Your proprietary applications are only as good as the data that drives them! Using Bloomberg’s API (Application Program Interface), you can feed Bloomberg data, the industry standard, into your applications via Microsoft Excel. Then using Excel functionality, you can customize the data to fit your individual needs to make the best investment decisions!

The above spreadsheet is a fixed income example which links Bloomberg’s descriptive data and analytics to calculate price, yield or a variety of spreads given a user’s input price, yield or particular spread to an interpolated point on the treasury curve.

Bloomberg’s API (Application Program Interface) allows you to:
- **Access over 7000 fields of data from the vast Bloomberg database.**
- **Create custom applications within Microsoft Excel or our own proprietary models.**
- **Run over 20 Bloomberg Analytical Calculations within your custom application thereby getting the values you would expect to see from common Bloomberg functions such as Yield Analysis (YA), Option Adjusted Spread (OAS1) and historical fundamentals (FA) for a portfolio of securities.**

So you can make the most appropriate buy and sell decisions to maximize profits and returns.

**Contents**
1. Excel Add-in Tools – Table Wizard, History Wizard, Intra-day Wizard and Bulk Wizard so you can create custom tables of information
2. Formula writing – BLP, BLPH, BLPSH, BLPI, and BLPB statements
3. Calculation Overrides or the Bloomberg Analytical Calculation formulas
The API Basics

Step 1 - Locate the DDE Add-In Toolbar

If you cannot locate this check your DDE Add-In. First Bloomberg should appear between Data and Window on the Excel toolbar. If not Click on Tools/Add-Ins and find the BLPMAIN.XLA. For more information on downloading the software and understanding the components of the API and communications type API<GO> or BBXL<GO>.

Step 2 - Creating a Basic Table using the Table Wizard

Click on the Table Wizard Icon

a) - Step 1 of the Wizard - Enter a security followed by clicking on the appropriate yellow sector key or the yellow key on your keyboard. Then click Add. Repeat for additional securities. To search for securities use the “Binoculars” or FIND icon. Then Click Next>.

b) - Step 2 of the Wizard - Click on a folder, and select a field. Continue selecting other fields. If you cannot find a particular field, click the FIND icon to carry out a search. You can right click your mouse on the field for a Definition. When finished Click Next>.

c) - Step3 of the Wizard - Specify the orientation of the Table and the Link type. Click Finish.

Your Table will appear in Excel.

Step 3 - Editing the Table

Click on the “home cell” (first cell above the first security and to the left of the first field) - the blank cell in the upper left corner of the table (A1 in above example). Now click back on the Table Wizard Icon. Make your edits then click Finish.
Step 4 - Edit Table Without Using the Table Wizard

a.) To Add Securities - Type additional security id’s and yellow sector key beneath the original securities. Then click on “home cell” and then click on the Fill Range icon on the DDE toolbar.

b.) To Add Data Fields - In the above example you will add data fields to the right of the original field i.e. D1. To find the appropriate field mnemonics click on the Field Search icon .

You will get the a dialogue box where you enter the field name and run a search. You can select the type of field to search for (Monitoring, Snapshot, Historical, or Bulk fields). The Yellow keys allows you to search for fields for a market sector or sectors. Select the field(s) and hit APPLY. To fill the new data - Click on the “home cell” and click the Fill Range icon .

The New Field Search allows you to work in excel while it remains open.

Step 5 - Turn On/Off the DDE Link

You may click on the Lightning bolt on the DDE toolbar to enable/disable the DDE link. Click on . A dialogue box will appear and instruct you to either enable or disable the real-time updates.

Data Messages:

In some instances data may not be available, a field may not be applicable for a security, or the formula may have been written improperly. Excel will return data messages i.e. #N/A or #REF in the fields for which you are requesting data. For a list of common messages and their meanings please type API<GO> or BBXL<GO> and select Explaining Excel’s error messages.

May 12, 2003
**Step 6 – The History Wizard**

The History Wizard allows you to retrieve historical data on a range of fields for a list of securities.

- **a) Locate the History Wizard Icon on the DDE Add In Toolbar**
  The History Wizard will appear.

- **b) Enter securities** – Enter the security identifier, click on the appropriate yellow key or use your keyboard and ADD. Repeat for additional securities then hit Next>.

- **c) Select Fields** – Choose a Folder and double click to reveal the contents. Select the field(s) of choice and hit Next.

- **d) Select a time period** – You can select Specific Star/End Dates, Time Periods, or a combination of both. Notice that using the options labeled as CURRENT (e.g. Fixed Time Period From Current) will continue to update the historical values as time goes forward. Then hit Next>.

- **e) Enter a range** – Dependent of your prior choice you will be able to indicate the period for the download or a Star and/or End date. Then hit Next>.

- **f) Customize your display** – You can indicate the Periodicity for your data, the Time Order, Currency, and if you would like to include Non-Trading Days or all Calendar days, as well as, a Filler. Then hit Next>.

- **g) Select display options** – You can indicate if you would like your data to be displayed Horizontally or Vertically. By selecting the DISPLAY CHART option a new page will be available which will allow you to create a chart. Otherwise you can select FINISH.
**h) Chart Set Up** – If you selected Display chart you will be able to select Next> and view the Chart Set Up page. You can give a Title to your chart, determine its location, and select or deselect those securities and field(s) that you would like to graph. Then hit Finish.

**The Result** – The data will be displayed along with the graph. Notice that the Chart is fully customizable by right clicking your mouse.

**Other DDE Tools:** There are two other Wizards on the DDE Toolbar that operate similar to the Table and History Wizard. The Intraday History Wizard allows you to download intra-day intervals. The Bulk Wizard allows you to download “bulk” information i.e. index members, bulk description, cash-flows, etc.

**Step 7 - BLP () Statements**

You may also fill data into your spreadsheet by writing simple formulas or BLP Statements that write directly to the DDE server. The statements allow flexibility in the data layout and the customization of your own proprietary formulas.

The syntax is as follows:

\[=\text{blp(security,fields)}\]

In the example, Cell C2 can be populated by writing any combination of the following:

- \[=\text{blp(B2,C1)}\]
- \[=\text{blp(“IBM Equity”,“Px Last”)}\]
- \[=\text{blp(B2,“Px Last”)}\]

Notice the formula in the formula bar. The DDE link is created once you type the formula and hit <GO>.

**Tips**:
- To concatenate the security id with the yellow sector key description, i.e. cell B2 in the example: the formula is \[=\text{A2” Equity”} \]
- Using Cusips as ID’s: the concatenation of “ Corp Cusip” will search all yellow sector keys.
- To anchor a cell or series of cells in a formula: Hit your F4 key after the cell reference(s).

See API<GO> or BBXL<GO> for an on-line tutorial.
Writing historical BLP Statements allows you to easily access historical data for a list of securities without having to type the list into the History Wizard. You can specify either one date in history using the \texttt{BLPSH} statement or enter a period of time using the \texttt{BLPH} statement. This data can roll forward to the current day and update in your spreadsheet daily!

You must be running \textsc{BBComm v 9/14/99} or later as well as the \textsc{DDE v 8/31/99} or later.

\textbf{BLPSH Function} or the \texttt{B}loomberg \texttt{L.P.} \texttt{S}ingle point in \texttt{H}istory allows you to access a single historical point. The following is the syntax:

\[\texttt{=BLPSH(security, field(s), date, non-trading days*, filler*,[Omit], Currency*)}\]

- **Security** – any valid Bloomberg security identifier.
- **Fields** – the mnemonic representation of fields that Bloomberg provides historical data.
- **Date** – a current or historical date format applicable to Excel. E.g. mm/dd/yy, or dd/mm/yy etc.
- **Non-trading days** – \texttt{N} – show weekly days (Mon-Fri), \texttt{C} – show all calendar days.
- **Filler** – \texttt{N} – show #N/A NA for non-trading days, \texttt{C} – show the previous trading day’s value (default).
- **Omit** – not currently used. Please skip this parameter.
- **Currency** – enter a currency of choice. It defaults to the local currency for the security.

*Optional Parameters

In any statement, the parameters can either be a cell reference (ex. A1) or a string e.g. “IBM Equity”.

\begin{tabular}{|c|c|c|}
\hline
A & B & C \\
\hline
1 & MSFT Equity & 10/18/2001 \\
2 & Last Price & Volume \\
3 & 58.06 & 34229200 \\
\hline
\end{tabular}

The Security e.g Dell Equity, could have been written in the formula in cell A3, for example:

\[\texttt{=BLPSH(“Dell Equity”",A2:B2,B1)}\]

Or the data fields could be written as a string, e.g.

\[\texttt{=BLPSH(A1,”LAST PRICE,VOLUME”,B1)}\]

\textbf{BLPH Function} or the \texttt{B}loomberg \texttt{L.P.} \texttt{H}istory function allows you to access multiple historical points. The following is the syntax:

\[\texttt{=BLPH(security, field(s), start date, end date*, number of points*, reverse order*, periodicity*, non-trading days*, filler*, show dates*, rows, columns, direction*,show yield*, currency*)}\]

- **Security** – any valid Bloomberg security identifier.
- **Fields** – the mnemonic representation of fields that Bloomberg provides historical data.
- **Start Date** – a current or historical date format applicable to Excel. E.g. mm/dd/yy, or dd/mm/yy etc.
- **End Date** – a date that’s equal, or later than the start date and cannot be in the future.
- **Number of Points** – the number of periods to download from current (i.e. Quarters, Years... See Periodicity for selections).
- **Reverse order** – a Boolean value where TRUE represents a reversal in chronological order (default is FALSE).
- **Periodicity** – \texttt{D} – daily, \texttt{W} – weekly, \texttt{M} – monthly, \texttt{Q} – quarterly, or \texttt{Y} – yearly.
- **Non-trading days** – \texttt{N} – show weekly days (Mon-Fri), \texttt{C} – show all calendar days.
- **Filler** – \texttt{N} – show #N/A NA for non-trading days, \texttt{C} – show the previous trading day’s value (default).
- **Show Dates** – a Boolean value where FALSE represents no dates shown (default is TRUE – show dates).
- **Rows** – skip this parameter (mark with comma if using additional parameters).
- **Columns** – skip this parameter (mark with comma if using additional parameters).
- **Direction** – a Boolean value where TRUE displays the values HORIZONTALLY while FALSE displays the data Vertically (defaults to FALSE). Selecting the FIELDS vertically will download the data Horizontally (See sample on bottom of next page).
- **Show Yield** – displays the Yield or Price for a fixed income security historically. Defaults to “P” for Price.
- **Currency** – enter a currency of choice. It defaults to the local currency for the security.

*Optional Parameters

5/12/2003
If you select some but not all parameters you must mark those you skipped over with a comma ",". For instance if you want PX LAST on MSFT US Equity from 10/15/00 through 10/15/01 in Reverse chronological order, Weekdays only then you would write the following statement:

To get the historical data up to the current date, omit the end date as indicated below.

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSFT Equity</td>
<td>10/15/1999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Px Last</td>
<td>Volume</td>
<td></td>
</tr>
<tr>
<td>10/15/1999</td>
<td>88.0625</td>
<td>36894000</td>
<td></td>
</tr>
<tr>
<td>10/18/1999</td>
<td>87.875</td>
<td>37656400</td>
<td></td>
</tr>
<tr>
<td>10/19/1999</td>
<td>86.3125</td>
<td>34972800</td>
<td></td>
</tr>
<tr>
<td>10/20/1999</td>
<td>92.25</td>
<td>44045000</td>
<td></td>
</tr>
<tr>
<td>10/21/1999</td>
<td>93.0625</td>
<td>30400600</td>
<td></td>
</tr>
</tbody>
</table>

The BLPH function will account for unused parameters at the end of the statement and also add 2 additional parameters that will account for the number of rows and columns.

For a HORIZONTAL download you can use the following statement:

`=BLPH(“MSFT Equity”,”PX LAST,VOLUME”,“10/15/00”,,,,,,,,,TRUE,”USD”)`

Following the two last parameters (columns and rows) you can use TRUE or FALSE to toggle the layout of data in the cells between vertical and horizontal.

Or you can place your fields down the column and reference them vertically in your formula.

When referencing the fields in a worksheet arranged vertically, e.g A4:A6, the output data will be displayed horizontally along the rows. The opposite also applies. When referencing fields arranged horizontally, e.g. B2:C2, the output will be displayed vertically.

For more detailed and up to date instructions please refer to API<GO> or BBXL<GO> Worksheet Functions–Bypassing wizards.

5/12/2003
Data Messages: If data is unable to populate in the appropriate cells you will see data messages. Below is a list of common data messages and their meanings:

#NA Start: Start date is not a date, or in the future.  #NA Period: Periodicity value is not valid.
#NA End: End date is not a date, or before start.   #NA ShNTrd: Non-trading days is not valid
#NA Points: Points is not numeric.   #NA NtrdVal: Filler is not valid.
#NA RevOrd: Reverse order is not Boolean.  #NA History: No history is available.

#NA Data Ctrl: Data control registration problem – Contact Bloomberg Service.

For a complete list of Data Messages please refer to BBXL<GO> Explaining Excel’s error messages.

Available Fields: Currently there are 1200+ historical fields available. Below is a list of the fields most commonly used with the with the new history functions.

Pricing Fields:

**Static:**
- PX_BID
- PX_MID
- PX_OPEN
- PX_HIGH
- PX_ASK
- PX_LOW
- PX_LAST
- PX_VOLUME
- YEST_LAST_TRADE
- FUND_NET_ASSET_VAL
- CHG_NET_1D
- CHG_NET_2D
- CHG_NET_5D
- EQY_TURNOVER
- VOLUME_TOTAL_CALL
- VOLUME_TOTAL_PUT

**Realtime:**
- BID
- MID
- ASK
- LAST_PRICE
- OPEN
- HIGH
- LOW
- VOLUME
- YEST_LAST_TRADE

Fundamental Fields:
- PE_RATIO
- PX_TO_BOOK_RATIO
- PX_TO_CASH_FLOW
- EQY_WEIGHTED_AVG_PX
- EQY_DVD_YLD_12M_NET

Technical Indicators:
- MOV_AVG_200D
- MOV_AVG_30D
- MOV_AVG_60D
- RSI_30D
- RSI_14D
- RSI_9D
- RSI_3D

Risk Measures:
- HIST_CALL_IMP_VOL
- HIST_PUT_IMP_VOL

Yield Fields:

**Static:**
- YLD_YTM_BID
- YLD_YTM_MID
- YLD_YTM_ASK
- YLD_CNV_BID
- YLD_CNV_MID
- YLD_CNV_ASK
- YLD_ANNUAL_BID
- YLD_ANNUAL_MID
- YLD_ANNUAL_ASK
- YLD_CUR_BID
- YLD_CUR_MID
- YLD_CUR_ASK
- YLD_SEMI_ANNUAL_BID
- YLD_SEMI_ANNUAL_MID
- YLD_SEMI_ANNUAL_ASK
- YLD_YTC_BID
- YLD_YTC_MID
- YLD_YTC_ASK
- OAS_SPREAD_BID

**Realtime:**
- BID_YIELD
- ASK_YIELD

Analytics-Risk Measures:
- CNVX_OAS_BID
- OAS_VOL_BID

For more detailed instructions on using the Bloomberg API type API<GO> or BBXL<GO>. FOR ASSISTANCE HIT THE <HELP> KEY TWICE.
INTRA-DAY BLP STATEMENTS

Writing intra-day BLP Statements allows you to easily access up to 50 days of intra-day data for a list of securities. The data, which you can specify as Bid, Ask, or Trade, is packaged in bars, which can be easily customized so you get the data you want. The flexible formulas in Excel allow you to easily modify the data and parameters for a more customized analysis.

You must be running DDE 3.0 dated 2/8/00 or later as well as Excel 8 (Office 97) or later.

BLPI Function or the Bloomberg L.P. Intra-day function allows you to access intra-day data for a specified side of the market. There are three base formulas each with a different beginning syntax and all having the same parameters. They are as follows:

=BLPIA() For Asks
=BLPIB() For Bids
=BLPIT() For Trades

The following are the parameters:

(security, fields, start date&time, end date&time*, bar size*, reverse order*, show dates&time*, rows, columns, direction*, filler*)

Security – any valid Bloomberg security identifier.
Fields – the mnemonic representation of valid fields: they list is as follows:

OPEN, HIGH, LOW, LAST_PRICE, NUMBER_TICKS, VOLUME

Start Date&Time – a current or historical date (up to 50 days ago) along with the time. e.g mm/dd/yy hh:mm
End Date&Time* – a current or historical date (up to 50 days ago) along with the time. e.g mm/dd/yy hh:mm
Bar size* – a numerical value designating your interval from 1 minute to 1,440 (minutes in 24 hours).
Reverse order* – a Boolean value where TRUE represents a reversal in chronological order (default is FALSE).
Show Dates&Time* – a Boolean value where FALSE represents no dates shown (default is TRUE – show dates).
Rows - Skip this parameter (mark with comma if using additional parameters).
Columns - Skip this parameter (mark with comma if using additional parameters).
Direction* - a Boolean value where TRUE displays the values HORIZONTALLY while FALSE displays the data Vertically (defaults to FALSE). Selecting the FIELDS vertically will download the data Horizontally (See sample on bottom of next page).
Filler* – N – show #N/A NA for intervals with no values, C – show the previous interval value (default).

*Optional Parameters

Example:
If you want today’s closing traded volumes for IBM in 2 minute intervals from 11:30 am to 1:00 pm then you would write the following statement (assuming today is 11/20/01):

=BLPIT(“IBM US Equity”, “VOLUME”, “11/20/01 11:30”, “11/20/01 13:00”, 2)

- If you select some but not all parameters you must mark those you skipped over with a comma “,”.
- You do not need to account for unused parameters at the end of the statement.
- To get the historical data up to the current date, omit the end date.
- The Date parameters can be entered as either dd/mm/yy or mm/dd/yy. The Time parameters can be in either am or pm so long as it is specified i.e. 1:00 pm or in 24 hours.
The parameters can either be a cell reference (ex. A1) or a string e.g. ("IBM US Equity").

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6/10/2002 10:00</td>
<td>6/10/2002 14:00</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>IBM Equity</td>
<td>Last Price</td>
<td>Volume</td>
</tr>
<tr>
<td>3</td>
<td>6/10/2002 10:00</td>
<td>77.7</td>
<td>122700</td>
</tr>
<tr>
<td>4</td>
<td>6/10/2002 10:05</td>
<td>77.68</td>
<td>219300</td>
</tr>
<tr>
<td>5</td>
<td>6/10/2002 10:10</td>
<td>78.02</td>
<td>124300</td>
</tr>
<tr>
<td>6</td>
<td>6/10/2002 10:15</td>
<td>78.37</td>
<td>134500</td>
</tr>
<tr>
<td>7</td>
<td>6/10/2002 10:20</td>
<td>78.29</td>
<td>87900</td>
</tr>
</tbody>
</table>

In the example, we used all cell references in the formula. The parameters could have been written in the formula as a string. For instance we can write the fields directly in the formula:

```excel
=blpit(A1,"last price,volume",D1,E1,5,,,,,,"N")
```

For a Horizontal download we can select the fields vertically or use TRUE as the 10th parameter for example:

```excel
=blpia(A1,"Last Price,Volume",B1,C1,5,,,,,,TRUE)
```

**Data Messages:** If data is unable to populate in the appropriate cells you will see data messages. Below is a list of common data messages and their meanings:

- **#NA Start:** Start date is not a date, or in the future.
- **#NA RevOrd:** Reverse order is not Boolean
- **#NA End:** End date is not a date, or before start.
- **#NA XL Vers:** Excel version is too old.
- **#NA Points:** # Points is not numeric.
- **#NA Data Ctrl:** Data control registration problem – Contact Bloomberg Service.

For a complete list of Data Messages please refer to BBXL<GO> Explaining Excel's error messages.

For more detailed instructions on using the Bloomberg API type API <GO> or BBXL<GO>. FOR ASSISTANCE HIT THE <HELP> KEY TWICE.
Writing bulk data BLP Statements allows you to easily access data that is bulk in nature, for a list of securities without having to type the list into the Bulk Wizard. The flexible formulas allow you to easily and quickly modify the data and parameters for a more customized analysis.

You must be running DDE v3.0 dated 1/07/01 or later.

**BLPB Function** or the Bloomberg L.P. Bulk function allows you to access bulk data on securities. The following is the syntax:

`=BLPB(security, field)`

**Example:**
If you want the company description for JDSU you would write the following statement:

`=BLPB("JDSU US Equity","CIE DES BULK")`

The parameters can either be a cell reference e.g. A1 or a string, e.g. "JDSU US Equity".

**Data Fields:** The data fields available for bulk information can be found using the Field Search Tool in the DDE Toolbar. A list is also available on the Bloomberg DOCS system. On the Bloomberg screen type `DOCS BULK FIELDS AVAILABLE <GO>` and download the document.

The field "mnemonic" is listed on the left. Locate a fields and select it. The hit APPLY. You can continue to search for additional fields.

**Data Messages:** If data is unable to populate in the appropriate cells you will see data messages. Below is a list of common data messages and their meanings:

- **#NA MultiSecs:** More than one security was selected.
- **#NA Fld:** Field mnemonic is invalid.
- **#NA MultiFlds:** More than one field was selected.

For additional instructions on using the Bloomberg API type API <GO> or BBXL<GO>. FOR ASSISTANCE HIT THE <HELP> KEY TWICE.
API Calculation Overrides

Not only can you access Bloomberg data, the industry standard, but also many Bloomberg calculations are accessible in your own applications! In an Excel environment you can analyze multiple securities with Bloomberg Analytics by writing BLP Statements, which we call Calculation Overrides.

Note: This description assumes a basic knowledge of the Bloomberg API. Knowledge of the Bloomberg Add-In for Excel is sufficient.

The Bloomberg Calculation Override Feature allows you to study and analyze the relationship between two variables that have a relationship. It is possible to override or assign a value for one of the variables and determine the value of the other.

The syntax for the calculation override formula is:

=BLP (security, fields, input area)

Security – any valid Bloomberg security identifier.
Fields – the mnemonic representation of fields that have a relationship or Bloomberg regards as overridable.
Input area – empty cells (same number as fields) that will host the override values.

Below is an example of how to create a Calculation Override in Excel. The spreadsheet below is referencing the Bloomberg Yield Analysis function (YA). We are solving for yield given a list of user defined prices. The user-defined prices are listed under the heading PX ASK in this case:

Column A: List of securities
Column B: Base Prices (Hand prices from you)
Cell B4, C4 and D4: Calculation Override Fields for Yield Analysis
Cell E5: This is where the BLP Statement is written. For this example, the formula would be:

=BLP(A5,$B$4:$D$4,B5:D5)
Notice the formula in the formula bar for Cell E5. The DDE Link is created after the cell references.

Cells E6 to E15: Copy BLP statement from E5 down.

Not all fields are overridable. Some fields are overridable and some are reactive (can not be overridden but will react to the values assigned to the overridable fields.

Enclosed there is a list of Overridable and Reactive fields.

Categories and Fields to perform Calculation Overrides

1. Fixed Income:

   Corporates and Governments and Municipals
   Yield Analysis (YA) - Yield to Worst
   • PX ASK [BID]
   • YLD CNV ASK [BID]
   • SETTLE DT (YYYYMMDD format) – Optional
   • DUR ASK [BID] (not overridable) - Optional
   • DUR ADJ ASK [BID] (not overridable) - Optional
   • RISK ASK [BID] (not overridable) - Optional
   • CNVX ASK [BID] (not overridable) - Optional

   Yield Analysis (YA) - Yield to Maturity
   • PX ASK [BID]
   • YLD YTM ASK [BID] (not overridable)
   • SETTLE DT (YYYYMMDD format) – Optional
   • DUR ASK [BID] (not overridable) - Optional
   • DUR ADJ ASK [BID] (not overridable) - Optional
   • RISK ASK [BID] (not overridable) - Optional
   • CNVX ASK [BID] (not overridable) - Optional

   Yield Analysis (YA) – Yield to Put and Yield to Call
   Use the same fields in the above example for Yield to Maturity with the exception of the yield fields.
   For Yield to Put: use YLD YTP ASK[BID]
   For Yield to Call: use YLD YTC ASK[BID] (not overridable)

   Accrued Interest
   • INT ACC (not overridable)
   • SETTLE DT (YYYYMMDD format)

   Yield Analysis Spread (YAS) - Yield to Worst
   • PX ASK [BID]
   • YLD CNV ASK [BID]
   • YAS_BENCHMARK_BOND (not overridable)
   • GOVT CNV SPREAD ASK [BID] (not overridable)
   • DUR ASK [BID] (not overridable) - Optional
   • DUR ADJ ASK [BID] (not overridable) - Optional
   • RISK ASK [BID] (not overridable) - Optional
   • CNVX ASK [BID] (not overridable) - Optional
   • WORKOUT DT ASK [BID] (not overridable)
   • WORKOUT PX ASK [BID] (not overridable)

   Asset Swap Spread
   • ASSET SWAP SPD ASK [BID]
   • ZSPD ASK [BID]
   • PX ASK [BID]

   TED Spread Analysis
   • TED IMP PX SPD
- TED SP ADJ SPD
- TED IMP YLD SPD

Corporates and Municipals and Mortgages
OAS analysis
- PX ASK [BID]
- OAS SPREAD ASK [BID]
- OAS VOL ASK [BID]
- DUR ADJ OAS ASK [BID] (not overridable) - Optional
- RISK OAS ASK [BID] (not overridable) – Optional
- CNVX OAS ASK [BID] (not overridable) – Optional
- OAS CURVE ID

Brady Bonds
Yield Analysis
- PX ASK
- YLD STR ASK
- YLD SOVEREIGN ASK
- YLD BLENDED ASK (not overridable) – Optional
- INT RT DUR ADJ ASK [BID] (not overridable) – Optional
- SPREAD DUR ADJ ASK [SPD DUR ADJ BID] (not overridable)
- BLENDED ADJ DUR ASK [BID] (not overridable) – Optional
- INT RT ADJ RISK ADK [BID] (not overridable) – Optional
- SPREAD RISK ASK [SPD RISK BID] (not overridable) – Optional
- BLENDED RISK ASK [BID] (not overridable) – Optional
- INT RT CNVX ASK [BID] (not overridable) – Optional
- SPREAD CNVX ASK [SPD CNVX BID] (not overridable) – Optional
- BLENDED CNVX ASK [BID] (not overridable) – Optional

Convertibles -
- CV MODEL BOND VAL (only overridable if new Calc Type is entered)
- CV MODEL OAS
- CV MODEL CALC TYP (most common calc type = 3)
- CV MODEL STOCK VOL
- CV MODEL YLD VOL
- CV MODEL BORROW COST– Optional
- SETTLE DT– Optional
- CV MODEL UNDL PX– Optional
- CV MODEL TYP– Optional
- CV MODEL FIRM VOL– Optional
- CV MODEL CALL SCHED– Optional
- CV MODEL CALL SCHED PREM– Optional
- CV MODEL PUT SCHED– Optional
- CV MODEL PUT SCHED PREM– Optional
- CV MODEL TRIG SCHED – Optional
- CV MODEL TRIG SCHED PREM– Optional
- CV MODEL IYC NUM– Optional
- CV MODEL FORFEIT TYP– Optional
- CV MODEL IYC NUM– Optional
- CV MODEL UNDL IYC NUM– Optional
- CV MODEL UNDL FMC NUM– Optional
- CV MODEL SECTOR NUM– Optional
- CV MODEL OB OVER– Optional
- CV MODEL FACTOR– Optional
- CV MODEL DIV GROWTH– Optional
- CV EXCH RT EQY BOND– Optional

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• CV MODEL PCT PREMIUM (not overridable) – Optional
• CV MODEL PARITY (not overridable) – Optional
• CV MODEL DELTA S (not overridable) – Optional
• CV MODEL VEGA (not overridable) – Optional
• CV MODEL GAMMA V (not overridable) – Optional
• CV MODEL DELTA V (not overridable) – Optional
• CV MODEL FIXED INC VAL (not overridable) – Optional
• CV MODEL CNVS PREM (not overridable) – Optional

Corporates and Municipals
Sinking Fund
• PX ASK [BID]
• YLD SAVL ASK [BID] (not overridable for Munis)
• YLD LAVL ASK [BID] (not overridable for Munis)
• SETTLE DT – Optional

Floating Rate Notes (FRN’s)
• DISC MRGN ASK [BID]
• YLD CNV ASK [BID]
• PX ASK [BID]

Mortgages:
Yield Analysis - Yield to Worst
• PX ASK [BID]
• YLD CNV ASK [BID]
• DUR ASK [BID] (not overridable) – Optional
• DUR ADJ ASK [BID] (not overridable) – Optional
• RISK ASK [BID] (not overridable) – Optional
• CNVX ASK [BID] (not overridable) – Optional
• MTG PREPAY SPEED (only overridable if new Prepay Type is entered)
• MTG PREPAY TYP
• MTG WAL SPREAD ASK [BID] – Optional
• MTG WAL CALL – Optional
• SETTLE DT (YYYYMMDD format) – Optional

Yield Analysis - Yield to Maturity
• PX ASK [BID]
• YLD YTM ASK [BID]
• DUR ASK [BID] (not overridable) – Optional
• DUR ADJ ASK [BID] (not overridable) – Optional
• RISK ASK [BID] (not overridable) – Optional
• CNVX ASK [BID] (not overridable) – Optional
• MTG PREPAY SPEED (only overridable if new Prepay Type is entered)
• MTG PREPAY TYP
• MTG WAL SPREAD ASK [BID] – Optional
• ZSPD ASK [BID] – Optional
• SETTLE DT (YYYYMMDD format) - Optional

Current Principal/Interest
• MTG FACE AMT
• MTG CUR PRINC PAY (not overridable)
• MTG CUR INT PAY (not overridable)
• MTG FACTOR PRINC PAY (not overridable)
• MTG FACTOR INT PAY (not overridable)
• SETTLE DT

Discount Margin – Mortgage Floaters
• MTG_DISC_MRGN (not overridable) (to maturity only)
• PX_ASK [BID]  
FFIEC test using client default speeds  
• PX ASK [BID]  
• YLD CNV ASK [BID]  
• MTG FFIEC PX D300 [D200,D100, U100, U200, U300] (not overridable)  
(UXXX = Up XXX Basis Points, DXXX = Down XXX Basis Points)  
FFIEC test using Bloomberg Median Speeds  
• PX ASK [BID]  
• YLD CNV ASK [BID]  
• MTG FMED FFIEC PX D300 [D200,D100,U100,U200,U300] (not overridable)  
(UXXX = Up XXX Basis Points, DXXX = Down XXX Basis Points)

2. Equities:

Fundamentals
• Any Balance Sheet, Income Statement or Cash Flow field(s)  
• EQY FUND PER (override written A, Q or Qn where n is number 1-4)  
• EQY FUND CRNCY  
• EQY FUND YEAR (override written YYYY)  
Index Membership and Weighting
• INDX WEIGHT  
• INDX ACTUAL WEIGHT  
• REL INDEX
Volume Weighted Average Price
• VWAP START TIME (format ‘HH:MM:SS) - Cell format TEXT  
• VWAP END TIME (format ‘HH:MM:SS) - Cell format TEXT  
• VWAP DT (YYYYMMDD format)  
• VWAP NUM TRADES (not overridable)  
• VWAP VOLUME (not overridable)  
• EQY WEIGHTED AVG PX (not overridable)
Consolidated Fundamentals (Japanese Stocks)
• EQY JAPAN CONSOLIDATED (either Y or N)  
• Any Fundamental or Earnings data point (NET INCOME as an example)  
Currency Adjusted Market Capitalization
• EQY FUND CRNCY  
• CRNCY ADJ MKT CAP  
Relative Price Returns against Index
• REL INDEX (overridable)  
The following are outputs based on the above overridable field:
• REL 1M  
• REL 1YR  
• REL 3M  
• REL 5D  
• REL 6M  
• REL MTD  
• REL QTD  
• REL YTD

3. Derivatives:  
Options
Exchange Traded Option Pricing
• OPT PX  
• OPT UNDL PX  
• OPT FINANCE RT  
• OPT IMPLIED VOLATILITY BST (not overridable)  
• OPT DELTA (not overridable)
- OPT GAMMA (not overridable)
- OPT THETA (not overridable)
- OPT THEOR VALUE

Over the Counter Option Pricing
1. Create the Over the Counter option on the Bloomberg by using OV<GO> with the underlying security (Equity, Corporate Bond, etc.)
2. Use the Synthetic Option Number of the OTC option for your security number in the Bloomberg API
   - OPT PX
   - OPT UNDL PX
   - OPT FINANCE RT
   - OPT IMPLIED VOLATILITY BST (not overridable)
   - OPT DELTA (not overridable)
   - OPT GAMMA (not overridable)
   - OPT THETA (not overridable)

Swaps
- SETTLE DT
- SW CURVE DT
- SW PAY REC FIXED (not overridable) – Optional
- SW PAY CPN (not overridable) – Optional
- SW REC CPN (not overridable) – Optional
- SW PREMIUM (not overridable) – Optional
- SW CNV DUR (not overridable) – Optional
- SW CNV MOD DUR (not overridable) – Optional
- SW CNV RISK (not overridable) – Optional
- SW EQV DUR (not overridable) – Optional
- SW EQV MOD DUR (not overridable) – Optional
- SW PAY ACC INT (not overridable) – Optional
- SW REC ACC INT (not overridable) – Optional
- SW NET ACC INT (not overridable) – Optional
- SW VAL PREMIUM (not overridable) – Optional
- SW EQV BPV (not overridable) – Optional
- SW CNV BPV (not overridable) – Optional
- SW MARKET VAL (not overridable) – Optional
- SW MARKET VAL PRIOR (not overridable) – Optional
- SW MARKET VAL CHG (not overridable) – Optional

Legend
HH:MM:SS - HH=Hour, MM=Minute, SS=Second. All times are on a 24 Hour Clock EST.
YYYMMD - YYYY=4 digit year, MM=Month, D=Day
(Not overridable) = the field cannot take on user-defined values to solve for the other fields. Reactive field. This field will only result in an answer from the other overrides.

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Thank you for attending the Bloomberg API seminar. Since we do similar seminars throughout the country, we would just like to get your feedback in order to make our seminar better. Your feedback is very important to us.

Seminar City: ______________________________ Date: ______________________
Speaker:  __________________________________________________________
Class(s) Attended: _____ Basic _____Advanced _____ Combination Session
Your Name (Optional):_______________________ Job Title: ___________________
Firm (Optional):    ______________________________________________________
Would you like to be contacted for a follow up training? YES (  ) No (  )   Phone#:______________________

Was the material presented useful in terms of your business needs? If not, what are your business needs?

Was the speaker clear, articulate and knowledgeable on the subject matter?

Do you understand, after this session, the difference between the wizards (table wizard, history wizard, bulk wizard)?

Do you understand the logic of the blp() statement? Would you feel comfortable writing a blp () statement on your own?

For the Advanced Seminar – Do you understand the various advanced blp () statements and know the differences between them? i.e. =blpsh() vs =blph(). Do you know where you can find a list of the various formulas on the Bloomberg?

Is there anything that we can do to improve the API seminars? Any comments/suggestions are appreciated.