

MarketView – Option Analytics Component

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MarketView Option Analytics

10/16/2007



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1. Introduction

GlobalView Software's MarketView (MV) solution has been expanded to offer basic Option Analytics functionality that allows the user to easily view all options for an underlying futures contract.

Included in this functionality is the ability to create and configure an Option Analytics QuoteView component that lets users select symbols in the same way they would for the Futures Day and Futures Globex components and also view the "Greek" values (Delta, Gamma, Theta, Rho and Vega), as well as Implied Volatility and Fair Value (theoretical value), to their selected symbol chain. The Option Analytics QuoteView component is read only.

The Option Analytics functionality uses the Black-Scholes options model and is a permissions based component. Only the MarketView application supports the Option Analytics functionality at this time.

The Option Analytics component can be configured to calculate Greek values using either real-time or historical volatility.

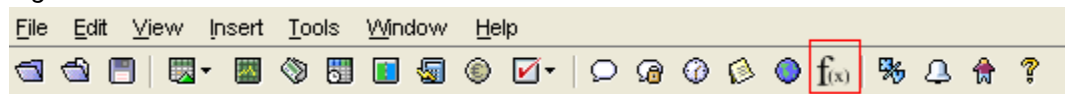
More robust options analytics functionality and application support may be added to future releases based on client demand.

2. Configuration Settings

2.1 Component Selection

The Option Analytics component is selected from the Insert menu item via the Option Analytics component icon or by selecting Ctrl-Alt-A:

Figure A.

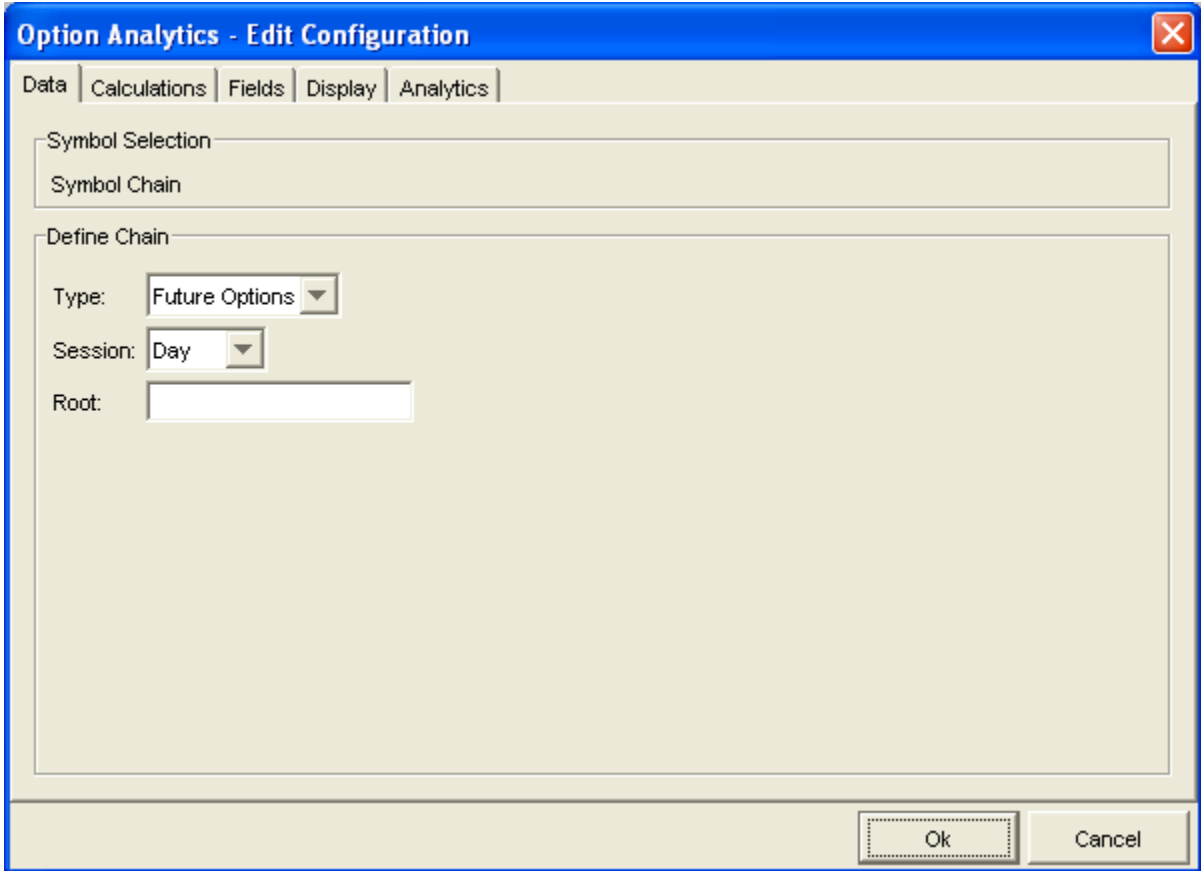


Selecting the **f(x)** option brings up the standard Futures Edit Configuration dialog, which provides all of the standard QuoteView functionality plus functionality related to configuring the Option Analytics settings. The Analytics tab is only available when the **f(x)** option is selected. See *Figures B and C*.

All the functionality on the Data, Calculations, Fields and Display tabs functions the same way for the Option Analytics component as it does for the other QuoteView related components.

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Figure B.



The image shows a software dialog box titled "Option Analytics - Edit Configuration". It features a blue title bar with a close button (X) in the top right corner. Below the title bar is a tabbed interface with five tabs: "Data", "Calculations", "Fields", "Display", and "Analytics". The "Analytics" tab is currently selected. The main area of the dialog is divided into two sections. The first section, "Symbol Selection", contains a text input field labeled "Symbol Chain". The second section, "Define Chain", contains three controls: a "Type:" dropdown menu set to "Future Options", a "Session:" dropdown menu set to "Day", and a "Root:" text input field. At the bottom right of the dialog, there are two buttons: "Ok" and "Cancel".

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2.2 Edit Configuration – Analytics Tab

The Analytics tab allows the user to configure specific display settings on the QuoteView – Option Analytics component. The Analytics tab only displays when a user has the Option Analytics permission assigned to him/her. See *Figure C*.

Figure C.

The screenshot shows a dialog box titled "Option Analytics - Edit Configuration" with a close button (X) in the top right corner. The dialog has several tabs: "Data", "Calculations", "Fields", "Display", "Data Source", and "Analytics" (which is currently selected). The "Analytics" tab contains the following settings:

- Day Count Convention:** A dropdown menu set to "365".
- Market Conditions:**
 - Interest (%): 0.0000
 - Dividend Yield (%): 0.0000
 - Realtime Volatility
 - Volatility (%): 20.0000
- Market Price:**
 - Volatility Market Price: Last
 - Underlying Market Price: Last
- At The Money:**
 - All Strikes
 - 12 (with up/down arrows)
 - Background: Yellow (with a color selection dropdown)

At the bottom right of the dialog are "Ok" and "Cancel" buttons.

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Day Count Convention

The Day Count Convention frame allows users to configure the number of days to apply to the calculation of their options data. A drop list supplies the following day count options:

- 250
- 252
- 360
- 365 – *default value*

Market Conditions

The Market Conditions frame contains a series of text boxes that provides users with the ability to configure the values that they want applied to the calculation output.

- Real-time Volatility is selected by default. Deselecting this option allows the user to apply a historical volatility setting.
- The frame contains the following text boxes:
 - Volatility (%)
 - Interest (%)
 - Dividend Yield (%)

Market Price

The Volatility Market Price and Underlying Market Price drop lists allow users to choose what field they want to use to calculate Volatility and the Greeks.

- Drop lists contain the following values:
 - Last
 - Bid
 - Ask
 - Historical Close
 - Settle
 - Midpoint

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At The Money

The All Strikes check box provides users the opportunity to display either all strike prices or configure an amount they want to see on either side of the At The Money price. For example, if a user enters “12,” then six strike prices display above and below the At The Money price in the grid.

- All Strikes
 - Deselected by default (selecting it will display all strike prices)
- Strike text box
 - Displays the number of strikes a user wants to view
 - Text box and spinner control
 - Default is 10
- Background
 - Allows users to select the color they want to use to highlight the At The Money row in the grid component

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2.2.1 Edit Configuration – Fields Tab

The Fields tab allows users to select specific fields they want to show as columns on the QuoteView – Option Analytics component for the symbol chain(s) selected. The Fields tab consists of Default, Standard and Advanced fields. The following items are the new fields for the Option Analytics component:

- Delta
- Gamma
- Theta
- Vega
- Rho
- VItty (Volatility)
- Fair Value (theoretical value)

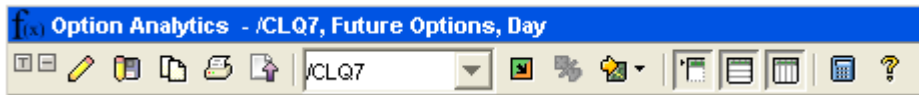
Users have the ability to add/remove or change the order of any of the Default, Standard and/or Advanced fields.

MarketView – Option Analytics Component

2.3 Futures – Option Analytics Component Layout

2.3.1 Toolbar

The Option Analytics component tool bar provides the same functionality as the existing Futures Access and Futures Globex component tool bars with the only addition being the Options Calculator icon.



Edit Configuration, Save as Default, Copy to Clip Board, Print, Tear Off, Replace Symbol, Chart/Table History and Grid Lines settings are all available from the toolbar.

In Line and User Defined Formulas are not available for the Option Analytics component.

Only one contract can be entered at a time.

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2.3.2 Calculator

The Option Analytics component tool bar includes an icon to launch an options calculator that allows the user to perform quick spot check calculations. See *Figure D*.

Results fields are read only and populate with values when the Calculate button is selected.

Figure D.

Inputs	
Underlying Price:	0.00
Strike Price:	0.00
Interest Rate(%):	0.00
Volatility(%):	0.00
Dividend Yield(%):	0.00
DayCount:	365
Today's Date:	09/13/2007
Expiration Date:	10/08/2007
Option Price:	0.00

Results		
	Call	Put
Delta:		
Gamma:		
Theta:		
Rho:		
Vega:		
Implied Volatility:		

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2.3.3 Grid Layout

Strike Price is the dividing column between the Put and Call data.
The At The Money row is automatically highlighted.

Option Analytics - CLV7, Future Options, Day																		
CLV7																		
Underlier	Last	Net Chg		Time														
CLV7	80.09			13:41:50 PM														
Calls									Strike	Puts								
Exp Date	Symbol Δ	Vlty	Rho	Vega	Theta	Gamma	Delta	Last	Strike	Last	Delta	Gamma	Theta	Vega	Rho	Vlty	Symbol Δ	Exp Date
9/17/07	-CLV7C7750	0.3533	0.0061	0.0055	-0.0183	0.0522	0.9657	2.79	77.50	0.30	-0.0342	0.0522	-0.0183	0.0055	-0.0002	0.4086	-CLV7P7750	9/17/07
9/17/07	-CLV7C7800	0.3479	0.0059	0.0098	-0.0329	0.0936	0.9288	2.37	78.00	0.28	-0.0711	0.0936	-0.0329	0.0098	-0.0004	0.3479	-CLV7P7800	9/17/07
9/17/07	-CLV7C7850	0.3445	0.0055	0.0155	-0.0518	0.1475	0.8675	1.98	78.50	0.39	-0.1324	0.1475	-0.0518	0.0155	-0.0008	0.3445	-CLV7P7850	9/17/07
9/17/07	-CLV7C7900	0.3445	0.0050	0.0216	-0.0720	0.2050	0.7778	1.63	79.00									
9/17/07	-CLV7C7950	0.3420	0.0042	0.0265	-0.0885	0.2518	0.6616	1.31	79.50	0.72	-0.3383	0.2518	-0.0885	0.0265	-0.0022	0.3420	-CLV7P7950	9/17/07
9/17/07	-CLV7C8000	0.3435	0.0034	0.0288	-0.0963	0.2740	0.5283	1.04	80.00	0.95	-0.4716	0.2740	-0.0963	0.0288	-0.0031	0.3435	-CLV7P8000	9/17/07
9/17/07	-CLV7C8050	0.3414	0.0025	0.0279	-0.0930	0.2647	0.3926	0.80	80.50	1.21	-0.6073	0.2647	-0.0930	0.0279	-0.0040	0.3414	-CLV7P8050	9/17/07
9/17/07	-CLV7C8100	0.3432	0.0017	0.0239	-0.0799	0.2275	0.2695	0.61	81.00									
9/17/07	-CLV7C8150	0.3425	0.0011	0.0183	-0.0612	0.1743	0.1701	0.45	81.50									
9/17/07	-CLV7C8200	0.3448	0.0006	0.0125	-0.0419	0.1194	0.0983	0.33	82.00									
9/17/07	-CLV7C8250	0.3430	0.0003	0.0077	-0.0257	0.0732	0.0519	0.23	82.50									

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2.4 Greek Calculation Definitions

2.4.1 Delta

Delta is a measure of the change in an options price resulting from a change in the underlying commodity. The value of delta should range from -100.00 to 0 for puts and 0 to 100 for calls.

2.4.2 Gamma

Gamma measures the rate of change of delta. Gamma is smallest for deep out of the money and deep in the money options. Gamma is highest when the option gets near the money.

2.4.3 Theta

Theta measures the rate of decline in the value of an option due to the passage of time. Theta can also be referred to as the time decay on the value of an option. If everything is held constant, then the option will lose value as time moves closer to the maturity of the option.

2.4.4 Vega

Vega represents the amount that the price of an option will change compared to a 1% change in Volatility.

2.4.5 Rho

Rho represents the rate at which the price of a derivative changes relative to a change in the risk free rate of interest. Rho measures the sensitivity of an option to a change in interest rate.

2.4.6 Volatility

Volatility is a statistical measure of the dispersion of returns for a given security or market index. Volatility can either be measured by using the standard deviation or variance between returns from that same security or market index. Commonly, the higher the volatility, the riskier the security.

<http://investopedia.com>