

Options Facility



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Options Facility

Introduction

The Options Facility refers to a portion of the MIM data warehouse that has been organized to allow specialized analysis of options data. This document outlines how to extract data from the Options Facility using the following two tools: the “Get Options” feature in the MIM Excel Add-in and the “Options Command Line” application.

Options Data Offerings

The data in the Options Facility can be divided into three distinct categories:

- Options Contracts
- Standardized At-The-Money Forwards
- Underlying Equities

LIM has over 6 years of US equity and index option history available including: a complete history of the individual options contracts, standardized at-the-money forwards, and a full compliment of options related information for the underlying equities.

The options contracts and standardized options are updated daily for pricing, premium, implied volatility, and sensitivities. The underlying equities have options summary data including: option volume totals, open interest totals, and implied volatility.

Tools for Extracting Options Data

There are two applications that have been developed to extract data from the Options Facility: the “Get Options” feature in the MIM Excel Add-in and a customized “Options Command Line” application.

The MIM API was enhanced to allow this integration of customized applications with options analysis. By using C API calls to `xmimGetRecordsOptions` our applications were developed to extract data from the Options Facility.

Using these tools, one can filter the options data by put/call, strike price, expiration date, and perform special handling for non-computable values. In addition, the options product suite extends the capability to unlimited possibilities for an options trader to develop and monitor trading methodologies.

Important Note for Options Contracts

The standardized at-the-money forwards and underlying equities can be researched using any of our suite of analysis tools: XMIM, MIMIC or the Excel Add-in. It is important to make the distinction that the Options Contracts are accessible using the following tools: the MIM Excel Add-in and the Options Command Line application.

Columns for Options Data

The following list outlines the columns available for use with options data:

- Date (values always returned)
- Expiration Date (values always returned)
- Put/Call (values always returned)
- Strike Price (values always returned)
- BidPrice
- OfferPrice
- LastTradeDate
- Volume
- OpenInterest
- ImpVol
- OptionDelta
- OptionGamma
- OptionVega
- OptionTheta

Each equity, as the underlying issue, will have some additional columns of options related data:

- CallVol
- PutVol
- TotalVol
- ImpVol: Note that this column is the average of the 30 put and 30 call in the standardized options.
- CallOI
- PutOI
- TotalOI

MIM Excel Add-in “Get Options”

Use the MIM Excel Add-in “Get Options” feature to access the special columns established for analyzing options data. This function takes the data that is entered on the spreadsheet and automatically populates the relation, column, date, expiration date, strike price and put/call fields in the program.

Working Example

Look at the option Gamma for IBM for dates ranging from 5/7/2002 to 6/12/2002 and expiration dates ranging from 5/02 to 6/02 with strike prices ranging from 50 to 70.

Step-By-Step Solution

Overview

In order for the software to automatically pick up the entries from the spreadsheet and fill in the dialog box, the user must fill out the spreadsheet in a specified order and click on the first relation cell entry before choosing **Get Options** from the MIM menu. Selecting the first relation cell entry on the spreadsheet, tells the program where the data entries begin on the spreadsheet. All the data entered will automatically populate the corresponding fields in the display box.

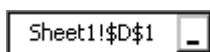
Note: The user may start entering data from any point on the spreadsheet but must follow the specified order from that point on.

Enter relation data on any row of the spreadsheet. On the next row enter the column data. The following row is reserved for the date fields in the first two columns, the expiration dates in the next two columns, the strike price range in the next two columns and the put/call/both option in the last column cell. The data in the spreadsheet must be aligned in a contiguous manner so that all the data will be selected. If this format is not followed the data will not populate the next dialog box correctly.

Note: The user has the option of entering data on any of the cells in the spreadsheet, not in a contiguous manner. After **Get Options** is selected from the MIM menu the dialog box will display. Instead of having the data automatically populate the fields in the display box, the user can select the individual cells in the spreadsheet to fill in each field of the display box.

The following is an example of how to select information in a cell on a spreadsheet to populate a field in the display box:

1. Select the bar next to the destination cell.



The dialog box will close and the Excel Worksheet opens.

2. Select the desired cell on the spreadsheet, then select the  icon to return to the dialog box.

The dialog will now contain the spreadsheet entry.

Spreadsheet Entries

The following outlines the process in detail. Follow along with this example to learn how to enter options data in a spreadsheet and have the entries automatically populate the query dialog box.



An older version of the Options Facility allowed the user to enter as many relations as they wanted, but because of the new formatting functionality in the latest version, the user can only enter and view data for one relation at a time.

1. Enter the symbol names in the first row. Type `IBM_Options` in cell A:1.
2. Next, enter the column data. Type `OptionGamma` in cell A:2. If you wanted more than one column, then you would enter the next column data in cell "B:2", then "C:3" etc.
3. On the next row, enter the dates, expiration dates, strike price ranges and the put/call options. Enter `p` or `P` for Put and `c` or `C` for Call. If left blank the default is to display both Puts and Calls. The following graphic details the entries.



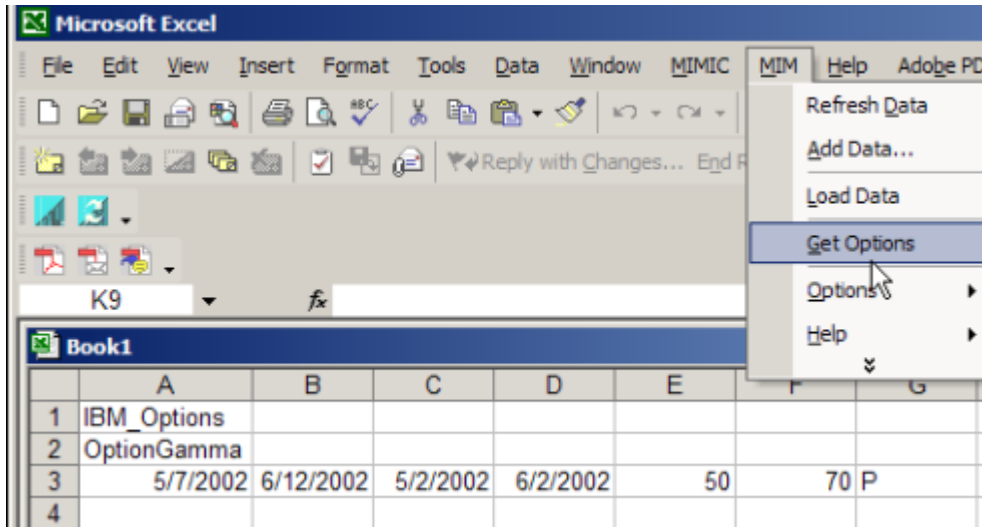
In Excel, sometimes the cells pickup the formatting of a previous cell entry. The Strike Price entries may get reformatted as Date entries. To fix this, right-click on the **Strike Price** cells and select **Format Cells..**, then change the formatting to **General**.

	A	B	C	D	E	F	G
1	IBM_Options						
2	OptionGamma						
3	5/7/2002	6/12/2002	5/2/2002	6/2/2002	50	70	P
4							

From Date To Date Expiration From Date Expiration To Date Strike Price From Strike Price To Put/Call or Both

4. Select cell A:1 then select **Get Options** from the **MIM** menu.

You must select the first relation cell entry to designate where the program will start pulling the data from the spreadsheet.



The following screen displays:

The screenshot shows a dialog box titled "Get Option Data from XMIM Server". It contains the following fields and controls:

- Source Ranges:**
 - Relation Name cells: \$A\$1
 - Column Name cells: \$A\$2
- Destination Range:**
 - Target cell: \$A\$4
- Put / Call:**
 - Both
 - Puts
 - Calls
- Data Format:**
 - Unformatted
 - Formatted
- Non-Computable Values:**
 - Skip Non-Computable Values (-99.99)
- Options:**
 - Decimal Places: 5
- Date Range:**
 - From: mm/dd/yyyy: \$A\$3
 - To: mm/dd/yyyy: \$B\$3
- Expiration Date Range:**
 - From: mm/dd/yyyy: \$C\$3
 - To: mm/dd/yyyy: \$D\$3
- Strike Price Range:**
 - From: \$E\$3
 - To: \$F\$3
- Missing Data Handling:**
 - Fill Option: NaN
 - Skip all-NaN records

Buttons: OK, Cancel

- The fields will automatically populate the fields. For **Source Ranges**, cells **A:1** will display for the **Relation Name** cells. Cells **A:2** will display for the **Column Name** cells.
- For **Destination Range**, the data will populate in cell **A:4**.
- For **Put/Call**, the default is for the **Both** box to be checked. Checking the **Both** box will list both Puts and Calls. On our spreadsheet, we entered a **P** for Put so the **Put** box is automatically checked.
- For **Data Format**, the default is for **Unformatted** to be checked. If you want to format the output so that the data is listed in a column format check **Formatted**. For the following example keep the default **Unformatted** option. At the end of the example we will show how the **Formatted** data will display.
- For **Non-Computable Values**, select this check box so that **-99.99 non-computable values** will not display on the spreadsheet. For our example, check the **Skip all Non-Computable Values** check box. By default, this box is not checked.



The **non-computable value (-99.99)** means that the value is trading outside its intrinsic value and therefore is not meaningful or applicable.

10. The **Date Range** field will automatically populate with a date range from cell **A:3** for the **From** box and **B:3** for the **To** box. The date range fields are optional. If a **Date Range** is not entered, all the dates for the symbol will be queried. The **Date Range** must be entered in the following format: **mm/dd/yyyy** .
11. The **Expiration Date Range** field will automatically populate with a date range from cell **C:3** for the **From** box and **D:3** for the **To** box. The expiration date range fields are optional. If a **Expiration Date Range** is not entered, all the dates for the symbol will be queried. The **Expiration Date Range** may be entered as **mm/yy** or **mm/dd/yyyy**. If **mm/yy** is entered, the cell will display as **mm/01/yyyy**.
12. The **Strike Price Range** field will automatically populate with a date range from cell **E:3** for the **From** box and **F:3** for the **To** box. The **Strike Price Range** fields are optional.
13. Select a **Fill Option** from the pull-down menu. A default **NaN** is filled if there is no data point available for a given date. Use the pull-down menu to have the data filled in other ways (e.g., Filled Forward or Backward, Linear, Geometric or Logarithmic interpolated values). If **Skip all-NaN records** is selected then all the NaN values will not display.
14. Select **OK** to continue.

Results

The following shows a portion of the results of the query with the **Unformatted** option selected:

	A	B	C	D	E	F	G
1	IBM Options						
2	OptionGamma						
3	5/7/2002	6/12/2002	5/2/2002	6/2/2002	50	70	P
4	Date	Strike Date	Put/Call	StrikePrice	OptionGamma		
5	5/7/2002	5/18/2002	Put	55	0.00332		
6	5/7/2002	5/18/2002	Put	60	0.00609		
7	5/8/2002	5/18/2002	Put	60	0.00312		
8	5/7/2002	5/18/2002	Put	65	0.01346		
9	5/8/2002	5/18/2002	Put	65	0.0049		
10	5/9/2002	5/18/2002	Put	65	0.00635		
11	5/7/2002	5/18/2002	Put	70	0.03454		
12	5/8/2002	5/18/2002	Put	70	0.00861		
13	5/9/2002	5/18/2002	Put	70	0.0158		

For the next example, a few more greeks were added to the list: OptionDelta, OptionTheta and OptionVega. The entries were started on cell B:1 to show that you can start your entries anywhere on the spreadsheet. This

time just the start date **5/7/2002** was entered. All the data will display back to 5/7/2002 and both Puts and Calls will be listed.

	A	B	C	D	E
1		IBM Options			
2		OptionGamma	OptionDelta	OptionTheta	OptionVega
3		5/2/2002			
4					

Put your cursor back on the **IBM_Options** cell, cell **B:1** and select **MIM>Get Options** from the **MIM** menu. Remember that you can enter data starting at any point on the spreadsheet and that you have to select the starting cell before you choose **Get Options**. The following show how the data displays when the **Formatted** option is selected.

Get Option Data from XMIM Server

Source Ranges
 Relation Name cells: \$B\$1
 Column Name cells: \$B\$2:\$E\$2

Destination Range
 Target cell: \$B\$4:\$E\$4

Put / Call
 Both Puts Calls

Data Format
 Unformatted Formatted

Non-Computable Values
 Skip all Non-Computable vals (-99.99)

Options
 Decimal Places: 5

Date Range
 From: mm/dd/yyyy: \$B\$3
 To: mm/dd/yyyy: \$C\$3

Expiration Date Range
 From: mm/dd/yyyy: \$D\$3
 To: mm/dd/yyyy: \$E\$3

Strike Price Range
 From: \$F\$3
 To: \$G\$3

Missing Data Handling
 Fill Option: NaN
 Skip all-NaN records

OK Cancel



Note that under **Data Format**, the **Formatted** option is checked:

Now for the results:

	A	B	C	D	E	F	G	H	I
1		IBM Options							
2		OptionGamma	OptionDelta	OptionTheta	OptionVega				
3		5/2/2002							
4		Quote	Expiration	Underlyer	Option Type				
5		5/2/2002	5/17/2002	83.86	Call	85	90	95	100
6					Gamma	0.06995	0.06995	0.06995	0.06995
7					Delta	0.42777	0.42777	0.42777	0.42777
8					Theta	-27.5406	-27.5406	-27.5406	-27.5406
9					Vega	6.66092	6.66092	6.66092	6.66092

The Quote date, Expiration date and Underlying prices are listed as well as both Puts and Calls and each Option type.

Options Command Line Application

XMIM_GET_OPTIONS

The program XMIM_GET_OPTIONS uses `XmimVaGetOptionsRecords` to extract options data from a MIM database.

For more detailed information, see the [xmim_get_options Utility](#) chapter in the *MIM Data and Development Guide*.

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