$\underset{\mathsf{Note}\ 6}{\mathsf{Bloomberg}}$

Financial Database BAF 507E

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- 1 Bloomberg in Excel
- 2 Bloomberg API
- 3 Appendix

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Functions used in Bloomberg

- To obtain more details on each function, you can enter the function name in Bloomberg.
- BDP: Imports a single data point of current or real-time (continuously updating) data for a selected security.
- Use "Find Fields" to find the data item name.
- BDH: Imports a single data point or a time series of historical intraday or end-of-day data for a selected security.
- BDS: Imports a set of data into multiple cells (i.e., cash flows for a bond, description for an equity, or option chain for a security) for a selected security.
- BAddPeriods: Import an unknown date based on a known date, a specified number of periods, and additional parameters, such as the day count convention.

Template Library

- Find out useful templates for various spreadsheet applications
 - XLTP (in Bloomberg)
 - Search for available templates
 - XAPI
 - Training document with illustrated examples
 - You can use XLTP XAPI to find this and then "Open" to download it (Or get it from Template Library)
 - Search XDIY
 - You can use XLTP XDIY to find this and then "Open" to create your own.
- From Excel:
 - In a Bloomberg terminal, open Excel, find the Bloomberg tab and click it.
 - Click "Template Library". It will open a Bloomberg window with the list of Excel templates. Click "Open" to open a particular template.





XIDA.xlsm: Company In-depth Analysis Template

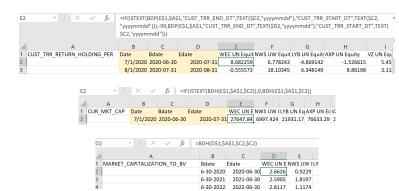
- Open XIDA.xlsm and place the cusor in some cells to find what functions are used to get the data
 - Unhide "DataH" worksheet to find more cells with functions.
 - You can search for the names of Bloomberg functions in the DataH worksheet to see how each function is used in the worksheet.

Bloomberg Query Language: BQL

- Type BQLX \(GO \) to find the information on how to use Bloomberg Query Language (BQL) to retrieve and perform analysis in Excel.
- BQL allows you to perform custom calculations without downloading the data.
- Specify the data and the calculation including arithmetic and statistical operations, filtering, grouping, scoring, and dates-based analysis.
- There are two different formulas:
 - BQL(): Uses the standard Bloomberg formula structure.
 - BQL().Query(): Use a raw string of BQL code, containing the get() and for() clauses [e.g., BQL.Query("get(px_last) for (['IBM US Equity'])")].
- Check out BQLX for more details.

- The first worksheet (Constituent) was created by the following procedures:
 - In a Bloomberg window, type SPX Index MEMB
 - Choose a date in As of 12/31/2020
 - Under "Export", choose "Excel" and save it to a file.
- Copy the Ticker column (from the second row) and then use the "Paste Special - Transpose" option in Excel to paste it in columns of the first row in other worksheets.
- Finally, use Bloomberg functions to retreive the data (returns, market capitalization, and market-to-book equity ratio) for each ticker in each worksheet.

2020SP500Constituents_2025_Short.xlsx



Bloomberg API

- You can access to the Bloomberg data directly from your Python codes by using the Bloomberg API
- You can use it only when you login to a Bloomberg terminal.

API

- Useful links
 - Getting started with Bloomberg's Python Desktop API
 - Historical Stock Price Data in Python
 - Algorithmic trading based on Technical Analysis in Python
 - How to store financial market data for backtesting

Examples

- FDNote6W2025.ipynb includes codes to find the list of member firms of the S&P 500 index, download the returns, market caps, and market-to-book (MB) ratios, and calculate the MB portfolio returns.
- You can use fields information from the FLDS page after choosing an instrument of your choice (e.g., MSFT US Equity) in Bloomberg.

- In a EQS (Equity Screen) window of Bloomberg, you can save a screening result into your account.
- For example, select "Indices" and enter "SPX" to find S&P500 index.
- Choose "Actions" and "Save as".
- Type in any name you want to call it (e.g., "your name") and "Update"
- Then, it will appear in your screens and you can call it from Python by using **blp.beqs('your name')**.
- Unlike LSEG Workspace, you have to specify screening criteria within Bloomberg and call it in Python.

- FDNote6W2025.ipynb shows you how to use the results of an EQS (Equity Screen) and to create portfolios using the results.
- In addition, it also shows how to calculate portfolio returns and test the significance of differences between two portfolio returns.

- Main Equities Menu: 〈 EQUITY 〉 〈 GO 〉
- Current Markets/Monitors
 - Most Active Up/Down: MOST (GO)
- World Equity Indices: WEI (GO)
- Finding securities
 - Ticker Symbol Look Up: TK (****) (GO)
 - SECF(GO): Security finder

```
Main Menu of Bloomberg Functions > Equities > Analyze IBM Equity
    D Company Overview >
                                                    18) Earnings Analysis >
    2) DES
               Security Description
                                                 AI 19) MODL
                                                                Company Financials
               Company News
                                                    20) EVT
                                                                Company Events
   4) DS BRC Company Research
                                                 AI 21) DS TA
                                                                 Transcript Analyzer
               Financial Analysis
                                                 AI 22) ALTD
                                                                 Alternative Data & Analysis
    6) BICO
               Bloomberg Intelligence Primer
                                                    23) Comparative Analytics >
    7) Company Analysis >
                                                    24) EQRV
                                                                Equity Relative Valuation
    8) DSCO
               Company Documents & Search
                                                    29 KPIC
                                                                KPI Comparison
    9 ANR
   10) HDS
               Security Ownership
                                                    26 Equity Derivatives >
   11) ESG
               ESG Analysis
                                                                 Option Monitor
                                                     27) OMON
   12) SPLC
               Supply Chain Analysis
                                                    28) OPX
                                                                 Option Expiration
               Corporate Actions
                                                                BBG Dividend Projections
                                                     29) BDVD
   14) Charting >
                                                    30 Trade Analytics >
   15) GP
               Line Chart
                                                    3D TCA
                                                                 Transaction Cost Analysis
               Graph Fundamentals
                                                                Average Value At Time
                                                    32) AVAT
               Earnings Estimates Graph
                                                                Price and Volume Dashboard
   17) EEG
                                                    33) VWAP
At Indicates function uses Bloomberg AI technology
```

- Weighted Average Cost of Capital and EVA
- Click "Equity" on the screen to find out how the cost of equity was calculated. To find more data sources and assumptions used, you can click \(\text{HELP} \).





CAST

- Capital Structure Analysis
- You can find the detailed information on bonds issued by the company, including prospectus and other information.
- SPLC: Supply Chain Management
- FA
 - Financial Analysis
 - ESG is under FA (8)
- EE: Earnings and estimates
- EVT: Company events

- Enter FLDS (GO)
- Search for the one you want: e.g., WACC
 - Click the one you would like to check

CACT: Corporate Action Calendar

CACT (GO)

Table of Contents

 Can find a list of firms that have taken a certain type of corporate actions such as equity offerings, buyback, M&A and so forth

News search

- NI ⟨ GO ⟩: List of news categories
- NI BBK ⟨ GO ⟩: Scrolling News: Buybacks
- NI BBKNEW \langle GO \rangle : Scrolling News: New Buyback Programs

Total returns

- TRA (GO)
 - Total return analysis
- COMP (GO)
 - Comparative returns

Getting Useful Documents

BPS (GO)

Single Equity – Insider Trading

- Insider Filings History (Example using Intel (INTC))
 - Get company news about insider trading
 - INTC (EQUITY) CN WSA (GO): WSA stands for The Washington Service which is a vender providing insider trading data (https://www.washingtonservice.com/)
 - Insider Transactions
 - INTC \(\) EQUITY \(\) GPTR \(\) GO \(\): GPTR: Insider/Major shareholder transactions
- Other insider trading related functions
 - INSD (GO) (Insider trading monitor)
 - OWN (GO) (Ownership summary)
 - NI IBS (GO) (Scrolling news: Insider buying and selling)

- INTC \(EQUITY \) OMON \(GO \)
- Description

- Click on the specific option you want and type DES (GO)
- Historical options
 - Click on the specific option you want and type: HP (GO)

- Compare an Equity to an Index
 - Intel compared to 2 major indexes
 - INTC \(EQUITY \) COMP \(GO \)

Equity offerings

- IPO ⟨ GO ⟩
- Bloomberg M&A Analysis
 - MA (GO)
 - Mergers and Acquisitions Search
 - M&A League Table Search
 - Mergers and Acquisitions Statistics
 - Mergers and Acquisitions News

- Earnings and Estimates
 - EE (GO)
- Equity screening

EQS (GO)



- EQS: Equity Screen
 - \circ Type 1 \langle GO \rangle to go to the output screen
 - Under "Export", choose "Portfolio" to save the result as a portfolio
 - Choose Name, weight method, etc.
- PORT: Portfolio and risk analysis
- PRTU: Portfolio Management

Bonds

- Main Bond Menu (CORP) (GO)
- Specific Issuer: IBM \(CORP \) \(\langle GO \)
- Specific Bond

```
{Ticker} {Coupon} {Maturity} \langle CORP \rangle \langle GO \rangle IBM 7.00 10/30/25 \langle CORP \rangle \langle GO \rangle
```

Bonds

- IBM (CORP) (GO) and choose a bond
 - DES (GO) Description of bond
 - CRPR (GO) Current & historical debt ratings
 - HP (GO) Historical price and yield
 - YAS (GO) Yield spread analysis
 - TRA (GO) Total return analysis
- RATD (GO) Rating scales and definitions for Moody's, S&P, etc.

To screen for bonds

Table of Contents

 $\, \bullet \, \langle \, \, \mathsf{CORP} \, \, \rangle \, \, \mathsf{SRCH} \, \, \langle \, \, \mathsf{GO} \, \, \rangle \, \, \mathsf{and} \, \, \mathsf{choose} \, \text{``Example Searches''} \, \,$



Macro Economic Analyses

- WGDPWRLD Index ⟨ GO ⟩: World GDP
- ECST: World Economic Statistics
- ECO: Economic Calendars
- WECO: World Economic Calendars

Inflation and Fed Policies

- Inflation Monitor (IFMO)
- Inflation measures
 - GDP deflator (GDP DEFL Index)
 - CPI (CPI INDX Index)
 - Core Personal consumption expenditures (PCE CORE Index)
 - Breakeven inflation rate (TIPS: ILBE (USGGBE30 Index))
- Output gap
 - Actual GDP (GDP CUR\$ Index) Potential GDP (CBOPGDPN Index) = Nominal Output Gap (CBOPGAPN Index)
- Short-term interest rate (Fed Funds Target Rate: FDTR Index)
 - World interest rate probabilities (WIRP)
- FOMC Activities (FOMC)
 - Fed Open Market Committee Statements of meetings (FOMS)
 - STNI FOMC SIDEBYSIDE

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Economic Indicators

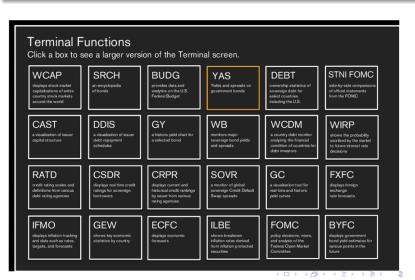
- NAPMPMI: Purchasing managers index by ISM (Business Confidence)
 - PMI (Markit's PMI covering many countries)
- NFP TCH: Nonfarm payroll total monthly change (Unemployment)
- NHSPSTOT: US New Privately Owned Housing Units Starts
- In the US, all the above are updated monthly and therefore, used as good economic indicators compared to GDPs that are updated quarterly with time lags. (ECOS: Provides full details behind economist estimates for calendar release (e.g., NFP TCH Index ECOS))

- ECFC: Long-term economic forecasts
- ECSU: Economics Surprise Monitor

Others

- NI BRIEF ⟨ GO ⟩: Bloomberg Brief Newsletters
- FXFC: FX Forecasts
- OPEC: OPEC Production and Prices
- MAP: Custom map including maps for commodities, power plants and natural gas pipelines

Terminal Functions



- Volatilities
 - VIX (INDEX) GP
 - Implied volatilities
 - SPX (INDEX) HVG
 - Historical realized volatilities
 - HIVG: Historical and implied volatilities
- Other useful commands
 - GRAB: Send the screen image to an email address
 - LAST: Your command history