifs.

Rules button

Opens the Strategy Rules window.

Selecting a Strategy



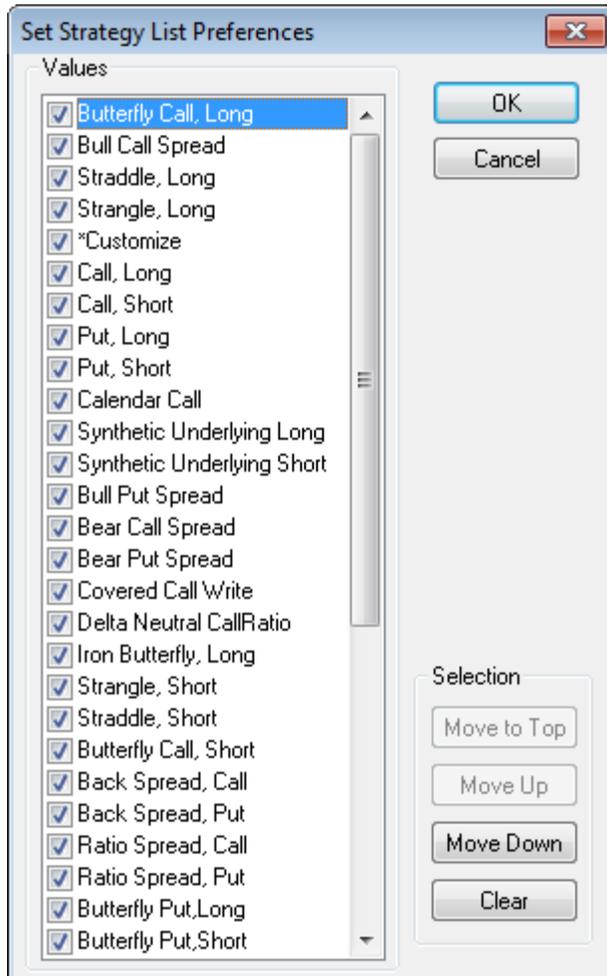
CQG provides a list of commonly used option strategies that have a defined structure. When you select one of these pre-defined strategies, CQG provides a template to facilitate data entry. You can also enter customized strategies, without any pre-existing rules.

To select a pre-defined strategy:

1. Click on the drop-down list arrow in the strategy box.
2. Click on the desired strategy.

After you select a strategy, CQG sets up trade boxes according to the strategy definition. The system removes unneeded trade boxes, and trade boxes which only define the strategy, rather than the specific trade, are grayed out and cannot be changed without creating a custom strategy.

Customizing the Strategy Box



Since the list of strategies can become quite long, with the CQG-provided strategies and user-created strategies, CQG allows you to customize the list and only show the strategies you believe you will use, thereby making the list easier to scroll through.

To customize the strategy list:

1. Click on the **Setup** button.
2. Select **Customize Strategy List**. This displays the Set Strategy List Preferences window.
3. Select the strategies.
4. Click on the **All** button to select all of the strategies.
5. Click on the **None** button to cancel the selection of all the strategies.

From the Set Strategy List Preferences window you can change the order of the list, rather than leaving them in alphabetical order.

To re-order the strategy list:

1. Select a strategy.
2. Click on the Move to Top, Move Up or Move Down buttons.
3. Click on the **OK** button to apply the changes and close the **Set Strategy List Preferences** window.

Selecting an Underlying Model for Strategy Displays

Plot	Range	WhatIf
Model:	Cox-Ross-Rubinstein ▼	
X-Axis:	Underlying Price ▼	
Y-Axis:	Price Units ▼	
Z-Axis:	Days to Expiration ▼	
Points per X-Axis: (30-120 pts)	Z-Axis: (10-100)	
60	10	

Click on one of the selections in the **Model** section of the **Preferences** window.

You can also select a **Model** from the drop-down list in the **Plot** tab.

Whether you select the model from the Plot tab or the Preferences window, the choice is changed in both places.

Strategy Analysis Defaults

Black Model Defaults

Variable Name	Default Selection
IV Calculation Method	Brent
Implied Volatility Type	Traded
Volatility for Calculation	Apply vol. curve
Average Volatility	Put-Call Separate
Option Price Filter	Ask, Bid, Last Trade, Yesterday's close
Underlying Price Filter	Ask, Bid, Last Trade, Yesterday's close
Increase DTE By	0
Implied Volatility Scale	Percents
Other Greeks scale	Normalized(pr), Days, Percents
Time Direction	Direct Time (negative theta)
Underlying Type	Auto select
Contract Style	American
Display Type	Profit/Loss
Interest Rate (USD)	evaluated by contract: EDAA

Black Scholes Model Defaults

Variable Name	Default Selection
IV Calculation Method	Brent
Underlying Contract Type	Futures
Implied Volatility Type	Traded
Apply IV Curve	No
Use IV for Greeks	Yes

Variable Name	Default Selection
Use IV for Theo. Value	Yes
Average Volatility	At-the-money IV, Put-Call Separate
Option Price Filter	Ask, Bid, Trade, Yesterday's close
Underlying Price Filter	Ask, Bid, Trade, Yesterday's close
Increase DTE by	0
Implied Volatility Scale	Percents
Other Greeks Scale	Price units, Days, Percents
Time Direction	Direct Time (negative theta)
Underlying Type	Auto select
Contract Style	American
Display Type	Profit/Loss
Interest Rate (USD)	evaluated by contract: EDAA

Bourtov Model Defaults

Variable Name	Default Selection
Polynomial Degree	2
Implied Volatility Type	Traded
Volatility for calculation	Apply vol. curve
Average Volatility	Put-Call Separate
Option Price Filter	Ask, Bid, Last Trade, Yesterday's close
Underlying Price Filter	Ask, Bid, Last Trade, Yesterday's close
Increase DTE By	0
Implied Volatility Scale	Percents
Other Greeks Scale	Normalized(pr), Days, Percents

Variable Name	Default Selection
Time Direction	Direct Time (negative theta)
Underlying Type	Auto select
Contract Style	American
Display Type	Profit/Loss
Interest Rate (USD)	evaluated by contract: EDAA

Cox-Ross-Rubinstein Model Defaults

Variable Name	Default Selection
IV Calculation Method	Brent
Foreign Interest Rate	0.050000
Iteration Number	50
Smoothing Factor	1
Implied Volatility Type	Traded
Volatility for calculation	Apply vol. curve
Average Volatility	Put-Call Separate
Option Price Filter	Ask, Bid, Last Trade, Yesterday's close
Underlying Price Filter	Ask, Bid, Last Trade, Yesterday's close
Increase DTE by	0
Implied Volatility Scale	Percents
Other Greeks scale	Normalized(pr), Days, Percents
Time Direction	Direct Time (negative theta)
Underlying Type	Auto select
Dividends Amount	0.0000
Contract Style	American

Variable Name	Default Selection
Display Type	Profit/Loss
Interest Rate (USD)	evaluated by contract: EDAA

Garman-Kohlhagen Model Defaults

Variable Name	Default Selection
IV Calculation Method	Brent
Foreign Interest Rate	0.0500
Implied Volatility Type	Traded
Volatility for calculation	Apply vol. curve.
Average Volatility	Put-Call Separate
Option Price Filter	Ask, Bid, Last Trade, Yesterday's close
Underlying Price Filter	Ask, Bid, Last Trade, Yesterday's close
Increase DTE By	0
Implied Volatility Scale	Percents
Other Greeks Scale	Normalized(pr), Days, Percents
Time Direction	Direct Time (negative theta)
Underlying Type	Auto select
Contract Style	American
Display Type	Profit/Loss
Interest Rate (USD)	evaluated by contract: EDAA

Merton Model Defaults

Variable Name	Default Selection
IV Calculation Method	Brent
Int Rate Correlation with Underlying	0.0000

Variable Name	Default Selection
Implied Volatility Type	Traded
Volatility for calculation	Apply vol. curve
Average Volatility	Put-Call Separate
Option Price Filter	Ask, Bid, Last Trade, Yesterday's close
Underlying Price Filter	Ask, Bid, Last Trade, Yesterday's close
Increase DTE by	0
Implied Volatility Scale	Percents
Other Greeks Scale	Normalized(pr), Days, Percents
Time Direction	Direct Time (negative theta)
Underlying Type	Auto select
Dividends Amount	0.0000
Contract Style	American
Display Type	Profit/Loss
Interest Rate (USD)	evaluated by contract: EDAA

Whaley Model

Variable Name	Default Selection
IV Calculation Method	Brent
Foreign Interest Rate	0.050000
Implied Volatility Type	Traded
Volatility for calculation	Apply vol. curve
Average Volatility	Put-Call Separate
Option Price Filter	Ask, Bid, Last Trade, Yesterday's close
Underlying Price Filter	Ask, Bid, Last Trade, Yesterday's

Variable Name	Default Selection
	close
Increase DTE By	0
Implied Volatility Scale	Percents
Other Greeks Scale	Normalized(pr), Days, Percents
Time Direction	Direct Time
Underlying Type	Auto select
Dividends Amount	0.0000
Contract Style	American
Display Type	Profit/Loss
Interest Rate (USD)	evaluated by contract: EDAA

Table Tabs

On the **Table** Tabs (located just below the application toolbar) you can view detailed information about the selected strategy and its components. Within each of the Table Tabs, some boxes are available so you can fill in the information, and some are not available because information is filled in by the system, based on the dictates of the selected strategy. Except for the Symbol, Call/Put/Underlying, Long/Short, ExpMonth, Strike, Qty, Entry and Comm columns in the Trades tab, which display automatically, you can customize any of the columns within any of the other tabs.

Additionally, with the exception of the **Trades** tab, you can decide which tabs to display and even create your own tabs.

Trades Tab

Trades										
Greeks										
Costs										
TradeTimes										
VolumeOI										
Underlying										
	Symbol	Long / Short	Qty	Exp Month	Strike	Call / Put / Under	Entry	Comm	DTE	Full Symbol
BflyCL								0.00	70	Butterfly Call, Long
Trade 1	EP	Long	1	SEP2	13500	Call	3925	0.00	70	C.EPU213500
Trade 2	EP	Short	2	SEP2	13550	Call	3450	0.00	70	C.EPU213550
Trade 3	EP	Long	1	SEP2	13600	Call	3350	0.00	70	C.EPU213600

Enter up to four trades in the **Trade** boxes. The number of rows displayed under the Trades tab depends on the strategy selected. The rules of the strategy dictate whether the trade boxes are enabled, disabled, or filled. The Trades tab automatically includes boxes for the following items: Symbol, Call/Put/Underlying/Long/Short, ExpMonth, Strike, Qty, Entry and Comm. You can add additional columns.

Symbol Space

You can enter any commodity with options carried by **COG**. Usually only the commodity symbol must be entered. Based on this entry, the system automatically fills in the series information, generally selecting the near-term, at-the-money series.

Example: If today is May 18, 2001, and the Standard & Poor's 500 June futures contract is currently at 1287.60 and SP is entered in the Symbol box, the system displays the June 2001 1290 S & P 500 calls.

To change the series:

1. Click on the dropdown list arrow.
2. Select a series.

Type Input

The trade **Type** can be a **Call**, **Put**, or **Underlying**. A strategy rule generally dictates this setting.

Long/Short Input

A trade can be either long or short. In most cases, a strategy rule controls this setting.

Expiration Month

When an option has been entered, either by a user or by the system, the trade type (Call or Put) appears in the Type box. Additionally, the **Exp Month** box contains a dropdown list of available expiration months. When the Type is Underlying, this box is disabled.

Strike Input

The Strike box lists the strikes for the selected expiration month. When you select a different expiration month, the available strikes and the default strike change, based on the price of the underlying futures contract.

Strategy View uses the at-the-money strike as the default strike, unless a strategy rule for the selected strategy imposes other requirements. In some cases, the available strike list is shortened, based on the contents of another Strike box.

Example: For instance, in a butterfly call strategy, the strike price of trade 2 is greater than the strike price of trade 1. In this case, **CQG** shows only the strikes for trade 2, which are greater than those for trade 1. Similar to the Exp Month box, Strategy View displays a strike price only for options trades.

Quantity Input

The Quantity defaults to 1 contract, or the lowest appropriate ratio numbers for ratio spreads. However, you can change this number.

Note: When the quantity for one trade in a multi-trade strategy is changed, the quantities for the other trades change proportionately.

Entry

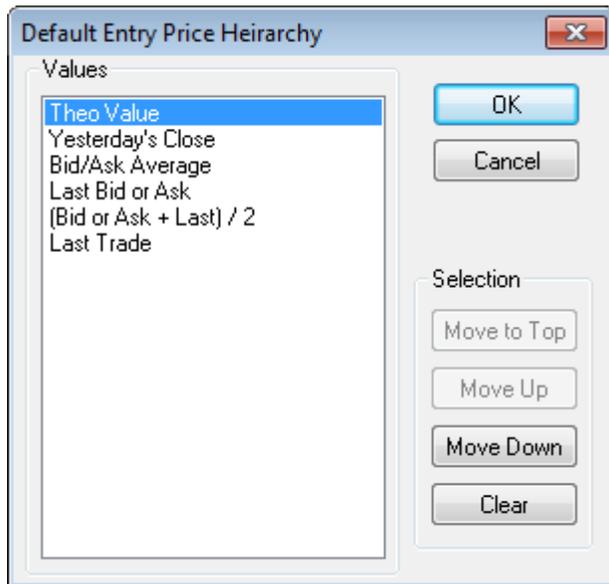
The screenshot shows a dialog box titled "Entry" with the following elements:

- An "OK" button at the top.
- A list of radio buttons for price strategies:
 - Theo Val: 4447
 - Yest Close: 2950
 - Last Ask: 4425
 - (Bid+Ask)/2: 3937
 - (Ask+Last)/2: 4175
 - Last Trade: 3925
- A "Set Defaults" button below the radio buttons.
- A section with input fields:
 - Underlying: 135175
 - Volatility: 17.48
 - DTE: 70
 - Int Rate: 0.41
- A "Reset" button below the input fields.
- A "Cancel" button at the bottom.

To select a new Entry price using the price Strategy or to change the default Entry price:

1. Right click on the **Entry** box. This displays the **Entry Price Selector**.
2. Click on a price from the top half of the Strategy to make that price the Entry price.
Bid/Ask averages are shown only when they can be calculated, but the system always displays a theoretical value (for an option) and a last trade or settlement price. Changing the values in the Underlying, Volatility, DTE or Int Rate boxes results in a new theoretical value.
3. Click on the **Set Defaults** button to make the current selection the default selection.
4. Click on the **OK** button to apply the changes to the current Strategy window and close the entry price selector.

The Entry price of the trade can be input directly into the Entry box. Prior to a user entry, this box contains the default entry price.



Select a default entry price by:

1. Right clicking on the **Entry** cell.
2. This displays the Entry Price Selector.
3. Click on the Set Defaults button.
4. This displays the Default Entry Price Hierarchy window.
5. Click on the **Move To Top**, **Move Up** and **Move Down** buttons to establish the hierarchy.

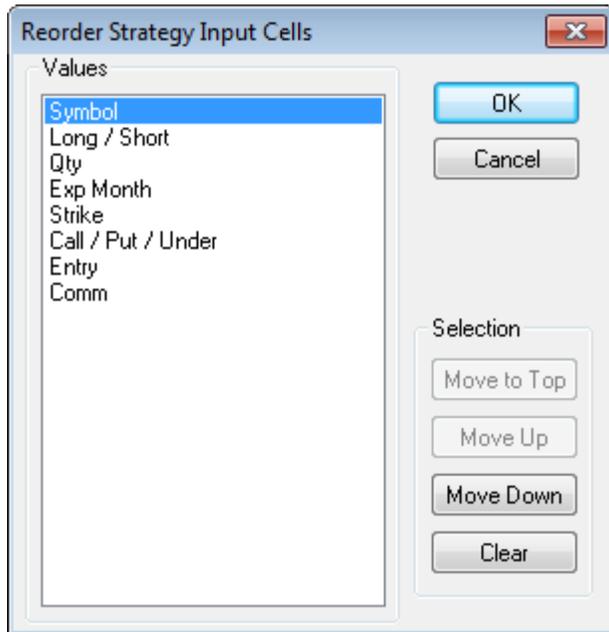
The primary entry price default choice should be at the top with successive entries representing fallback choices that are used if an earlier choice is not available.

You can also change the entry price for only the particular strategy currently under consideration.

Commission

You can systematically track the commissions paid by entering the amount of the commissions in the table under the Comm column.

Re-ordering the Default Columns within the Trades Tab



Reorder the 8 input columns on the Trades tab by:

1. Clicking on the **Setup** button.
2. Selecting Re-order Input Columns.

This displays the Reorder Strategy Input Cells window.

Arrange the columns in the desired order using the Move to Top, Move Up, and Move Down buttons. The first item in the list is the first column in the table, and the rest of the columns are displayed from left to right in the same order as they appear in the list.

Greeks Tab

	Full Symbol	Theo Value	Delta %	Gamma %/pr	Theta pr/day	Vega pr/%	Rho pr/%
BflyCL	Butterfly Call, Long		-0.0117	0.0000	0.0624	-0.3743	-0.0089
Trade 1	C.EPU213500	5035.8	52.3624	0.0032	-35.2734	236.7354	-8.1553
Trade 2	C.EPU213550	4774.3	-101.4938	-0.0065	70.3520	-474.2313	15.4976
Trade 3	C.EPU213600	4520.4	49.1198	0.0033	-35.0162	237.1217	-7.3511

The information in the Greeks tab is customizable by the user.

To set up the columns in the Greeks tab:

1. Select the **Greeks** tab.
2. Click on the **Setup** button.
3. Select Customize...Columns.
4. Select the elements you want to see in the tab.
5. Click on the **Move to Top**, **Move Up** and **Move Down** buttons to arrange the columns.

The first item in the list is the first column in the table, and the rest of the columns are displayed from left to right in the same order as they appear in the list.

Among the items often displayed under the Greeks tab:

- Full Symbol
- Implied Volatility
- Delta
- Gamma
- Theta
- Vega
- Rho

Costs Tab

	Trades	Greeks	Costs	TradeTimes	VolumeOI	Underlying							
	Full Symbol	Trade Qty	Trade Comm	Trade Entry	Theo Value	Last Trade	Credit / Debit	Max Gain	Max Loss	Open Trade Equity	Prof Range At Exp	Prof Range Cur Val	
BflyCL	Butterfly Call, Long		0.00				-1.82	3.18	-1.82	681.50	1351.82 - 1358.18	none	
Trade 1	C.EPU213500	Long 1	0.00	2950	5035.8	3925	-29.50	unlimited	-29.50	487.50			
Trade 2	C.EPU213550	Short 2	0.00	3644	4774.3	3450	72.88	72.88	unlimited	194.00			
Trade 3	C.EPU213600	Long 1	0.00	4520	4520.4	3350	-45.20	unlimited	-45.20	0.00			

Among the items often displayed under the Costs tab:

- The Full Symbol for each instrument used in the selected strategy
- The Credit/Debit for the whole strategy, as well as for each part of the strategy
- The Maximum Gain for each part of the strategy
- The Maximum Loss for each leg of the strategy
- The Open Trade Equity for each piece of the strategy
- The Breakeven Point at Expiration for each part of the strategy
- The Current Breakeven Point for the strategy

Trade Times Tab

Trades	Greeks	Costs	TradeTimes	VolumeOI	Underlying
	Full Symbol	Last Trade	Last Bid	Last Ask	Bid Ask Time
BflyCL	Butterfly Call, Long				
Trade 1	C.EPU213500	3925	3450	4425	15:14
Trade 2	C.EPU213550	3450	3625	3700	15:14
Trade 3	C.EPU213600	3350	3350	3425	15:14

Among the items often displayed under the Trade Times tab:

- The Full Symbol for each instrument used in the strategy
- The Last Trade price for each leg of the strategy
- The Time of the Last Trade for each leg of the strategy
- The Time Elapsed since the Last Trade for each element in the strategy
- The change in price since the last tick
- The Last Bid
- The Last Ask
- The Time of the most recent Bid or Ask

As with the other tabs, you can add columns to the Trade Times **tab**.

VolumeOI Tab

Trades	Greeks	Costs	TradeTimes	VolumeOI	Underlying
	Full Symbol	Vol	OI	Under Total Vol	Under Total OI
StradS	Straddle, Short				
Trade 1	P.USM0110100	7708	12213	192385	524397
Trade 2	C.USM0110100	4	13	192385	524397

Trades	Greeks	Costs	TradeTimes	VolumeOI	Underlying
	Full Symbol				
BflyCL	Butterfly Call, Long				
Trade 1	C.EPU213500				
Trade 2	C.EPU213550				
Trade 3	C.EPU213600				

Among the items often displayed under the VolumeOI tab:

- Full Symbol
- Volume
- Open Interest
- Underlying Total Volume
- Underlying Total Open Interest

Underlying Tab

Trades	Greeks	Costs	TradeTimes	VolumeOI	Underlying	
	Full Symbol	Underlying Trade	Under Trade Change	Under Trade Time	Under Trade Elapse	
BflyCL	Butterfly Call, Long					
Trade 1	C.EPU213500	135175	-100	15:14	:19	
Trade 2	C.EPU213550	135175	-100	15:14	:19	
Trade 3	C.EPU213600	135175	-100	15:14	:19	

Among the items often displayed in the Underlying tab:

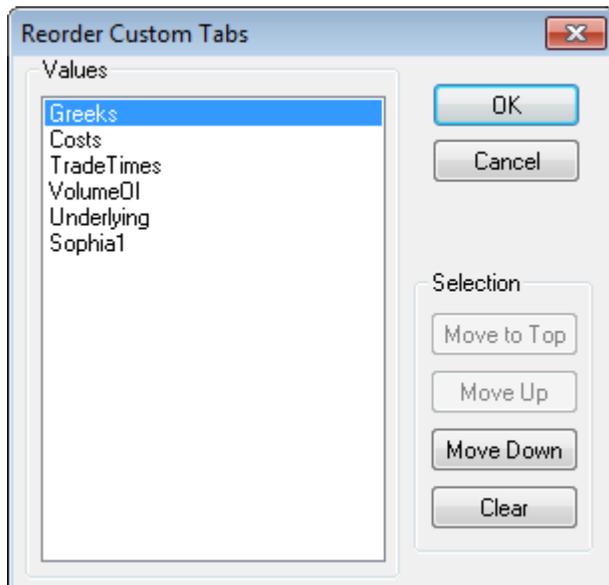
- Full Symbol
- Last Trade in the Underlying
- Change in the Underlying
- The Time of the last trade in the Underlying
- The Time Elapsed since the last trade in the Underlying

Adding User-Created Tabs

Right click on an existing tab

1. Select **New Tab**.
2. This displays the **New User Tab Name** window.
3. Enter a name for the new tab.
4. Click on the **OK** button.
5. This closes the **New User Tab** window, displays the new, user-created tab and displays the **Customize Strategy...Columns** window, allowing you to include the desired items in the new tab.
6. Select the desired items from the **Customize Strategy...Columns** window.

Re-ordering Custom Tabs



Users can re-order the top tabs in Strategy view.

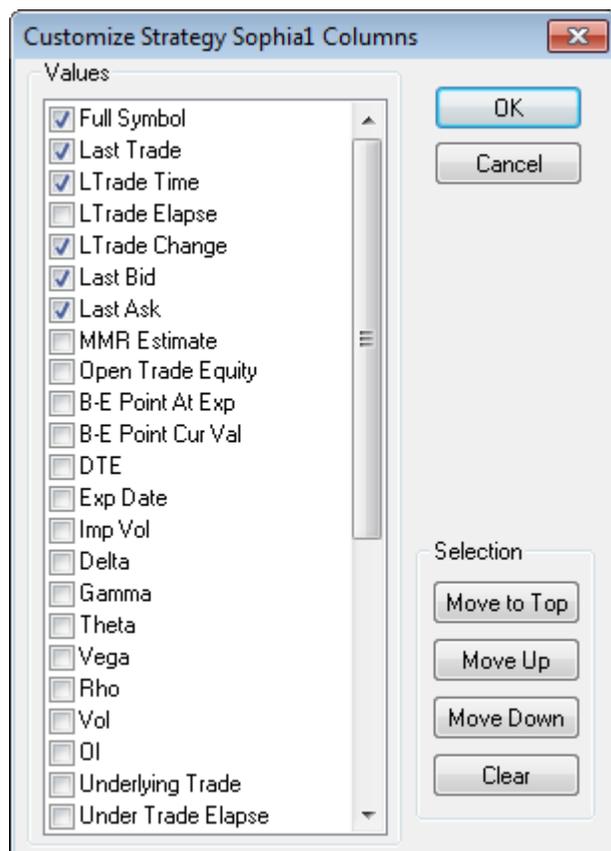
1. Right click on any of the tabs.
2. Select **Reorder User Tabs**.
3. This displays the **Reorder Custom Tabs** window.
4. Change the order of the tabs using the **Move to Top**, **Move Up** and **Move Down** buttons.

Deleting and Renaming a Tab

You can delete or rename any of the top table tabs (except the Trades tab) by:

1. Right clicking on the tab.
 2. Selecting **Delete Tab**.
- Or
1. Selecting **Rename Tab**. This displays the **Rename Tab** window.
 2. Entering the new name for the tab.
 3. Clicking on the **OK** button to close the **Rename Tab** window.

Customizing the Columns in the Table Tabs



With the exception of the 8 columns in the Trades tab, you can completely customize the items displayed in the table tabs.

To select the items that are displayed under each of the tabs:

1. Right click on the desired tab.
2. Select Customize.
3. Use the **Move To Top**, **Move Up** and **Move Down** buttons to control the order of the data in each of the table tab displays.
4. Click on the **All** button to choose every available entry in the Values list for the selected tab.
5. Click on the **None** button, to clear any previously made selections and begin selecting and re-ordering the columns again.

Note: The Symbol, Call/Put/ Underlying, Long/Short, ExpMonth, Strike, Qty, Entry and Comm columns always appear under the Trades tab.

Column Choices for the Table Tabs

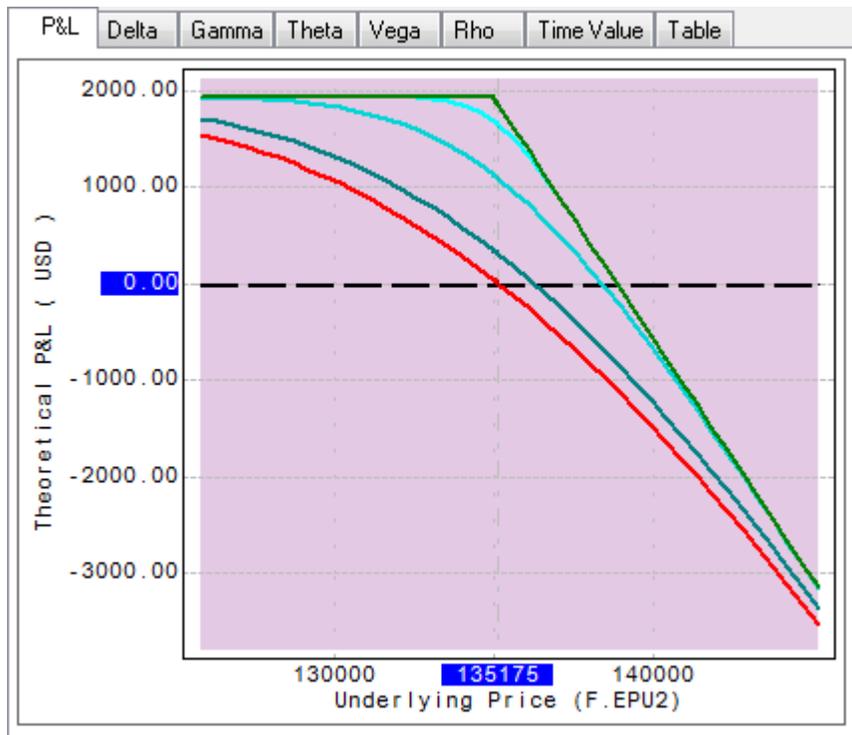
Strike Price Identifier	Description
DTE	Number of days from now until expiration. Note: The DTE for the strategy equal the DTE for the first expiring contract.
Expiration Date	The lowest strike for the strategy.
Full Symbol	The complete symbol for each leg of the strategy.
Last Trade	The value for the last trade.
Last Trade Time	The time of day for the (CT).
Last Trade Elapse	Time elapsed since the last trade.
Last Trade Change	Change in price since the prior close.
Last Bid	The most recent bid.
Last Ask	The most recent offer.
Bid Ask Time	The time for the most recent bid or ask
Credit/Debit	Indicates the total amount received or (paid) before commissions.
MMR Estimate	
Max Gain	Indicates the maximum gain for each leg of the strategy, as well as for the overall strategy.
Max Loss	Indicates the maximum loss for each leg of the strategy, as well as for the overall strategy.
Open Trade Equity	The current value of the strategy - the entry value of the strategy.
B-E Point At Exp	The underlying value necessary to reach the breakeven point at expiration, i.e. where expiration value curve crosses zero.
B-E Point Cur Val	The underlying value currently necessary to break even, that is, where the theoretical value curve crosses zero.
Implied Volatility	The implied volatility for the option contract.
Delta	Change in price with respect to change in the underlying.

Strike Price Identifier	Description
Gamma	Change in the delta with respect to a change in the price.
Theta	The loss in theoretical value in one day, holding all other factors constant.
Vega	The change in theoretical value as a result of a 1point change in volatility.
Rho	The change in theoretical value as a result of a 1 percentage point change in interest rates.
Volume	The volume for the futures of options contract.
Open Interest	The open interest for the selected option or the open interest for the entire complex for an underlying futures contract.
Underlying Trade	The last trade price for the underlying contract.
Under Trade Elapse	The time elapsed since the underlying futures contract last traded.
Under Trade Change	The tick value of the underlying.
Under Trade Time	The time the underlying futures contract last traded.
Underlying Total Volume	The total volume for the relevant futures contract.
Underlying Total Open Interest	The total open interest for the relevant futures contract.
Implied Underlying Price	Implied underlying price uses options data to predict what the market value of the underlying should be. The position summary line provides a weighted average of IU for the entire strategy. The same weighted averaging method is also used for Implied Volatility (IV) calculations.
Trade Quantity	The number of contracts long or short in the strategy.
Trade Commission	The commissions paid for each part of the strategy (users must input these values).
Trade Entry	The entry price for the trade.
Underlying Days to Expiration	The number of days, including the current day, until expiration.
Underlying Avg Vol	The average volatility of the underlying instrument.

Strike Price Identifier	Description
Interest Rate	The user-selected interest rate. (From the Setup menu)
Theo Value	The theoretical value of the option.
Underlying Hist Vol	The historical volatility for the underlying instrument.

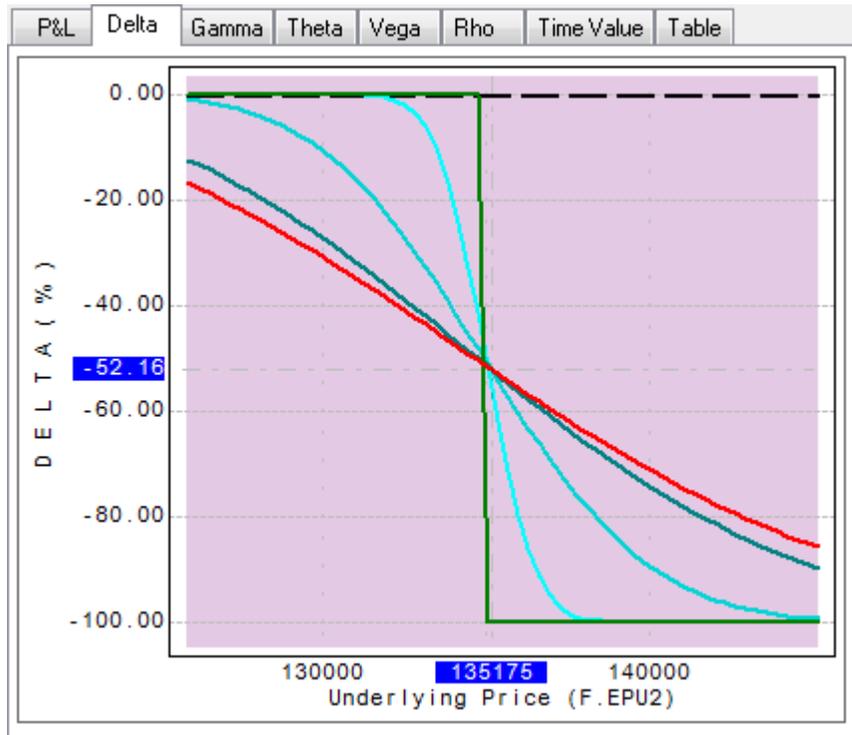
Using the Display Tabs

P&L Tab



The **P&L** tab shows the at-expiration and current profit and loss curves. In the above display, they are colored green and red respectively. However, you can change these colors. The display also shows highlighted boxes on the X- and Y- axes, indicating the current underlying price and the resulting profit or loss.

Greek Tabs



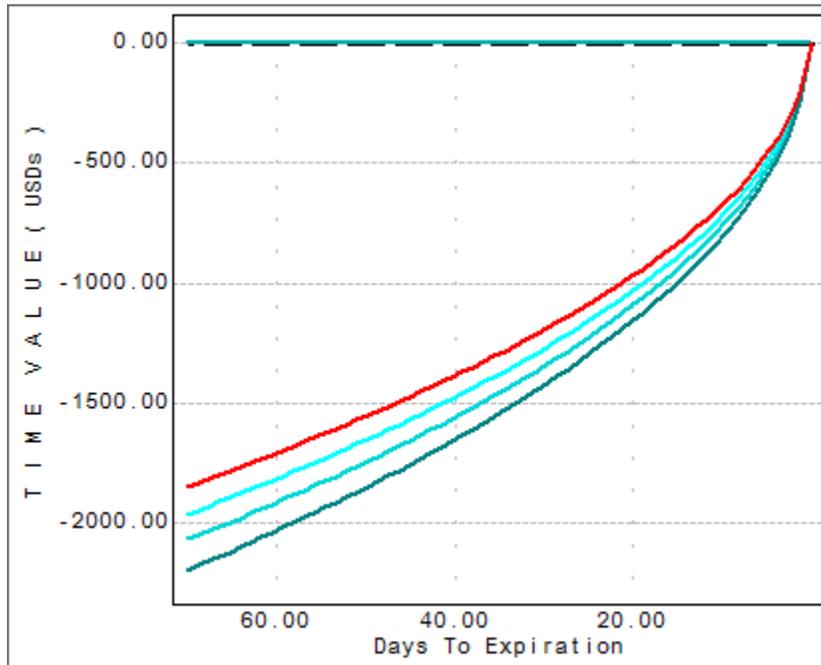
Delta, Gamma, Theta, Vega, and Rho curves can be displayed. Each curve can be shown with respect to:

- The underlying price
- Days to expiration
- Volatility
- Interest Rate

Choose an X-axis variable value by:

1. Clicking on the **Plot** tab.
2. Clicking on the down arrow in the **X-axis** list box.
3. Selecting the desired value.

Time Value Tab



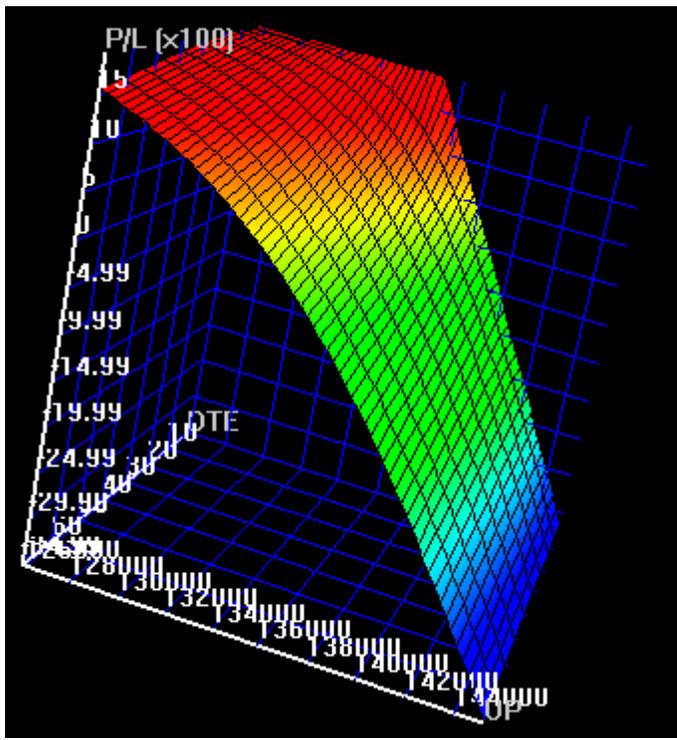
Time value is calculated by taking the value of the strategy at the end of each day and subtracting any intrinsic value.

Table Tab

P&L	Delta	Gamma	Theta	Vega	Rho	Time Value	Table		
	07/13/2012	08/17/2012	09/20/2012	Delta	Gamm	Theta	Vega	Rho	
115500	1918.71	1933.64	1934.04	-1.3042	-0.0009	0.8988	-10.1882	5.7820	
116000	1914.89	1933.04	1934.04	-1.5492	-0.0010	1.0555	-11.3455	6.1356	
116500	1910.52	1932.06	1934.04	-1.8214	-0.0011	1.2275	-12.9909	6.4233	
117000	1905.66	1930.65	1934.04	-2.1146	-0.0013	1.4109	-15.1868	6.6519	
117500	1899.74	1928.89	1934.04	-2.4584	-0.0014	1.6169	-17.3410	6.8857	
118000	1892.73	1926.59	1934.04	-2.8512	-0.0016	1.8454	-19.1599	7.0868	
118500	1884.66	1923.59	1934.04	-3.2916	-0.0018	2.0964	-20.9643	7.2335	
119000	1875.82	1919.85	1934.04	-3.7631	-0.0020	2.3624	-23.6709	7.3218	
119500	1865.72	1915.51	1934.04	-4.2838	-0.0022	2.6464	-26.7578	7.4129	
120000	1853.89	1910.19	1934.04	-4.8716	-0.0024	2.9539	-29.7421	7.4900	
120500	1840.34	1903.64	1934.04	-5.5242	-0.0027	3.2844	-32.2276	7.5311	
121000	1825.10	1895.85	1934.04	-6.2397	-0.0029	3.6379	-34.6912	7.5241	
121500	1808.71	1887.05	1934.04	-6.9925	-0.0032	4.0045	-38.4587	7.4908	
122000	1790.02	1876.63	1934.04	-7.8184	-0.0034	4.3880	-42.3290	7.4602	
122500	1768.78	1864.24	1934.04	-8.7233	-0.0037	4.7898	-46.0406	7.4139	
123000	1745.03	1849.87	1934.04	-9.7047	-0.0040	5.2097	-49.2137	7.3357	
123500	1718.83	1833.88	1934.04	-10.7593	-0.0043	5.6472	-52.1634	7.2128	
124000	1690.82	1815.48	1934.04	-11.8600	-0.0046	6.0929	-56.6128	7.1043	
124500	1659.41	1794.15	1934.04	-13.0429	-0.0049	6.5454	-60.9353	6.9898	
125000	1624.55	1769.92	1934.04	-14.3081	-0.0052	7.0047	-65.0454	6.8558	
125500	1586.29	1743.18	1934.04	-15.6530	-0.0055	7.4709	-68.7750	6.6996	
126000	1544.75	1713.22	1934.04	-17.0737	-0.0058	7.9437	-71.7990	6.5079	
126500	1500.51	1679.27	1934.04	-18.5441	-0.0061	8.4153	-76.2851	6.3579	
127000	1451.92	1641.36	1934.04	-20.0894	-0.0064	8.8778	-80.5211	6.1892	
127500	1399.02	1599.78	1934.04	-21.7078	-0.0066	9.3313	-84.4954	6.0035	
128000	1341.85	1554.33	1934.04	-23.3973	-0.0069	9.7762	-88.2072	5.8038	

The table tab shows the value of Profit and Loss for every strike price. **WhatIf** columns also display if applied.

Setting Properties for 3D Strategy Graph



Note: The Properties for the 3D TSO graph work exactly the same way.

From the 3D Control Properties window users can set the display and motion characteristics related to the 3D Strategy graph display.

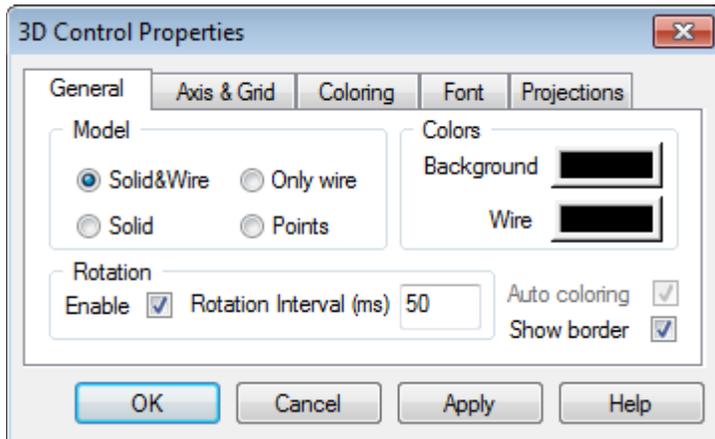
Note: The properties for the TSO display are set separately but in exactly the same way as described below.

To access the 3D Control Properties window:

1. Right click in a **3D Strategy** window.
2. Select Properties.

The 3D Control Properties window contains 5 tabs.

General Tab



The **General** tab of the **3D Control Properties** window consists of 3 sections, **Model**, **Coloring** and **Rotation**.

Model Section

From the **Model** section, select a form for the 3D display. Choices for the display form include:

- **Solid & Wire:** Shows and colors the points to indicate their placement on the display.
- **Solid:** Colors the display to indicate the placement of the points without showing the specific points.
- **Only Wire:** Connects the specific points that comprise the diagram without showing the actual points.
- **Points:** Shows only the specific points that comprise the diagram.

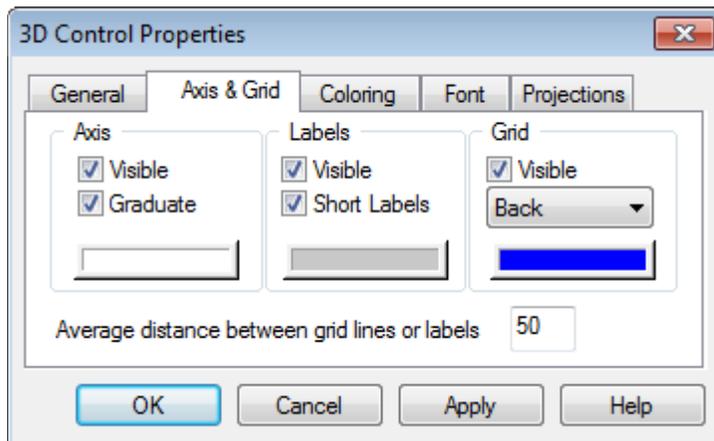
Color Section

- **Back Color:** Click to display the color palette and select the background color for the display.
- **Wire Color:** Click to display the color palette and select the colors for horizontal and vertical lines in the displays.
- **Auto Coloring:** When selected, the system colors the wires based on their level, in accordance with the color scheme you selected in the Coloring Tab.
- **Show Border:** When the Show Border checkbox is selected the system places a one-pixel border around the bottom of the 3-D color scale.

Rotation Section

- **Enable Box:** Click on the Enable box to turn on the rotation feature.
- **Rotation Interval:** Allows users to set the speed of the rotation (in milliseconds).

Axis & Grid Tab



The Axis & Grid tab allows users to show or hide the Axes, Labels and Grids, as well as to set other properties related to Axes, Labels and Grids.

Establishing Axis Properties

- Click on the Visible checkbox to show or hide the three axes related to the selected tab in the Strategy window.
- Click on the color bar (green in the above example) to change the color of the three axis lines.

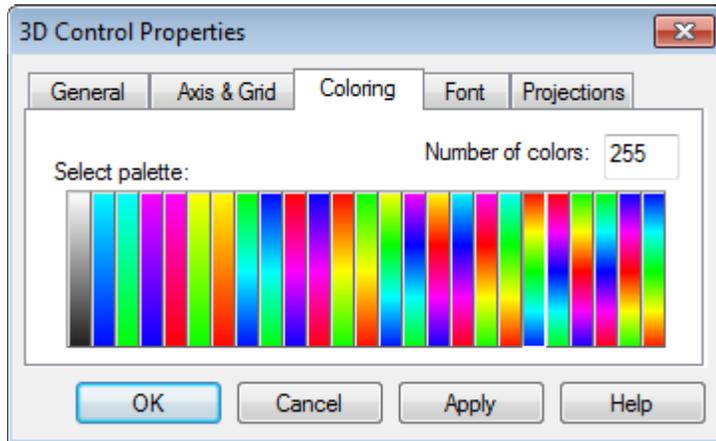
Establishing Label Properties

- Click on the Visible checkbox to show or hide the label on the display.
- Click on the Short Labels checkbox to show the label abbreviation, for example P/L, rather than the long label, Theoretical Profit/Loss, on the display.
- Click on the color bar (purple in the above example) to change the grid label colors.

Establishing Grid Properties

- Click on the Visible checkbox to show or hide the display grids.
- Click on the drop-down list button to place the grids.
- Choices for grid placement include: Front, Back or All Sides.
- Click on the color bar (green in the above example) to change the grid colors.

Coloring Tab



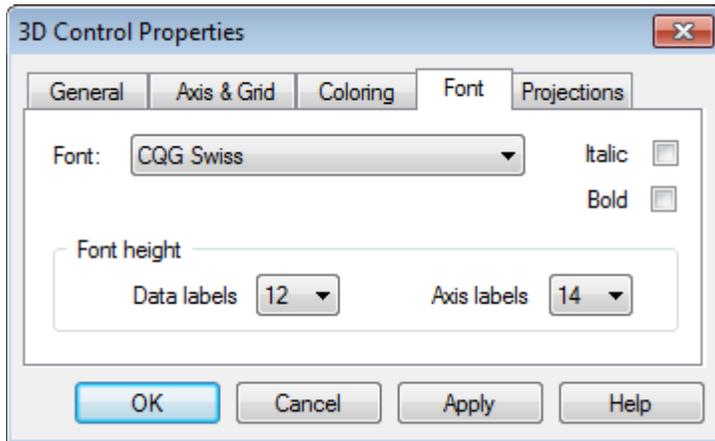
The Coloring tab allows you to select the number and range of colors that appear on the 3D options graphs. These colors allow you to see, at a glance, the general level of various graph values.

To use the Coloring Tab:

1. Enter the number of colors to be used for the displays in the Number of colors box.
The maximum number of colors available depends on the graphics card installed on the computer.
2. Select one of the color switches to reflect the colors used in the display. The selected switch is indicated by a white outline on the bottom and right side of a switch.

The colors in the selected switch appear in the vertical indicator on the Strategy display, with colors at the top of color bar representing higher graph values and lower colors on the bar representing lower values.

Font Tab



The Font tab allows you to select the font size and style for the letters and numbers in the 3D Strategy graph displays.

CQG offers over 30 font styles.

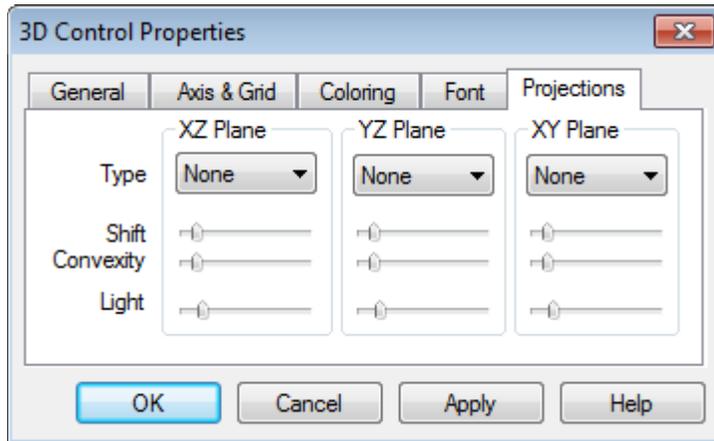
To select a font style:

1. Click on the drop-down list arrow.
2. Select a style from the list.

Additionally, by selecting the appropriate box, you can make the fonts Italic, Bold or both.

You can also select the font height for the Data labels and Axis labels by inputting the desired font size in the box.

Projections Tab



The **Projections** Tab allows you to control properties associated with the 3 planes in the **Strategy Graph display**.

The 3 planes are the **XZ**, which is perpendicular to the Y axis, the **XY** plane, which is perpendicular to the Z axis and the **YZ** plane, which is perpendicular to the X axis.

Select **None** or **Visible** to show or hide any of the 3 planes.

The **Shift** control allows you to move the selected plane along the associated axis. The XZ plane would shift along the Y axis, the YZ plane would shift along the X axis and the XY plane would move along the Z axis.

The **Convexity** control curves the projection plane.

The **Light** control adjusts the brightness of each of the planes.

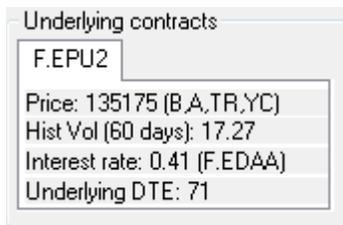
Additional Display Properties

Besides the elements controlled in the 3D Control Properties window, you can set various display properties by right-clicking within the strategy graph display.

This displays the following menu items:

Strike Price Identifier	Description
Properties	Displays the 3-D Control Properties dialog.
Show	The lowest strike for the strategy.
Full Screen	Removes the color panel and vertical and horizontal scroll bars, leaving only the 3-D graph displayed in the graph area.
All Controls	Displays the color bar and vertical and horizontal scroll bars.
Color Panel	Shows/Hides the color along the left side of the 3-D graph.
Horiz Scroll	Shows/Hides the horizontal scroll bar along the bottom of the 3-D graph.
Vert Scroll	Shows/Hides the vertical scroll bar along the right side of the 3-D graph.
Reset Position	Resets the graph to its original, un-rotated position.

Underlying Information



Underlying contracts	
F.EPU2	
Price:	135175 (B.A,TR,YC)
Hist Vol (60 days):	17.27
Interest rate:	0.41 (F.EDAA)
Underlying DTE:	71

The Underlying contracts tab provides the following information for each underlying contract in the strategy:

- Last Trade or settlement
- Historical Volatility
- Interest Rate
- Days until Expiration

Display Properties

Plot	X-Range	Z-Range
Model:	Black	
X-Axis:	Underlying Price	
Y-Axis:	Price Units	
Z-Axis:	Days to Expiration	
Points per X-Axis: (30-120 pts)	Z-Axis: (10-100)	
60	10	

The **Display Properties** window sets various display characteristics for the 2-and 3 dimensional strategy displays.

The 2-Dimensional Display Properties

Plot	Range	WhatIf
Model:	Black	
X-Axis:	Interest Rate	
Y-Axis:	Price Units	
Z-Axis:	Days to Expiration	
Points per X-Axis: (30-120 pts)	Z-Axis: (10-100)	
60	10	

Plot Tab

From the **Plot** tab, you can select an options model from the dropdown list.

Additionally, you can choose the variables represented on the X and Y axes, as well as the number of points included on the X axis.

The X-axis can only be changed for Greek displays. X-axis choices include:

- Underlying Price
- Days to Expiration
- Interest Rate
- Volatility

The X-axis is always Underlying Price for the P&L display and Days to Expiration for the Time Value display.

Note: The value selected here for X-axis is also reflected in the Range tab.

The Y-axis can be changed for all the displays. The choices for the Y-axis are:

- U.S. Dollars
- Full Points
- Price Units
- Tick Units

To select the X-axis or Y-axis variable:

1. Click on the drop-down list button associated with an axis.
2. Select the variable.

Range Tab

You can set display parameters and characteristics from the **Range** tab.

The **Range** tab takes 3 similar, but somewhat different, forms in the various Strategy graph views.

From the P&L Tab

Plot Range WhatIf

X-Axis: Underlying Price

Low: 117198 High: 155909

Use standard deviation range.

Display: Lines Shades

1 StdDev 2 StdDev

3 StdDev 4

From P&L displays, you set the range for the x-axis using either numbers or Standard Deviations.

To set the range for the display using numbers, simply enter the desired numbers in the appropriate **Low:** and **High:** boxes.

To set the range for the display using Standard Deviations:

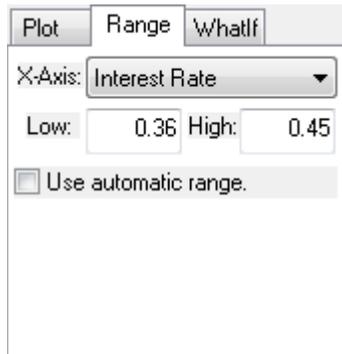
1. Select the Use Standard Deviation Range: checkbox.
2. Select the **Standard Deviations** to be included in the display.

Or

1. Select a custom **Standard Deviation** by:
 2. Selecting the white box in the lower right hand corner.
 3. Entering the desired value.
 4. [Enter]

Users can also select the form for the display of the range display by selecting either or both of the **Lines** and **Shades** checkboxes.

From the Greeks and Time Value Tabs



Plot Range Whatif

X-Axis: Interest Rate

Low: 0.36 High: 0.45

Use automatic range.

From the Greeks tabs the Range window allows users to select the following values:

X-axis: Choices include: Days Until Expiration, Interest Rate, Underlying Price or Volatility.

Note: For the Time Value tab the X-axis is always days until expiration.

And

A range of values, either selected by the user or by **COG**.

Enter values in the Low and High boxes to select a range.

Or

Select the Use automatic range checkbox to allow **COG** to automatically select a range.

For Volatility for the X-Axis or the Z-Axis, the system takes a range equal to 80-120% of the Underlying Average Volatility.

For Interest Rate for the X-Axis or the Z-Axis, the system takes a range equal to 90-110% of the Interest Rate associated with the underlying contract.

From the Table Tab



The screenshot shows a software interface with three tabs: "Plot", "Range", and "Whatif". The "Range" tab is selected. Below the tabs, there is a dropdown menu labeled "X-Axis" with "Underlying Price" selected. Below that, there are two input boxes: "Low:" with the value "47500" and "High:" with the value "225000". At the bottom, there is an "Increment:" label followed by an input box containing the value "50".

From the Table tab the Range window allows users to set the high-low range of the table, in addition to the table increment.

To change the range:

Enter values for Low and High in the corresponding boxes.

[Enter]

To change the increment:

Enter a new value in the Increment box.

[Enter]

What If Tab

Plot	Range	WhatIf		
Volatility				
Vol shift	*0.80	*0.90	*1.10	*1.20
Interest	4.43	4.99	6.09	6.65
DTE	14	28	43	57
Color				

The **What Ifs** tab enables users to enter up to 4 what-if values for **Volatility** or **Volatility Shift**, Interest Rate, and Days to Expiration. Up to four What If lines may be added to the graph, with different constant volatilities or volatility shift factors, Interest Rates and Days to Expiration for each line. Also, a different color may be selected to display each line.

The **Volatility Shift** allows users take into account varying volatilities of a strategy that uses multiple series. By using a Volatility Shift factor, rather than a constant volatility, users affects all series in the strategy in a similar manner, rather than having an extreme effect on a particular series in the strategy.

Users may enter values directly into the spreadsheet cells.

Or,

Double click on the label for Volatility, Interest, or DTE to insert a range of values in the corresponding row.

The values are inserted based on the following:

Volatility:	The CQG Underlying Average Volatility, as shown in the Greeks tab is multiplied by .8, 9, 1.1, and 1.2.
Interest:	The CQG default interest rate, as shown in the Underlying Contracts tab is multiplied by .8, 9, 1.1, and 1.2.
DTE:	The number of days until expiration is divided by 5.
Color:	Separate colors can be assigned to each WhatIf scenario or different shades of one color can be used across the WhatIfs.

1. Click in one of the color boxes.
2. Select a color from the color palette.
3. A range of shades of one color can be assigned to each **WhatIf** scenario.

1. Click a color label.
2. Select a color from the color palette
3. This colors each of the WhatIf lines with a different shaded of the selected color.
4. Right-click on a label to remove all the values in that row
5. Right-click on a cell to remove the value in that individual cell.

The 3-Dimensional Display Properties

The screenshot shows a dialog box titled 'Plot' with two tabs: 'X-Range' and 'Z-Range'. The 'Model' dropdown is set to 'Black'. The 'X-Axis' dropdown is set to 'Underlying Price', the 'Y-Axis' dropdown is set to 'Price Units', and the 'Z-Axis' dropdown is set to 'Volatility'. Below these are two input fields: 'Points per X-Axis: (30-120 pts)' with the value '60' and 'Z-Axis: (10-100)' with the value '10'.

The display properties window is somewhat different for the 3-dimensional displays vs. the 2-dimensional displays.

Plot Tab

From the Plot tab users can also set the number of points used in plotting the curves. Points for the X-axis range from 30 to 120, while the number of points which they system can plot on the Z-axis ranges from 10-100. Up to six lines may be plotted. Since the display is re-drawn in response to market changes, the system may be calculating a large number of points very frequently. Users with a slow options model or a slow processor may want to use a lower number of points to speed up the display.

The X-axis can only be changed for Greek displays. X-axis choices include:

- Underlying Price
- Days to Expiration
- Interest Rate
- Volatility

The X-axis is always Underlying Price for the P and L display and Days to Expiration for the Time Value display.

Note: The value selected here for X-axis is also reflected in the Range tab.

The Y-axis can be changed for all the displays. The choices for the Y-axis are:

- U.S. Dollars
- Full Points
- Price Units
- Tick Units

The Z-axis can be changed for all the displays. The choices for the Z-axis **are:**

- Days to Expiration
- Interest Rate
- Volatility

To select the X, Y or Z-axis variable:

1. Click on the drop-down list button associated with the appropriate axis
2. Select the desired choice.

The X-axis can be changed for Greek displays. Choices include:

- Underlying Price
- Days to Expiration
- Interest Rate
- Volatility

The X-axis is always Underlying Price for the P and L display and Days to Expiration for the Time Value display.

Note: The value selected here for X-axis is also reflected in the X-Range tab.

The Y-axis can be changed for all the displays. The choices for the Y-axis are:

- U.S. Dollars
- Full Points
- Price Units
- Tick Units

The Z-axis can also be changed for all the displays. The choices for the Z-axis are:

- Days to Expiration
- Interest Rate
- Volatility

X-Range Tab

The screenshot shows a software interface with three tabs: 'Plot', 'X-Range', and 'Z-Range'. The 'X-Range' tab is active. Below the tabs, there is a dropdown menu for 'X-Axis' with 'Days to Expiration' selected. Below that are two input fields: 'Low:' with the value '0' and 'High:' with the value '70'. At the bottom of the tab area is a checkbox labeled 'Use automatic range.' which is currently unchecked.

The X-Range tab allows users to set the value represented by the X-axis, as well as the range for the x-axis values. The value selected for the X-axis from the X-Range tab is also reflected in the value displayed for the X-Axis in the Plot tab.

The X-axis can be changed only for Greek displays. Choices include:

- Underlying Price
- Days to Expiration
- Interest Rate
- Volatility

The X-axis is always Underlying Price for the P and L display and Days to Expiration for the Time Value display.

CQG gives users 2 ways to establish the X-Range, either manually, through user-selected Low and High values, or automatically, where **CQG** selects the value range.

To manually set the range for the display, simply enter the desired numbers in the appropriate Low: and High: boxes.

To allow CQG to set the range automatically, select the Use automatic range checkbox.

- For Volatility for the X-Axis or the Z-Axis, the system takes a range equal to 80-120% of the Underlying Average Volatility
- For Interest Rate for the X-Axis or the Z-Axis, the system takes a range equal to 90-110% of the Interest Rate associated with the Underlying contract.

Z-Range Tab



The screenshot shows the Z-Range tab of a software interface. It features three tabs at the top: 'Plot', 'X-Range', and 'Z-Range', with 'Z-Range' being the active tab. Below the tabs, there is a 'Z-Axis' dropdown menu currently set to 'Volatility'. Underneath, there are two input fields: 'Low:' with the value '13.03' and 'High:' with the value '19.54'. At the bottom of the tab, there is a checkbox labeled 'Use automatic range.' which is currently unchecked.

The Z Range tab allows users to set the value represented by the Z-axis, as well as the range for the Z-axis values. The value selected for the Z-axis from the Z-Range tab is also reflected in the value displayed for the Z-Axis in the Plot tab.

The Z-axis can be changed for all the displays. The choices for the Z-axis in all the displays are:

- Days to Expiration
- Interest Rate
- Volatility

CQG gives users 2 ways to establish the Z-Range, either manually, through user-selected Low and High values, or automatically, where CQG selects the value range.

- To manually set the range for the display, simply enter the desired numbers in the appropriate **Low:** and **High:** boxes.

To use the automatic range:

- To automatically establish the Z-Range, select the Use Automatic range checkbox from the Z-Range tab or the X-Range tab.

When the Use Automatic range checkbox is selected:

- For Volatility for the X-Axis or the Z-Axis, the system takes a range equal to 80-120% of the Underlying Average Volatility
- For Interest Rate for the X-Axis or the Z-Axis, the system takes a range equal to 90-110% of the Interest Rate associated with the Underlying contract.
- For Days to Expiration for the X-Axis or the Z-Axis, the range covers from zero up to the number of days until expiration.

Creating and Editing Strategies

The Strategy Rules window displays the trade components of a strategy and gives a brief description of the market expectations appropriate for the strategy and the risk characteristics associated with the strategy.

Viewing the Components of a Strategy

The screenshot shows the 'Strategy Rules' window. At the top, there is a dropdown menu set to 'Christmas TreeCall, Long' and a 'Number of trades' section with radio buttons for 1, 2, 3 (selected), and 4. Below this, the 'Name' field contains 'Christmas Tree Call, Long' and the 'Abbreviation' field contains 'CTreeCL'. There are also dropdown menus for 'Market Indicator' and 'Risk Profile'. A table lists the trade components:

	Purchase	Type	Symbol	Exp. Date	Strike	Quantity
Trade 1	Long	Call				
Trade 2	Short	Call	=sym1	=exp1	>str1	=qty1
Trade 3	Short	Call	=sym1	=exp1	>str2	=qty1
Trade 4						

At the bottom of the window are buttons for 'Save', 'Copy', 'New', and 'Close'.

1. Click the Rules button.
2. Click the strategy list drop down button.

The **Market Indicator** shows the market expectation underlying the strategy. The Indicator ranges from Strongly Bearish to Strongly Bullish. The other **Market Indicators** are:

- Bearish
- Mildly Bearish
- Neutral
- Mildly Bullish
- Bullish
- Volatile

The **Risk Profile** indicator gives a brief description of the level and direction of risk associated with each strategy. Possibilities include:

Limited

- Unlimited Upside
- Unlimited Downside
- Unlimited

Creating Strategies

Through the Strategy Rules window, users can create new strategies, as well as edit previously created strategies. Strategies supplied with **COG** may not be edited directly.

To create a new strategy or modify a strategy previously created by the user:

Click the Rules button. This displays the Strategy Rules window.

	Purchase	Type	Symbol	Exp. Date	Strike	Quantity
Trade 1	Long	Call				
Trade 2	Short	Call	=sym1	=exp1	>str1	=deltaneutral
Trade 3						
Trade 4						

When creating a new strategy, the **Copy** button can be used to copy an existing strategy. Modifications can be made to the name, abbreviation and rules.

To copy an existing strategy

1. Select a strategy using the drop- down list button.
2. Click on the **Copy** button.
3. The new strategy is exactly the same as the old one, except the name has **Copy** in the front.

To edit an old strategy

1. Click on the dropdown list under **Purchase**.
2. Select either **Long** (for buys) or **Short** (for sells).
3. Click on the dropdown list under **Type**.
4. Select either **Call**, **Put** or **Underlying**.

Enter a Symbol

For single trade strategies, no symbol is needed. For strategies with multiple trades, the first symbol cell is blank, and the others

contain =sym1.

Enter an Expiration Date definition

For single trade strategies, no expiration date is needed. For strategies with multiple trades, the first symbol cell is blank, and the others

contain either =exp1 for a contract with the same expiration date, <exp, if the second expiration date is earlier than the first contract, or >exp, if the second expiration is further out than the first contract's expiration date.

Enter a Strike definition

For single trade strategies, no Strike price is needed. For strategies with multiple trades, the possible strike price inputs and their definitions are as follows:

Strike Price Identifier	Definition
=high	The highest strike for the strategy.
=low	The lowest strike for the strategy.
=str1	This strike price equals strike price #1
>str1,2,3	This strike price is greater than strike price 1,2 or 3
<str1,2,3	This strike price is less than strike price 1,2 or 3

Enter a Quantity definition

For the first trade, whether a single or multiple trade strategy, no quantity is needed. Other quantities are expressed as a comparison with the first quantity.

Example: qty*2

To create a completely new strategy

1. Click on the **Rules** button.
2. Click on the **New** button.
3. Select the radio button indicating the number of trades in the strategy.
4. Enter a name and an abbreviation for the study.
5. Select a **Market Indicator** from the drop-down list.
6. Select a **Risk Profile** from the drop-down list.
7. Click on the dropdown list under **Purchase**.
8. Select either **Long** (for buys) or **Short** (for sells).
9. Click on the dropdown list under **Type**.
10. Select either **Call**, **Put** or **Underlying**.
11. Enter a **Symbol**:

For single trade strategies, no symbol is needed. For strategies with multiple trades, the first symbol cell is blank, and the others contain =sym1.

Enter an Expiration Date definition

For single trade strategies, no expiration date is needed. For strategies with multiple trades, the first symbol cell is blank, and the others contain either =exp1 for a contract with the same expiration date or >exp, if the second expiration date is further out than the first contract's expiration date.

Enter a Strike definition

For single trade strategies, no Strike price is needed. For strategies with multiple trades, the possible strike price inputs and their definitions are as follows:

Strike Price Identifier	Definition
=high	The highest strike for the strategy.
=low	The lowest strike for the strategy.
=str1	This strike price equals strike price #1
>str1,2,3	This strike price is greater than strike price 1,2 or 3
<str1,2,3	This strike price is less than strike price 1,2 or 3

Enter a Quantity definition

For the first trade, whether a single or multiple trade strategy, no quantity is needed. Other quantities are expressed as a comparison the first quantity.

Example: $qty * 2$

No strategies may have the same name or abbreviation. The New button allows users to write a new strategy from a blank window.

The **Purchase** (long or short) and the trade **Type** (call, put or underlying) must be defined for each trade. If a cell has no rule defined, there is no restriction on data entry in the corresponding trade entry box of the Strategy window.

When a rule is given, it must define the data entry with respect to a previous trade's data of the same type as the rule being entered. For instance, a symbol rule can be " $=sym1$ " or a strike rule can be " $>str2$ ". Before a strategy definition is saved, the rule interpreter must be satisfied that the rules you have entered make sense.

Once the strategy has been defined and saved, the new strategy appears as part of the list of strategies immediately after users close the Rules window, allowing users to immediately enter new trades using the strategy.

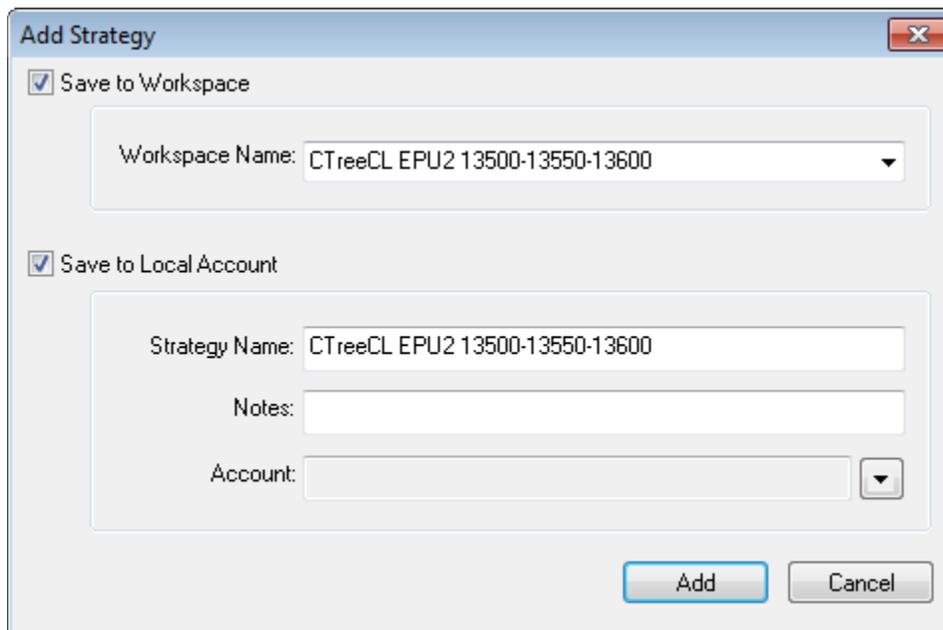
Saving an Options Strategy

Saving user-created strategies enables the strategy to be re-used. Strategies are saved via the Save Strategy window.

To save a user-created strategy:

Click on the **Save** button. This displays the **Save Strategy** window.

Using the Save Strategy Window



The screenshot shows a dialog box titled "Add Strategy". It has a close button in the top right corner. There are two checked checkboxes: "Save to Workspace" and "Save to Local Account". Under "Save to Workspace", there is a dropdown menu for "Workspace Name" with the value "CTreeCL EPU2 13500-13550-13600". Under "Save to Local Account", there is a text field for "Strategy Name" with the same value, a text field for "Notes", and a dropdown menu for "Account". At the bottom right are "Add" and "Cancel" buttons.

The **Save Strategy** window allows users to save the selected strategy, with trades, to a Workspace, to a local account (which is displayed in your Orders and Positions view) or to both. The saved strategy can be accessed later using the Load button. When trades are saved to a local account, you have the option to set market expectations associated with the strategy. Strategies saved to a local account become a single position in the Orders and Positions can be viewed and manipulated in that view.

If you save the strategy to a workspace, the positions are not entered into a local account, and you are not able to view them in the Orders and Positions view. Unlike saving a strategy view to a page, when the strategy is saved as a workspace, it can be loaded into a Strategy window on any page.

Selecting the check box Set automatic alerts on price expectations causes your expectations to be used to set and remove price alerts on the underlying. When the expected start date is reached, the price alert automatically sets itself. Likewise, when the stop date is reached, the system removes the alert.

The window also allows you to save the strategy to a local account, so it can be monitored as part of an overall portfolio.

To Save a Strategy and its Trades to a Workspace:

Click on the Save To Workspace checkbox within the Save Strategy window.

The Workspace Name appears automatically as the name of the strategy with the currently input trades. You can change this by simply entering a new Workspace Name.

To Save a Strategy and its Trades to a local account:

1. Click on the Save To Local Account checkbox in the Save Strategy window.
2. Select a new strategy name, if desired.

The current strategy name, along with the selected series, initially appears in the Strategy Name box. However, you can change this by entering a new name in the Strategy Name box.

Setting an Alert based on Price Expectations for the Strategy:

You can enter price expectations for the strategy's underlying contract by entering the desired prices in the Low Price and/or High Price boxes. Additionally, you can set time parameters by entering dates in the Starting Date and/or Ending Date boxes. If you select the Set automatic alerts on price expectations checkbox, the system warns you if either of the Underlying Expectations criterion are met within the designated time frame.

When all the desired selections are made in the **Save Strategy** window:

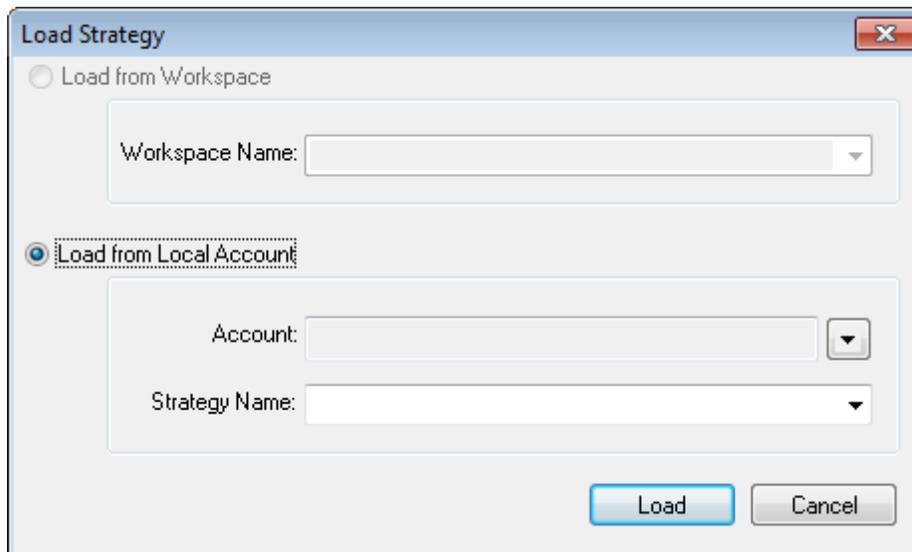
Click on the **Save** button to register the selections and close the **Save Strategy** window.

Hitting the **Save** button at this time automatically saves the market expectations and the strategy to the a local account or to a Workspace where it can be accessed later using the Load button. When trades are saved as part of a strategy, they become a single position in the Orders and Positions view where they can be viewed and manipulated.

Selecting the check box Set automatic alerts on price expectations causes your expectations to be used to set and remove price alerts on the underlying. When the expected start date is reached, the price alert automatically sets itself. Likewise, when the stop date is reached, the system removes the alert. For additional information about setting and removing Alerts, see the Alerts chapter.

Loading a Saved Strategy

Click on the **Load** button to display the **Load Strategy** window.



Once a strategy has been saved it can be easily re-used by simply re-loading it into the Strategy view

To load a previously saved strategy or workspace:

1. Click on the **Load** button.
 2. Select the **Load Workspace** button.
 3. Click on the **Workspace Name** dropdown list button to select the desired workspace to load.
- Or
1. Select the Load a Strategy from Local Account button.
 2. Select the desired account. The list of accounts consists of those accounts the user has set up in the Orders and Positions view. For information about setting up accounts in the Orders and Positions view, click [here](#).
 3. Select the desired strategy from the drop-down list. The list consists of all strategies you have saved.
 4. Select the **Include exit Trades** checkbox to show the status of the strategy as it stands after any parts of it have been liquidated. If selected, the profit and loss curve are shifted up or down (maintaining its same shape) to reflect any liquidated trades that were part of the selected strategy.
 5. Click on the **Load** button to retrieve the strategy.

Using the Strategy Workspace Manager Window

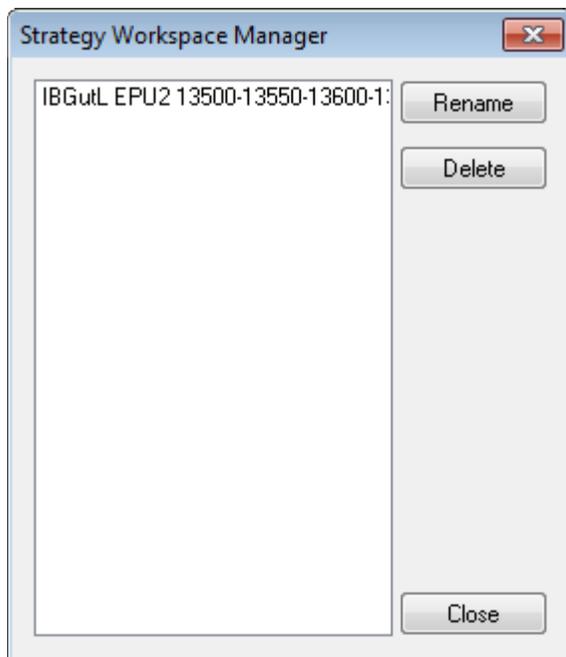
You can easily delete or rename any strategy that has been saved to a workspace by using the Strategy Workspace Manager window. You must first have a strategy saved to a workspace to make this menu option available.

To access the Strategy Workspace Manager window:

1. Click on the **Setup** button.
2. Select Workspace Manager.

This displays the **Strategy Workspace Manager** window.

Renaming or Deleting a Strategy Workspace



The Strategy Workspace Manager displays any strategies that users have saved.

Renaming a Strategy Workspace

1. Select the workspace you want to rename.
2. Click **Rename**.
3. Enter the new name for the **Workspace**.
4. Click **Close**.

Deleting a Strategy Workspace

1. Select the **Workspace** you want to delete.
2. Click **Delete**.
3. Click **Close**.

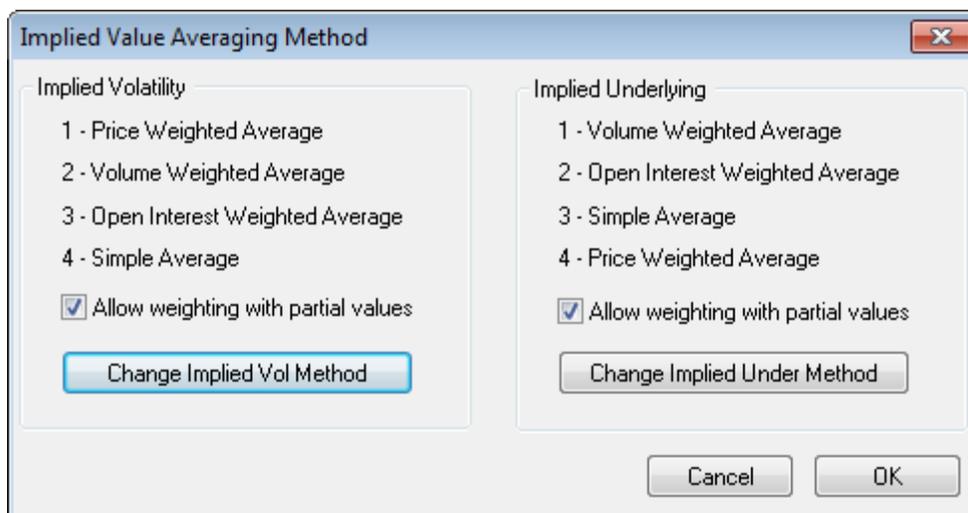
Weights

The ability to use the options models to derive the implied underlying price and Implied Volatility is available under the Weights button. CQG accomplishes this by supplying the selected options model with all the inputs except the underlying price, which is seeded as a start value. Next, the system uses a search algorithm to find the underlying price that satisfies the option value observed in the market. This is the same method used to find implied volatility. For average implied values there are a number of averaging methods that may be employed.

To change the order of the Averaging Methods

1. Click on the **Setup** button.
2. Select **Weights**.
3. This displays the Implied Value Averaging Method window.

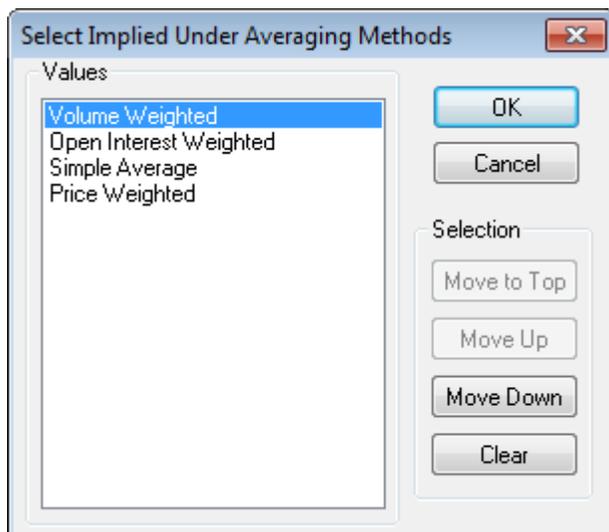
Using the Implied Value Averaging Method Window



To change the order of the Averaging Methods

1. Click on the Change Implied Vol Method or Change Implied Under Method buttons.
2. Either the Select Implied Vol Averaging Methods window or the Select Implied Under Averaging Methods window is displayed.

Using the Select Implied Vol Averaging Methods and Select Implied Under Averaging Methods windows



Note: The Select Implied Vol Averaging Methods and Select Implied Under Averaging Methods windows work exactly the same way.

Click on the **Move to Top**, **Move Up** and **Move Down** buttons to arrive at the desired order.

Volume Weighted Averaging Method

This method places the greatest emphasis on contract with the greatest daily volume. The greater the volume traded for the option in question, the more weight is given to the option's implied value. When using this method, one assumes that the current trading activity is most relevant in a determination of market behavior. Specifically, for n number of trades, each with a separate open interest, the method would be used as follows:

Variable	Definition
VOL ₁	Volume for trade 1
VOL ₂	Volume for trade 2
VOL _n	Volume for trade n
UP ₁	Implied underlying price for trade1
UP ₂	Implied underlying price for trade 2
UP _n	Implied underlying price for trade n
AUP	Average implied underlying price for the strategy
TOI	Total open interest for all trades.

The average is the sum of each implied underlying price for each trade weighted by its proportion of the total volume for all trades:

$$AUP = [VOL_1 / (AUP * UP_1)] + [VOL_2 / (AUP * UP_2)] + [VOL_n / (AUP * UP_n)]$$

Open Interest Weighted Averaging Method

This method places emphasis on open interest for the option contract. More weight is given to the implied values derived from options with the greatest open interest. An underlying assumption when using this method is that the interest in a contract requires holders of that contract to adjust their positions in accordance with their market expectations. A large open interest on a low volume suggests that the contract holders are satisfied that the option is correctly valued in the market and that adjustments are not in order. Therefore, volume is not required to justify the importance of the contract with respect to the market. Specifically, for n number of trades, each with a separate open interest, the method would be used as follows:

Variable	Definition
OI ₁	Open interest for trade 1
OI ₂	Open interest for trade 2
OI _n	Open interest for trade n
UP ₁	Implied underlying price for trade1
UP ₂	Implied underlying price for trade 2
UP _n	Implied underlying price for trade n
AUP	Average implied underlying price for the strategy
TOI	Total open interest for all trades.

The average is the sum of each implied underlying price for each trade weighted by its proportion of the total open interest for all trades:

$$AUP = [OI_1/(AUP * UP_1)] + [OI_2/(AUP * UP_2)] + [OI_n/(AUP * UP_n)]$$

Price Weighted Averaging Method

This method places the greatest emphasis on the series that is closest to at-the-money. The closer the option strike is to at-the-money, the more weight is given to the implied value from the option. Conversely, the further out-of-the-money the strike is, the less weight is given to the implied value from the option. For example:

Strike Price Identifier	Strike	Underlying Price (UP)	Strike - UP	Volatility
Trade 1	2000	2250	250	20
Trade 2	The lowest strike for the strategy.	2250	150	22
Trade 3	2200	2250	50	24
Trade 4	2300	2250	50	26

$$Sum1 = \sum_{k=1}^n Strike_k - UP_k \text{ -----In other words, the sum of column 4.} = 500$$

$$Sum2 = \sum_{K=1}^n Sum1 - (Strike Price - Underlying Price) = (500 - 250) + (500 - 150) + (500 - 50) + (500 - 50) = 1500$$

$$\text{Price Weighted Average Implied Volatility} = \sum_{K=1}^n \left(\frac{Sum1 - Column4}{Sum2} \right) * \text{Volatility}$$

Therefore, Price Weighted Average Implied Volatility =

$$\left(\frac{500 - 250}{1500} * 20 \right) + \left(\frac{500 - 150}{1500} * 22 \right) + \left(\frac{500 - 50}{1500} * 24 \right) + \left(\frac{500 - 50}{1500} * 26 \right) =$$

$$3.33 + 5.13 + 7.2 + 7.8 = 23.46$$

This method is most useful for averaging Implied Volatilities. For averaging Implied Underlying Prices this makes less sense, since the proximity of a strike to the underlying price is in doubt.

Simple Average Method

This method applies no weighting.

Using Advanced Strategy Features

Click **Advanced** button.

Advanced Strategy Analysis

Select type of parameter and fill the value
Use ranges for dynamic analysis

Select base underlying contract: F.EPU2

Set 1 Set 2

Parameter	Contract	From	To
Date		06/13/12	07/13/12
Volatility	All		
Inter.Rate		0.75	2.13

Auto select ranges... Color&Style Color

Support ranges

Num. of curves: 4 Color: Color

Show curves Hide curves when closed Close

The advanced strategy feature allows you to set up various whatIf scenarios concerning 5 variables, Volatility, Interest Rate, Days till Expiration and Spread. Additionally, you can plot up to 8 curves using different values of the 5 variables.

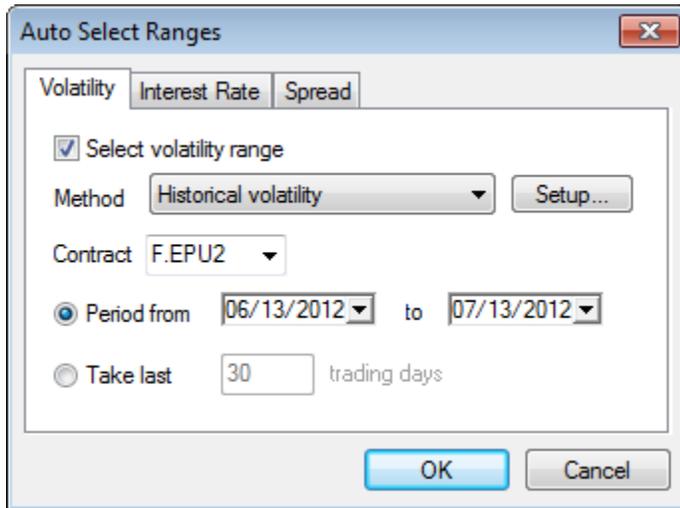
Selecting the Range Manually

COG offers users 2 ways to select range values, either manually or automatically.

To select range values manually:

1. Click on the **Support Ranges** checkbox.
2. Select the **From** or **To** box which corresponds to the variable whose range you are creating.
3. Input the desired from and to range values.

Selecting the Range Automatically

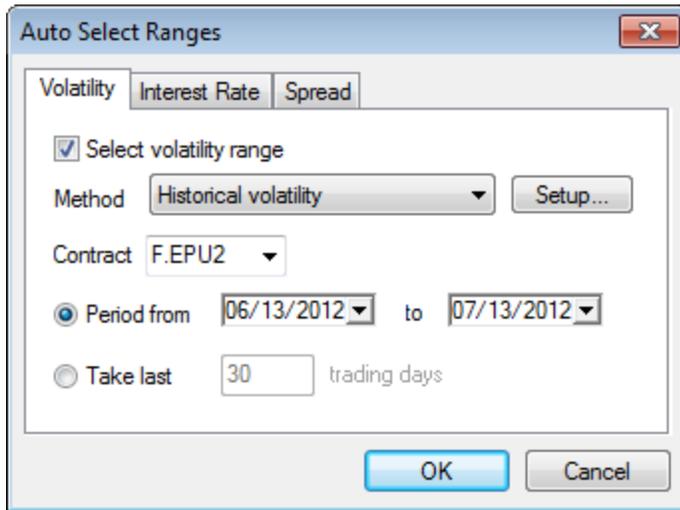


To select a range automatically:

1. Click on the **Support Ranges** checkbox.
2. Click on the **Auto Select Ranges** button.
3. This displays the **Auto Select Ranges** window.

The range of values used when users choose the **Select Range** checkbox depends on the period selected. However, the method of calculating the range is the same. The system calculates the range using the high and low values for the selected period, and distributes the curves evenly within the range.

Auto Selecting the Volatility Range

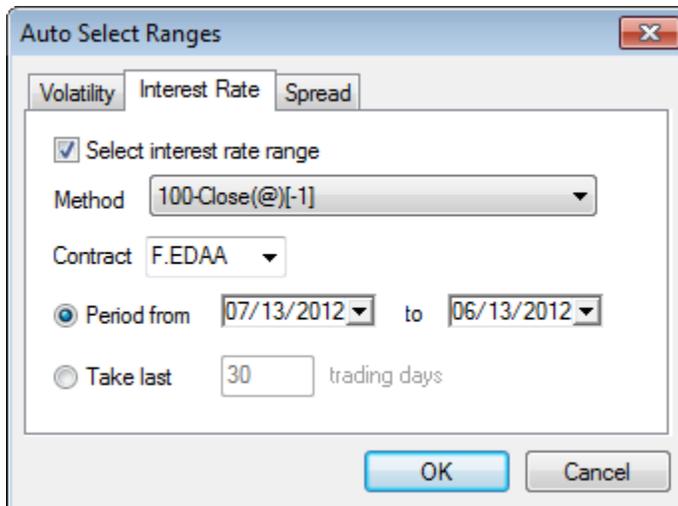


To automatically select the volatility range:

1. Select the **Volatility** tab.
 2. Select the Select volatility range checkbox.
 3. Select a volatility calculation method. Choices include **Historical Volatility** or **Implied Volatility**.
 4. Click on the Setup... button to change the parameters for the Historical or Implied volatility selection.
 5. Select a contract (only relevant for spread strategies).
 6. The contract selected here is the minuend, while the other contract, the subtrahend, is selected from the Advanced Strategy Analysis window. (Minuend – Subtrahend = Difference or spread value.)
 7. Select the Period from radio button.
 8. Click on the drop down list buttons associated with the Period from and to boxes to display a calendar
 9. Select the desired from and to dates using the calendar.
 10. Right click on the right arrow to move forward 1 year.
 11. Click on the right arrow to move forward 1 month.
 12. Right click on the left arrow to move backward 1 year.
 13. Click on the left arrow to move backward 1 month.
- Or
1. Click on the **Take last** radio button.
 2. Enter the number of immediately preceding trading days to be used for the volatility calculation.

3. Click on the **OK** button to apply the selections made in all three tabs and close the **Auto Select Ranges** window.

Auto Selecting the Interest Rate Range



To automatically select the Interest Rate range:

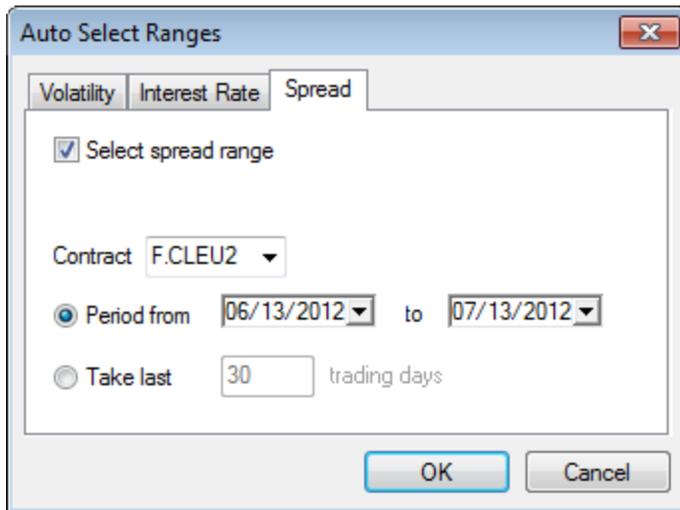
1. Select the **Select interest rate range** checkbox.
2. Select the interest rate calculation method. Currently the only method available is 100 - Close@ (-1).
3. Select the contract to be used. Currently the choices include EY (EuroYen), ZSD (Singapore Dollar Interest Rate) and TB (US Treasury Bill).
4. Select the **Period from** radio button.
5. Click on the drop down list buttons associated with the Period from and to boxes to display a calendar
6. Select the desired from and to dates using the calendar.
7. Right click on the right arrow to move forward 1 year.
8. Click on the right arrow to move forward 1 month.
9. Right click on the left arrow to move backward 1 year.
10. Click on the left arrow to move backward 1 month.

or

1. Click on the **Take last** radio button.
2. Enter the number of immediately preceding trading days are used for the volatility calculation.
3. Click on the **OK** button to apply the selections made in all three tabs and close the **Auto Select Ranges** window.

Note: The values for the interest rate range depend on the currency selected from the Interest Rate tab in the Preferences for the Strategy window.

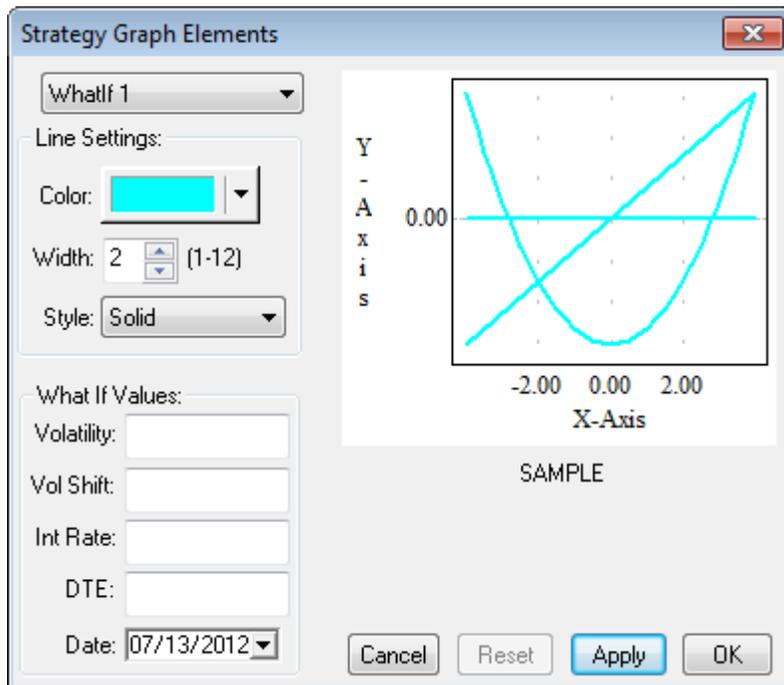
Auto Selecting the Spread Range



1. Click on the **Select spread range** checkbox.
 2. Select the desired contract from the drop-down list. This is the minuend. The subtrahend is selected from the **Advanced Strategy Analysis** window.
 3. Select the **Period from** radio button.
 4. Click on the drop down list buttons associated with the Period from and to boxes to display a calendar
 5. Select the desired from and to dates using the calendar.
 6. Right click on the right arrow to move forward 1 year.
 7. Click on the right arrow to move forward 1 month.
 8. Right click on the left arrow to move backward 1 year.
 9. Click on the left arrow to move backward 1 month.
- Or
1. Click on the **Take last** radio button.
 2. Enter the number of immediately preceding trading days to be used for the volatility calculation.
 3. Click on the **OK** button to apply the selections made in all three tabs and close the **Auto Select Ranges** window.

Note: The **Spread** tab is only active when a strategy utilizing different underlying futures contracts has been selected.

Options Strategy Color Windows



The Strategy Graph Elements window facilitates changing the Strategy graph color elements.

1. Click on the **Setup** button.
 2. Select **Change Graph** from the menu.
- Or
1. Click on the **Color box** in the **What If** tab.
 2. Select the element to be changed from the drop-down list.
 3. Select a color from the color palette.

This colors the **What If** boxes a range of the selected shade.

The individual **What If** lines can also be colored separately, rather than simply being a different shade of each other.

To do this:

1. Click on the color box corresponding to the desired **WhatIf** scenario
 2. Select a color from the color palette. This colors only the selected line with the designated color.
- Or
1. Right click within the **Strategy Graph** display.

Using the Strategy View Coloring Windows

The two coloring windows associated with **Options Strategy** are the **Select Strategy Colors** window and the **Strategy View Graph Elements** window.

Using the Select Strategy Colors window

The **Select...Colors** window allows users to change many of the on-screen display elements for the application currently displayed. The content of the Select...Colors window depends on the type of window that is active when the command is given to display the Select...Colors window. Besides providing access to the color elements for the active window, the Select...Colors window allows users to select colors for several system-wide elements.

Like all the other **Select...Colors** windows, the **Select Strategy Colors** window consists of three basic sections: **Color Element**, **Color Preview**, and **Apply to**.

- The **Color Element** section lists the elements of the particular window that can be colored separately and accesses the color palette, allowing the user to select a color for each element. The elements of a Strategy window that which can be colored separately include: the Text **and** Backgrounds **for the** Header, Enabled **and** Disabled Input **and** Enabled **and** Disabled Data.
- The **Apply to:** section allows the user to apply changes differently among the same types of windows. Specifically, within a Strategy window, changes can be applied to one of the following: **This Strategy Window Only**, **All Strategy Views On This Page**, **All Strategy Views on all Pages**. In addition to selecting one of those, users can also apply the changes to **All New Strategy Views**.
- The **Color Preview** section allows users to refine their color selections and to get a general idea how those changes look before they are actually applied.

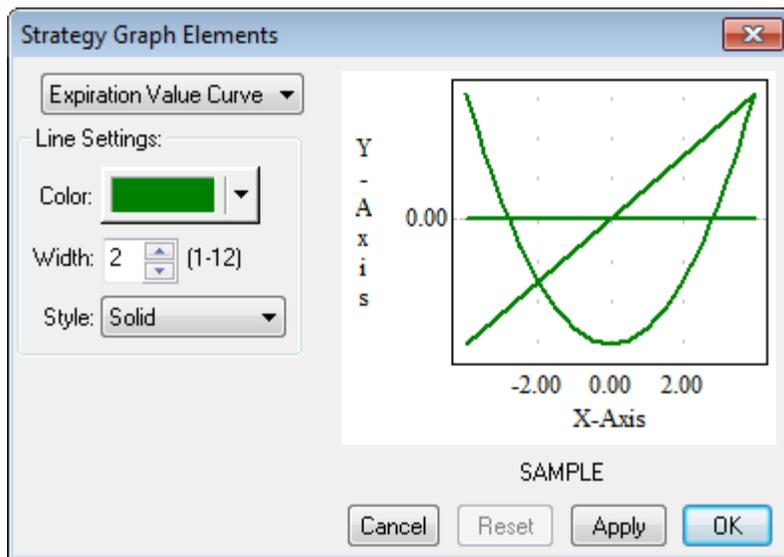
To change the color of a display element:

Click on the color box next to the name of the **Color Element**.

Or

1. Click on the color element in the **Color Preview** area. In either case, the floating color palette appears.
2. Select a color from the palette.
3. Select one of the choices from the **Apply to:** area.
4. Click on the **OK** button to effect the changes and close the Select...Colors window.

Using the Strategy View Graph Elements window



The Strategy View Graph Elements window allows users to select a color from the color palette and a thickness, ranging from 1-12 pixels, for the various elements of the Strategy View graphs.

To make changes to the Strategy View displays:

1. Click on the **Graph Elements** selector drop-down list button.
2. Select the element to be changed. Choices include: **Expiration Value Curve**, **Theoretical Value Curve**, **Standard Deviations**, **Underlying Price**, **Zero Line** and **What Ifs 1-4**. Additionally, users can select colors for any curves set up from the Advanced Strategy Analysis window.
3. Click on the drop down list button associated with **Line Color**. This displays the color palette.
4. Click on the desired color.
5. Select the desired line thickness. Choices range from 1-12 pixels.

Additionally, for the **What If Values** users can select a Volatility, Volatility shift, Interest Rate, Days till Expiration or a Calendar Date for each What If.

6. Click on the **OK** button to apply the changes and close the **Strategy View Graph Elements** window.