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## Creating 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.

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. 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**. 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.
5. Click the **XData** button.
6. 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.
7. Browse to find the data file to use in the formula.
8. Select the date format that you used in the data file.
9. 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.
10. Click **OK**.

## To create a data file

The file must be tab-delimited (.txt file) or space-delimited (.prn file).

The columns should contain this data:

Column A = Date, format MM/DD/YY, DD-MM-YY, or YYYYMMDD.

Column B = Time (for intraday charts), format HH:MM

Column C = Open

Column D = High

Column E = Low

Column F = Close

Data can be ascending or descending. COG will automatically assign OHLC to four columns of data following the time, HLC for three columns, HL for two columns, and C for one column of data.

You can also create a file using COG data by copying and pasting data from a Tabular Display chart.

## To create a spread QFormula

Instead of entering spread orders directly on the DOMTrader and Order Ticket, you can create spread QFormulas. QFormulas are especially helpful for complex spreads and to copy spread QFormulas and apply different settings to each instance.

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**. The new QFormula is displayed in the list, and the next QNumber in the series is automatically assigned to it. Click the drop down arrow to change the QNumber, or type a new number.
5. 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.
6. Alternatively, you can enter the symbols (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 spread formula, 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.
8. Click the **Trading Execution Patterns** button to set the [trading parameters](#). The **Set Up Trading Parameters** window opens.
9. Choose which legs to work, the order type, volume ratio, stacked orders parameters, and incomplete order behavior. Close the window.
10. Close the **Define User Formulas** window. Now, you're able to enter the QFormula number directly on the DOMTrader and Order Ticket.