A Bloomberg Terminal Primer[1]

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1 Introduction

Bloomberg is a platform that provides real-time and historical market data (e.g., stock prices, bond quotes and yields, GDP and unemployment data, news, etc.). According to the New York Times, "Bloomberg is the web that weaves together much of the global financial ecosystem" (April, 17 2015). This primer describes some basic functions that should allow anyone to start using Bloomberg in no time. All the functions illustrated in this primer must be entered in the Bloomberg command line on the top of a typical Bloomberg terminal window, as the one represented in figure 1.

Figure 1: Bloomberg Terminal Window

Notes: This image captures a typical Bloomberg Terminal window after login. Users enter functions in the command line, in the upper left part of the window where the light blue square cursor is visible.

A great learning tool is currently available on Bloomberg and it is called the Bloomberg Market Concepts < BMC >. Reading this primer and taking the Bloomberg BMC will give the reader a great overview of what is possible to achieve using Bloomberg. BMC is a 8-hour self-paced e-learning course that provides an introduction to financial markets. BMC consists of 4 modules (economic indicators, currencies, fixed-income, and equities). At the end of the course, users receive a certificate of completion. Note that you can take the course for free using a Bloomberg terminal. If instead, if you want to take the course on any computer using a web browser, then you will have to pay a fee: at the time this primer was written, the fee was listed at $149[2]. Once you take the test, you can add your resume to the

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[2]Note that < BMC > replaced < BESS >, a test used to evaluate users' knowledge after an online tutorial. Also the BAT test is no longer available on Bloomberg.

Bloomberg platform in order to make it available to all the users (and potential employers); or you can add the BMC certificate to your linkedin profile. This shows how Bloomberg can also help users with their job search. For example, < JOBS >, which recently replaced Bloomberg Talent Search (< BTS >), is a function that users and recruiters can use to search and post job vacancies. Potential employers can search users according to many different selection criteria and possibly contact them with job offers. On Bloomberg it is also possible to search for people using the < PEOP > function. The latter is a very useful networking tool when searching for a job. A useful function to use when preparing for an interview is < USER >. By writing < USER > and then < GO >, Bloomberg users will access the users' workflow. For example, you can select a "job" to see what are the functions that Bloomberg users with that particular jobs are more likely to use (for example, the job corresponding with the position you are interviewing for, e.g., stock analyst). Needless to say, make sure you know how to use these functions to look smart during your interview. A last useful feature that you can use to prepare for an interview is < QUICK >, for Bloomberg quick takes. You will find a long list of topics, and by clicking on them you will get "quick" and basic information on all of these. This way you can make sure to be up to date with all the most recent and relevant discussion topics and hopefully ace your job interview. In the next sections, we will cover in detail various Bloomberg functions.
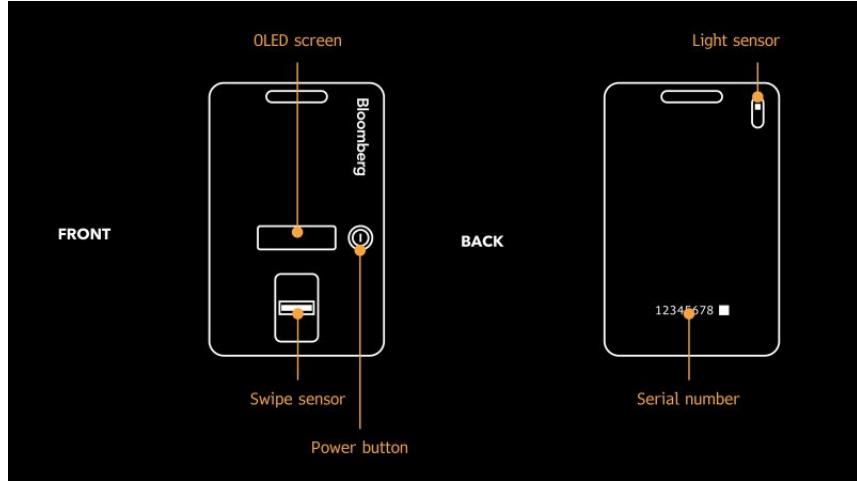
2 First steps on Bloomberg

In this section you will learn the basic Bloomberg functions that will allow you to take the first steps on Bloomberg in order to quickly learn how to use a terminal and enjoy your experience.

2.1 First time login

The first time you use a Bloomberg terminal, you need to create a user account. You will need your cellphone to activate your personal account. Follow the on-screen instructions and you will be soon be able to access Bloomberg. Typically terminals are associated with a specific machine, and you will be able to access Bloomberg only on that specific machine (or on different machines also associated with a Bloomberg subscription). However, if you are lucky enough, you will get a Bloomberg anywhere subscription that lets you connect to Bloomberg using a web browser, or applications on your mobile devices (see figure 2). Note that your Bloomberg account will be linked to the professional email you have used at registration. If you change job or, for example, finish college and start using Bloomberg at

Figure 2: Bloomberg Anywhere B-Unit

Notes: To access your Bloomberg Anywhere account you will need a biometric authentication. A finger swipe scanner is embedded in the Bloomberg keyboard, and a portable scanner, known as a B-UNIT, allows you to access your account from any location using a computer or mobile device. The B-UNIT, represented in the image, is the size of a credit card.

work, you will will need to start a new Bloomberg registration. Needless to say, a subscription to Bloomberg is expensive and most workplaces and colleges will offer access to a limited number of terminals.

2.2   First functions

This section presents a short list of useful functions that will get you started with Bloomberg. Section 3 presents additional specific functions with examples to understand when and how to use them. If readers have access to a Bloomberg terminal, it is recommended that they try to use each of the following functions while they proceed reading this primer.

Bloomberg is first of all an incredible source of real-time and historical financial (and not only) news. To search for news, type < NI > and a subject title, for example EQUITY, ITALY, etc. Note that the Bloomberg command line works much like the Google search bar using the auto-complete function, providing live suggestions for your search while typing your query. With time, you will learn to use fast commands and shortcuts that suit your needs. For example, suppose you are interested in the main news of the day about the Italian economy, you can type first < NI IT>. Other useful codes that you can add after < NI > are ECB, i.e., news about the European Central Bank including main interest rates; FED, i.e., news about the Federal Reserve; or TOP, i.e., the top news of the day (see figure 3). Note that you can customize the news view: for example, order news by time, relevance, or most

Figure 3: Top News

Notes: The image represents the Bloomberg Terminal window after entering the function < NI TOP >, that loads the top news for the day. The screenshot is from October 11, 2018.

read; select source; etc. For advanced news search you can type < N >, for the news and research menu. Alternatively, you can simply type < NI > for the news categories browser. For example, you can choose management changes (shortcut MGMTCHG) and then CFO changes in the topics menu to read all the news regarding changes in the CFOs in the data range you selected.

Bloomberg is also an amazing resource for charts and summary moves for the major financial indices (e.g., equity, fixed income, commodities, etc.). You can start by using the < GMM > function. This function, which stands for "Global macro movers" is very used on news broadcast and provides and immediate graphical snapshot of different markets in different countries at that moment in time using colors to highlight the performance. Note that you can also set a past date and, for example, look at what markets looked like on the days of some important events (e.g., Brexit referendum, President Trump's election, etc.). In particular, you can also directly select "events" in the menu of the GMM window to get to the GMM window corresponding to some relevant events selected by Bloomberg, or economic releases, etc. Note that the GMM window, represented in figure 4, contains several pages, and it is possible to customize it to your needs.

You can access additional resources on the major financial indices and other financial data using the following functions.

- < WEI >: **World equity table**. Summary information on the main world equity

Figure 4: Global Macro Movers
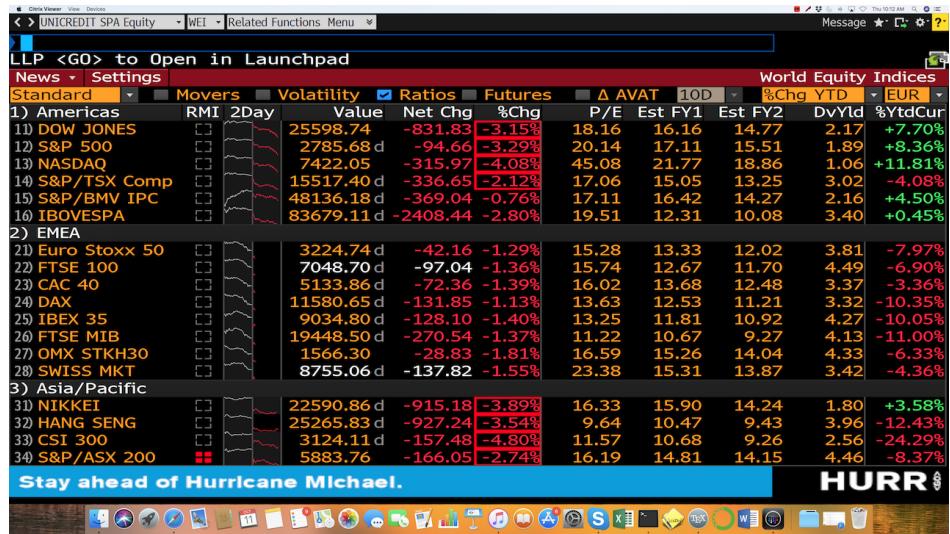
Notes: The image represents the Bloomberg Terminal window after entering the function < GMM >, that loads global macro movers. The screenshot is from October 11, 2018.

indices. Note that if you click on the small chart icon next to each index, the corresponding chart will pop up (see figure 5). The small icons provide a snapshot of the last two days as well as intraday movements of the corresponding indices. By clicking on the icons, you can also modify the length of the sample, and edit the graph. Note that you can edit the time-frame of the table. The default window will show the main indices for the Americas, EMEA (i.e., Europe, Middle East and Africa), and Asia/Pacific. For each index, the Bloomberg Terminal window will show the value, the net change, the percentage change, the day/time at which the index has been computed, the year-to-date percentage change in value and the currency adjusted (i.e., local currency) year-to-date percentage change in value. The latter is important when, for example, you compare a European equity index with a U.S. equity index. Since the two indices are originally computed in different currencies, a correct comparison requires to first make sure they are reported in the same currency. You also have the option to add additional information regarding movers, volatility, ratios, and futures. Note also a general color-convention used throughout Bloomberg: numbers in "red" indicate a price below the prior day close price; numbers in "green" a price above the prior day close price. As a general rule, just move the cursor on one of the headers (e.g. Net Chg, %Ytd, etc.) to see a short explanation of the corresponding variable.

- < WB >: **Government bond table**. Summary information on main world government

Figure 5: World Equity Indices

Notes: The image represents the Bloomberg Terminal window after entering the function < WEI >, that loads world equity indices. The screenshot is from October 11, 2018.

bond indices. Note that if you click on the charts under the "yield" column, the corresponding charts will appear. Recall that there is an inverse relationship between bond prices and yields. You can edit the time-frame of the table. From the default window, you can click on the spreads or curves tab to obtain data on, respectively, yield spreads and the term structure of interest rates. For the spread, you can choose the term of reference (i.e., the benchmark, like Germany for the Eurozone as represented in figure 6). Note that Bloomberg additionally reports the historical data rage, with low, high and average values over a given period of time (the default range is 3 months).

- < EMEQ >: **Emerging market equities**. This table is similar to the one obtained with < WEI >, but it refers specifically to emerging market equity indices.

- < GLCO >: **Global commodity prices**. This function provides an overview for energy, metals, agriculture, and more in general commodity prices. It works very similarly to < WEI > and < WB >, and also reports information on aggregate volume.

- < WCR >: **World currency rates**. The default currency is the USD. You can edit the default currency and the basket of currency considered and look at daily spot quotes and percentage changes at 1-day, 5-day, 1-month, 3-month, and 6-month.

- < VCCY >: **Crypto currency monitors**. This function provides an overview of cryptcurrency prices (see figure 7). Bloomberg by default reports the spot prices of

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Figure 6: World Bonds

Notes: The image represents the Bloomberg Terminal window after entering the function < WB >, that loads world bond indices, and choosing the tab "spreads". The screenshot is from October 11, 2018.

bitcoin, ripple, ethereum, and litecoin in U.S. dollars, together with the prices of futures on bitcoin. Note that from this window you can also have access to intra-day and historical prices.
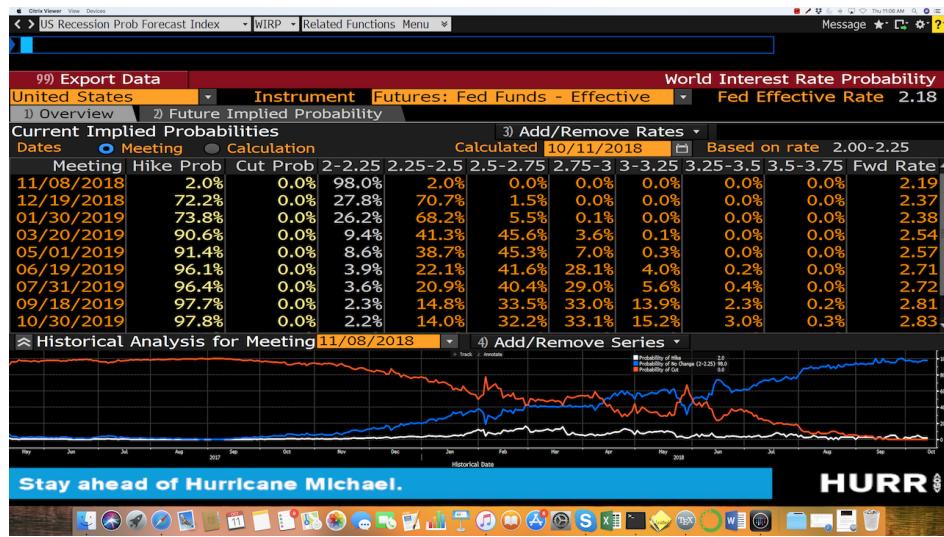
Figure 7: Crypto Currency Monitor

Notes: The image represents the Bloomberg Terminal window after entering the function < VCCY >, that loads the crypto currency monitor. The screenshot is from October 11, 2018.

- `< WIRP >`: **World interest rate predictor**. It provides interest rate probabilities, at different dates and for different countries, based on futures market. For example, in figure 8 we reports the window corresponding to the U.S. as of October 10, 2018. Bloomberg reports interest rate hike and cut probabilities, along as the probabilities that the interest rates lie in different intervals. At the bottom of the window, Bloomberg additionally reports the time-series evolution of these probabilities, in order to get a quick snapshot of possible changes in the monetary policy cycles.

Figure 8: World Interest Rate Predictor

Notes: The image represents the Bloomberg Terminal window after entering the function `< WIRP >`, that loads the world interest rate predictor. The screenshot is from October 11, 2018.

- `< FTW >`: **Factors to watch**. It reveals which factors have historically or are currently moving equity returns across market segments. This function will enable you to assess key factor exposures for a single security; track relevant factor performance; and monitor active returns (see figure 9).

- `< ILBE >`: **World inflation breakeven rates**. ILBE displays breakeven inflation data. Breakeven rates are the difference between an inflation-index bond and a regular bond. Standard maturity is 10-year. Therefore, for a rate of inflation equal to the breakeven rate, the investor should be indifferent between the nominal and the inflation-linked security. Therefore, ILBE provides market-based (i.e., risk-neutral) estimates of inflation expectations. Inflation-indexed bonds (also known as inflation-linked bonds or colloquially as linkers) are bonds where the principal is indexed to

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Figure 9: Factors to Watch

inflation. Figure 10 reports the largest and smallest breakevens for all countries as of October 10, 2018. Note that breakeven rates can also be computed using swaps or forward rates.

Figure 10: World Inflation Breakeven Rates

- **< BETA >**: **historical beta**. This function estimates the beta of a security, for example a stock, with respect to another stock (i.e., the aggregate market in the CAPM spirit). The function is highly customizable and returns various statistics to gauge the significance of the regression estimate. Figure 11 reports the market beta for the Apple stock. The period of analysis is 10/11/2016 to 10/11/2018 at weekly frequency, and the "market" is the S&P 500 Index. In this case, the raw beta is 0.988 and the R^2 approximately 22%.
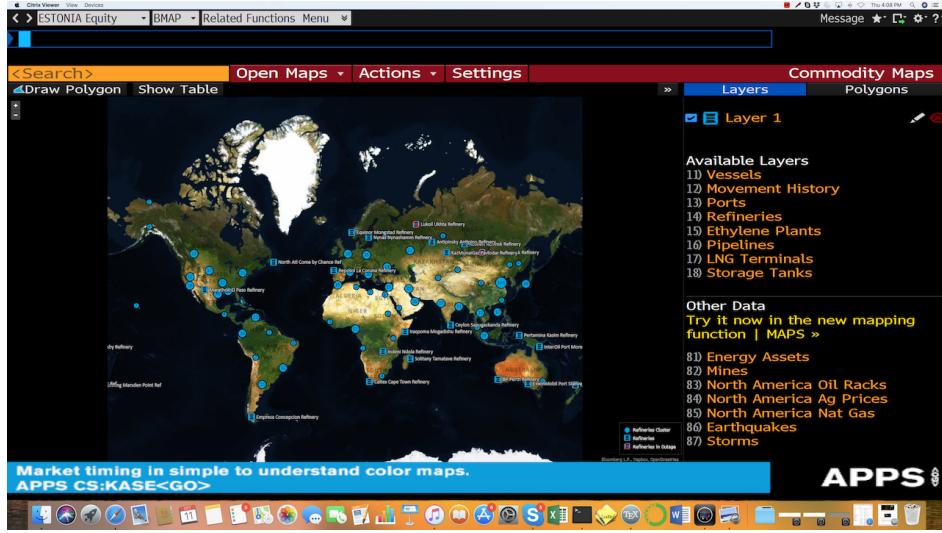
Figure 11: Market Beta

Notes: The image represents the Bloomberg Terminal window after entering first the function < APPL US Equity >, for the Apple stock ticker, and then the function < BETA >, for the historical market beta. The screenshot is from October 11, 2018.

- **< BI >**: **Business intelligence**. For example, type first < APPL US Equity > and then < BI INDUSTRY > to access reports from Bloomberg analysts for that particularly industry. As another example, type the function < BI OUTLG > to access the global outlooks developed by the Bloomberg Intelligence Unit.

- **< BMAP >**: **Bloomberg commodity map**: plots the world map, and identify reserves of different commodities (e.g. oil, gold, etc.), mines, vessel routes, etc. For example, in figure 12 we reports the Bloomberg commodity map and identify locations of refineries.

- **< CCRV >**: **Commodity curve analysis**. This function, applied to a commodity (e.g., Brent crude), returns the curve based on futures for different maturity dates. It

Figure 12: Bloomberg Commodity Map
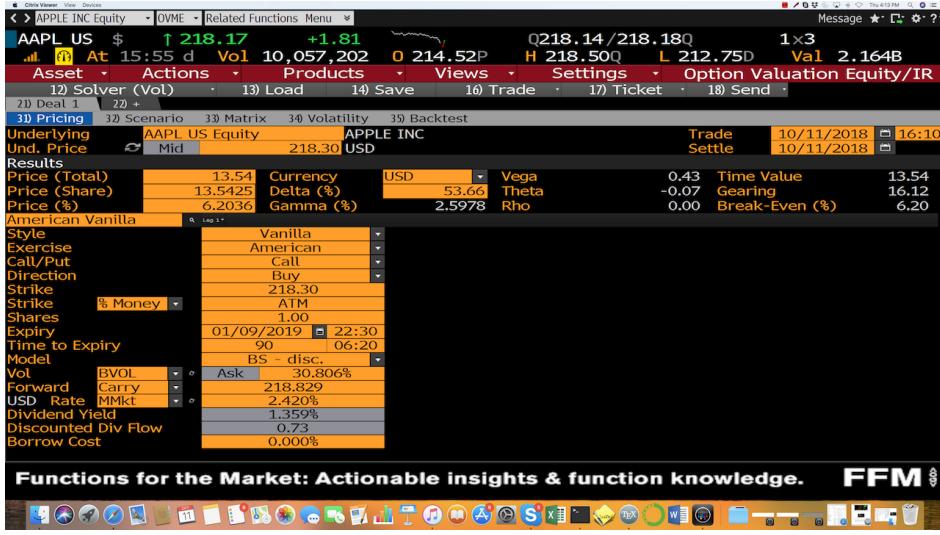
Notes: The image represents the Bloomberg Terminal window after entering the function < BMAP >, that loads the Bloomberg commodity map. The screenshot is from October 11, 2018.

is also possible to super-impose on the same plot past curves to analyze the changes in expectations regarding the commodity prices.

- < GC3D >: Type this function to graph 3D curves (for example, yield or swap curves). The 3D plot will show the tenor (i.e., 1M, 3M, etc.), the rate, and the corresponding date. In this way, you can immediately visualize recent changes in the yield curves with different maturity.

- < OVME >: **Option valuation**. This function is for equity, and a similar function exists for currencies. If you type this function, a window will appear with all the typical inputs from the Black-Scholes formula. You can play with the parameters, and see how the option price changes (see figure 13). This is a also a great educational tool to test your understanding of the formula.

- < TAYL >: **Taylor rule model**. This is the classic Taylor rule for monetary policy. Pick a country (e.g., the United States), and immediately check the implied interest rate that the central bank should set to be consistent with the rule (see figure 14). You can easily modify and customize the rule, and change the data range. As for the function < OVME > discussed above, also < TAYL > is a a great educational tool. Use it to test your understanding of this famous model of monetary policy. For the United States, Bloomberg reports the Taylor estimate along the current FED rate,

Figure 13: Option Valuation

and the time series of the difference between these two series. Note that in figure 14, the difference is highlighted in red to denote that interest rates should be higher than those actually set by the FED according to the rule. Finally, note how in the bottom of the Bloomberg window the formula for the Taylor rule is displayed. By changing the values of the formula parameters you can easily modify the rule according to your priors.

Bloomberg is also a great resource for economic statistics for different countries and markets. The following functions will give you access to different economic indicators.

- < ECO >: **Economic data releases for the week, by region**. A great function to start with is < ECO >, which loads the economic calendars, i.e., the economic releases for a given day, like CPI, GDP, new housing starts, etc. You can edit the time-frame, the country/region, and, by clicking on each economic release, you can get more information, including charts and related news. A very useful piece of information, for each news release, is its expected value coming from a survey of experts. According to the efficient market hypothesis, market prices should be affected only by *new* information, and not by the simple release of information that is already public (i.e., all available information is already incorporated in market prices). Therefore, the difference between the actual value of a given release, and its expected value, can be interpreted

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Figure 14: Taylor Rule Model

Notes: The image represents the Bloomberg Terminal window after entering first the function < TAYL >, for the Taylor rule model. The screenshot is from October 11, 2018.

as a *news shock*. News shocks should affect market prices. For example, you can try selecting one economic release (say, the "adjusted retail and food services sales"), and by clicking on it you will be able to read the release time, the forecasted value by a sample of experts, the values from prior releases, together with a plot of the historical time-series of the actual index and the corresponding survey values. For each economic release, the default Bloomberg window (reported in figure 15) has information on the day/time, an indicator or relevance, the name of the economic release, the period, the survey value, the actual value, the prior value, and the revised value. Note that you can listen/watch live the release of the economic information when available.

- < ECST >: **World economic statistics**. Start by selecting the country, or region, then select the statistics you are interested in. As for the functions described above, you will get news and general information on the selected statistics, and a chart. The default window reports information on the main components of GDP, i.e., consumption, public and private investment, imports and exports for the current and previous quarter.

- < ECOW >: **Economic Data Watch**. For each country, the default window reports data on GDP, inflation, the labor market, the housing market, consumer confidence, etc. It is possible to choose among many different indicators as reported in figure 16 (e.g., national accounts (default), labor market, housing market, etc.). Data are for

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Figure 15: Economic Calendars

Notes: The image represents the Bloomberg Terminal window after entering the function < ECO >, that loads the economic calendars. The screenshot is from October 11, 2018.

the last four quarters.

Figure 16: Economic Data Watch

Notes: The image represents the Bloomberg Terminal window after entering the function < ECOW >, that loads the economic data watch. The screenshot is from October 11, 2018.

- < ECFC >: **Economic Forecasts**. This function returns, for different countries, the

forecasts of several key macroeconomic variables (i.e., GDP and its components, price indices, etc.), along the data for previous years. As reported in figure 17, actual data are reported in amber color, and forecasts in white. It is possible to choose whether to report private or official data, and the frequency (i.e., yearly, or quarterly). Note that the window also reports the probability of recession within 12 months. This probability is computed as median survey value. If you click on the corresponding value (i.e., 15% for the U.S. as of October 10, 2018), you can access additional information as the individual probabilities expressed by different contributors, along with mean and Bloomberg weighted average value (see figure 18).

Figure 17: Economic Forecasts

Notes: The image represents the Bloomberg Terminal window after entering the function < ECFC >, that loads the economic forecasts. The screenshot is from October 11, 2018.
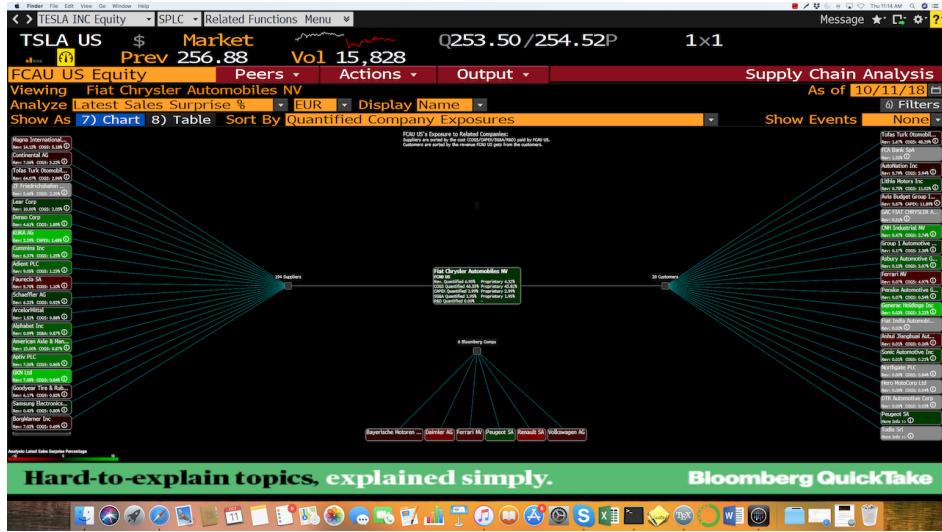
A very useful Bloomberg function when analyzing a given company or industry is < SPLC >, or supply chain analysis. Suppose you have to prepare a report on a given company, say Fiat Chrysler Automobiles (< FCAU US Equity >). A first step could be to type < SPLC > to access the supply chain analysis for this company. This means that you can immediately visualize the suppliers, the customers, and its competitors. By clicking on any supplier, or competitor, or customer, you can access further information, and the supply chain graph for this additional company. In figure 19 we report the supply chain analysis for the Fiat Chrysler group. The figure lists the main suppliers, customers, and competitors. Note that by clicking on the name of, for example, a supplier, we can access its supply chain and we continue this process to have a deep understanding of the market.

Figure 18: Probability of Recession

Figure 19: Supply Chain Analysis

Finally, when working with Bloomberg becomes a routine, it is very useful to use "Launch-pad". Launchpad is a customizable display consisting of a number of smaller windows, called components, each dedicated to permanently displaying one set of data. It is very convenient

to set and customize your **Launchpad**. To start launchpad use the function < BLP >. To start a given terminal window in launchpad, use the function < LLP >. When you will start Bloomberg, a series of different windows (that you have previously selected) will immediately pop-up and perfectly fit your monitor, or monitors. A standard launchpad would contain selected news, world equity indices, currency markets, and global macro movers.

3 Specific Bloomberg functions

The previous section presented a group of functions that can get you started with Bloomberg. This section presents additional functions and provides details and examples on how to use them.

3.1 How to look for a specific stock

Suppose you have in mind a company, say Apple, and you want information about this company. You can start by entering the company's name in the command line. The auto-complete will help you with your search. In the list that will appear, select the company you are looking for under the heading "securities." After you hit < GO >, the Apple company page will appear, and at top left, you will see the ticker, or security identifier. Normally the ticker is a 3 character abbreviation, followed by a 2-digit location indicator. However, the ticker can also have more than 3 characters. For example. for Apple is APPL US. A further interesting example is Alphabet's ticker, which is GOOG. Alphabet is a particularly interesting example. It was created through a corporate restructuring of Google on October 2, 2015. Note also that, in April 2014, the Google stock split in two categories: Google class C shares, with ticker GOOG; and Google class A shares, with ticker GOOGL. Both stocks are traded in the market. GOOG shares have no voting rights, while GOOGL shares have one vote each. Before the stock split, all Google shares had voting rights. To make things even more fun, there exist Google class B shares, but they are not traded in public markets. Each of the class B shares gives the right to ten votes. These shares are usually held by Google insiders. In the main ticker page (see figure 20), just click on one of the options to get the corresponding information. Note that the main ticker window also reports information on price and volume, and currency of denomination.

The main options (i.e., functions) are:

- < DES >: provides a brief description of the company, the market capitalization, top management, 1-year return, etc. Note that in this window you can access a Bloomberg Intelligence Primer on the company, and have a quick snapshot of the fundamentals,

Figure 20: Apple Inc Equity

Notes: The image represents the Bloomberg Terminal window after entering the ticker < APPL US Equity >, that loads the Apple Inc. ticker page. The screenshot is from October 11, 2018.

including a price chart for the last year. The window also provides different tabs: issue info, ratios, revenue and EPS, and industry info. Additionally, it provides information on the names of the top managers, and by clicking any of the names you can have immediate access to their bios. The company description window for Apple is reported in figure 21.

- < CN >: provides news for the company. Note that you can narrow the news search using the box on the top of the page.

- < GP >: provides the price chart of the stock. You can edit the time-frame, add benchmark indices or stocks, change the currency. Note that, at the bottom of the window, Bloomberg reports also a volume bar graph (see figure 22 for the graph plot for the Apple stock). You can edit the graph using the options under the "edit tab". However, it is recommended to first save the graph, under the "actions" tab, before editing. In fact, some of the edit options are available only for saved graphs. Once the graph is saved, it can be accessed at a later date, or shared with other Bloomberg users.

- < GPL >: provides the price chart of the stock on a logarithmic scale. You can edit the time-frame, add benchmark indices or stocks, etc. This is particularly useful for longer time-series, and/or for assets whose value has changed a lot during the selected

Figure 21: Apple Inc Equity (Security Description)

Notes: The image represents the Bloomberg Terminal window after entering first the ticker < APPL US Equity >, that loads the Apple Inc. ticker page, and then the function < DES >, for security description. The screenshot is from October 11, 2018.

Figure 22: Apple Inc Equity (Graph Plot)
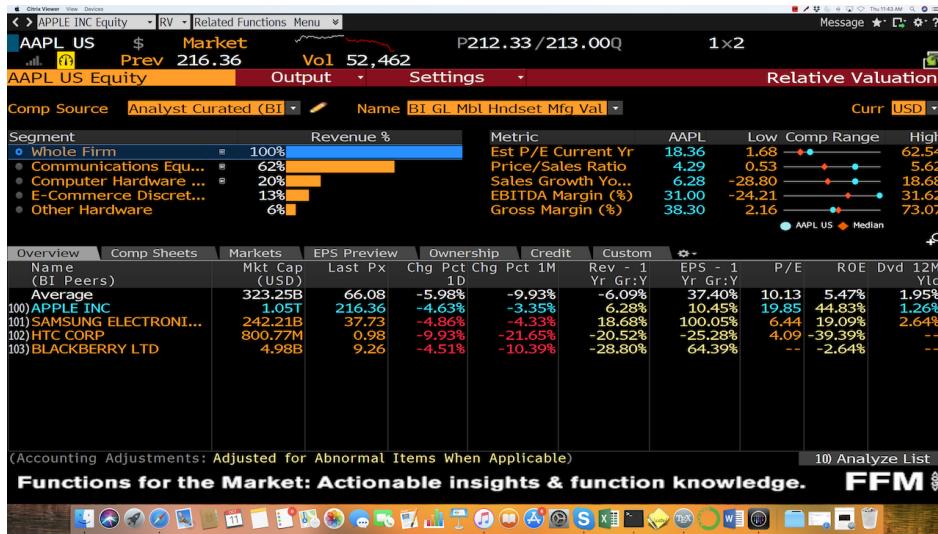
Notes: The image represents the Bloomberg Terminal window after entering first the ticker < APPL US Equity >, that loads the Apple Inc. ticker page, and then the function < GP >, for graph plot. The screenshot is from October 11, 2018.

time-frame. It is based on orders of magnitude, rather than a standard linear scale, so the value represented by each equidistant mark on the scale is the value at the previous mark multiplied by a constant.

- < RV >: provides a comparison table with peers: this includes share price, market capitalization, revenue growth, ownership, credit, etc. Note that it is possible to compare the whole company, as well as segments of the company. The information provided by the < RV > is curated by Bloomberg Intelligence. Figure 23 reports this information for the Apple stock.

Figure 23: Apple Inc Equity (Relative Valuation)

Notes: The image represents the Bloomberg Terminal window after entering first the ticker < APPL US Equity >, that loads the Apple Inc. ticker page, and then the function < RV >, for relative valuation. The screenshot is from October 11, 2018.

- < DVD >: provides dividend information, like payment dates, ratios, etc.

- < FA >: provides a financial analysis table with balance sheet information. Note that the default window provides the key statistics. It is also possible to load income and balance sheet statements, as well as cash flow templates and company ratios. Balance sheets can be reported either "as reported", or "adjusted", i.e., in a standardized format that makes it easier comparison with peers.

- < GF >: provides a graph of financial fundamentals (note: you can choose the variables you like).

- < HDS >: it provides information on the security ownership, with a list of the major shareholders.

- < PHDC >: provides the custom ownership search (for example, you can look at transactions of insiders).

- **< MGMT >**: provides information on the company management, including bios of the top management.

- **< EVT >**: provides a list of upcoming reporting dates.

Note that these *are not* the only options available. By clicking on each of the main group functions (i.e., company overview, company analysis, etc.), additional available functions will show up. We leave it to the curiosity of the readers to explore these additional functions.

3.2 How to search the universe of stocks

In the previous section we learned how to search for a specific stock by simply typing the stock name, for example the Apple stock, in the Bloomberg command line. Suppose now that you are instead interested in searching for a security (or a set of securities) that satisfies some criteria of your choice: e.g., it is traded in the U.S. market, the currency is the USD, and it belongs to the energy sector. You can select more stringent criteria: e.g., the security price-to-earning ratio must be below some threshold value, etc. On Bloomberg you can use the function **< SECF >**, or security finder (see figure 24); or the function **< EQS >**, or equity screening (see figure 25). The use of both functions is similar: you are required to input the selection criteria. With **< EQS >** you can easily add customized search criteria. The output of the functions is the list of securities that match your criteria. Suppose now that you have found a list of securities that match your searching criteria. You can easily export the list to Excel by dragging the Excel icon from the top right of the Bloomberg window on an Excel file (note: the Excel drag-and-drop feature is common to many other Bloomberg terminal windows), or by using the "export" tab. Note that with **< EQS >**, you start with the entire universe of active and inactive securities available on Bloomberg (at the time this primer was written, 1,034,149). By selecting more stringent criteria, you restrict the available set of securities. For example, if you want to consider only the actively traded securities, the number drops to 334,576. To add criteria, you can simply enter a description in the "add criteria" field, or search for available fields.

3.3 How to search the universe of fixed-income securities
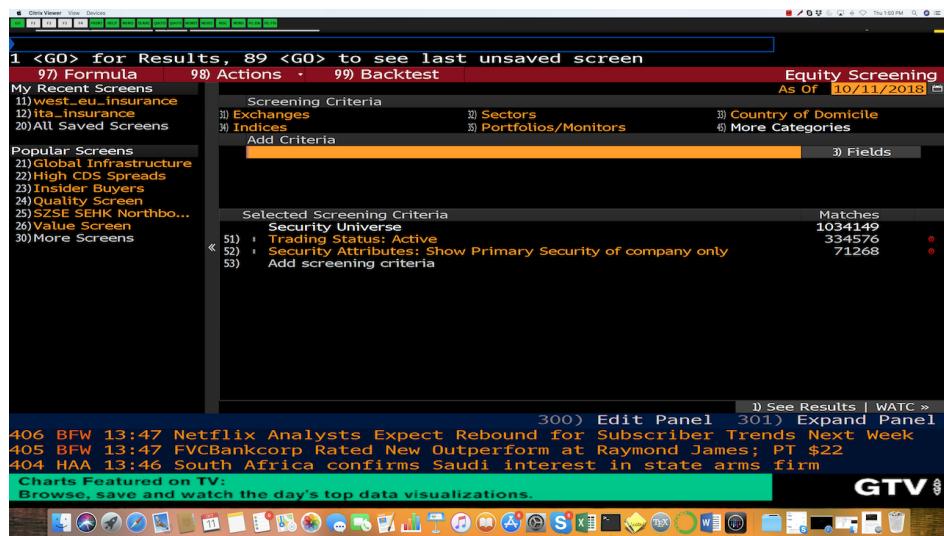
Suppose you are interested in searching for a fixed income security, rather than an equity security. The function **< SRCH >**, or fixed income search, is the equivalent of **< EQS >** for bonds. Note that by default Bloomberg searches among the universe of *active securities*, which at the time this primer was written was equal to 404,100 securities This is most of the time the right choice if you are, for example, a trader looking for a security to buy or

Figure 24: Security Finder

Notes: The image represents the Bloomberg Terminal window after entering the function < SECF >, that loads the security finder. The screenshot is from October 11, 2018.

Figure 25: Equity Screening

Notes: The image represents the Bloomberg Terminal window after entering the function < EQS >, that loads the equity screening. The screenshot is from October 11, 2018.

sell. However, suppose you are a researcher and you are interested in building a sample that goes back in time. For example, you want to look at the behavior of all the bonds issued by the Republic of Italy in the last twenty years. Clearly, many of these bonds have matured

and are not active anymore and by using the option "active" you would build a sample that suffers from *selection bias*. You can include these bonds in your search by removing the option "active", in the search criteria. In this case, the number of securities increases to 2,406,323. Note that including in your sample "inactive" assets is often useful in order to avoid a *sample selection bias*. For example, if you need to analyze the performance of all the NYSE listed stocks in the last 20 years and you do not include stocks of companies that have gone out of business you will most likely over-estimate the performance of the NYSE equity market. Note that you can build and edit existing searches, and load previously saved searches.

3.4   How to search for an ETF

An exchange-traded fund (ETF) is an investment fund traded on stock exchanges, much like stocks. Most ETFs track an index, such as a stock index or bond index. ETFs may be attractive as investments because of their low costs, tax efficiency, and stock-like features. To search for an ETF, just use the < ETF > function to access the ETF library (see figure 26). You can search ETFs for asset class, exchange, strategy, etc. The function works similarly to < EQS > and < SRCH >. Note that you can choose among different tabs to display the ETFs: key metrics, cost, performance, flow, liquidity, allocations, and regulatory structure. The default window displays key metrics, and includes 30-day volatility, class and fund assets value, year-to-day return and flows, and number of holdings in portfolio.

3.5   How to search for a mutual fund

A mutual fund is a professionally managed investment fund that pools money from many investors to purchase securities. These investors may be retail or institutional in nature. Much like stocks and fixed-income securities, it is very easy to search for a mutual fund on Bloomberg. Simply type < FSRC >, for Fund Screening. You will be able to enter different selection criteria (i.e., fund type, country of availability, etc.) to select the funds in which you are interested (see figure 27). At the time of this writing, the universe of funds is equal to 841,479, while active funds are 373,998. The standard universe criteria are: classifications; fund type; country of domicile; country of availability; portfolio/monitor; currency; manager location; fund description; holdings classifications; allocations; and exposure.

Figure 26: ETF search

Notes: The image represents the Bloomberg Terminal window after entering the function < ETF >, that loads the ETF search window. The screenshot is from October 11, 2018.

Figure 27: Fund search

Notes: The image represents the Bloomberg Terminal window after entering the function < FSRC >, that loads the fund search window. The screenshot is from October 11, 2018.

3.6 Searching for Fields

A very useful function for someone starting to use Bloomberg is < FLDS >, which opens the Data Field Finder. Insert or look for a security in which are interested, and then just enter

key words related to the field of your interest. Bloomberg will show a list of available fields and you have the option to select those you like. By clicking on a specific field Bloomberg will show you a short definition. Browsing through the data field finder is a great way to learn what kind of information you can find on Bloomberg.

3.7   Plotting Graphs

Suppose you selected the Fiat Chrysler Automobiles ticker FCA IM and then entered < GP > to plot the historical graph. It is good practice to save the graph, because in this way you have access to different options that are not otherwise available. In figure 28 we report the graph plot for the period 10/11/2017 to 10/11/2018 and click on the "key events" options. Blue flags denote the key events, and if you scroll with your mouse on each flag, you can get information on that particular event. For example, in the figure a key event on 7/25/2018 in which FCA missed the EBIT target in the second quarter and shares fell 4.1% is highlighted. Alternatively, you can open the chart content options on the graph as

Figure 28: Graph and Key Events

Notes: The image represents the Bloomberg Terminal window after entering first the ticker < `FCA IM Equity` >, that loads the FCA group ticker page, and then the function < `GP` >, for graph plot and select the key events option. The screenshot is from October 11, 2018.

it is shown in figure 29 which considers again the FCA ticker for a longer period that starts 10/11/2015 and ends 10/11/2018. In this case, you can add a security, field, study, or event. The figure considers the example in which the event "CEO" and "dividends" are added. Flags denote the events. In the sample, we can see that the CEO of FCA changed after

the unexpected death of Sergio Marchionne. Different background colors denote the time in which the different CEOs are in charge. The list of additional events that can be taken into consideration includes debt offerings, dividends, stock buybacks, or even transactions involving insiders (e.g., top management, existing large shareholders, etc.).

Figure 29: Graph and Content Options

3.8 Indices

If you are interested in an index, say the Dow Jones Industrial Average, you are probably also interested in knowing its components, and the corresponding weights. A useful function is < MEMB >, that provides the components of an index. For example, if you type < INDU Index > and then < GO >, and then < MEMB > and < GO > you will see the components of the Dow index: their tickers, names, and index weights. A good exercise is to compare the weights of the DJ Industrial Average with those in the S&P 500 index. Obviously, the S&P 500 index has many more members (the Dow has only 30 members). But the more interesting difference is that, while the DJ Industrial Average is a *price-weighted* index, the S&P 500 index is a *market capitalization weighted* index. The value of the Dow is not a weighted arithmetic mean and does not represent its component companies' market capitalization, but rather the sum of the price of one share of stock for each component company. The sum is corrected by a factor which changes whenever one of the component stocks has a stock

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split or stock dividend, so as to generate a consistent value for the index. If you want to replicate the Dow, you can drag and drop the tickers and the weights on an excel file, and then download historical data on the different components. Note that weights change over time.

Figure 30: Member Weightings

Notes: The image represents the Bloomberg Terminal window after entering first the ticker < INDU Index >, that loads the Dow Jones Industrial Average Index, and then the function < MEMB >, that provides information on the member weightings. The screenshot is from October 11, 2018.

3.9   Credit Risk

In Bloomberg you can find plenty of important data to measure credit risk. If you are interested in credit default swaps (CDS), just type < CDX > for the CDS index monitor. Recall that a credit default swap is a financial swap agreement in which the seller of the CDS will compensate the buyer in the event of a debt default (by the debtor) or other credit event. For credit ratings, you can type < CSDR >, for sovereign ratings. Figure 31 reports sovereign ratings for the Eurozone. You can easily customize the set of countries of interest. Note that for each country, Bloomberg reports by default the ratings on foreign currency long-term debt, and foreign currency short-term debt. Emerging countries typically issue debt in foreign currency, hence these are the relevant ratings. However, developed countries typically issue debt in their own, local, currency. By selecting the local currency option, Bloomberg displays ratings on local currency long-term debt, and local currency short-term debt. Note that by clicking on one of the ratings, we have access to the historical ratings

with the dates of rating changes.

Figure 31: Sovereign Ratings

Notes: The image represents the Bloomberg Terminal window after entering the function < CSDR >, for sovereign ratings. The screenshot is from October 11, 2018.

3.10   Currency Markets

In Bloomberg there are many functions related to currency market mechanics. Some of these are the following. < ECTR > displays trade flows. < FXCA > is a currency conversion calculator. < PEG > provides a list of currency with a peg exchange rate. Note that a fixed exchange rate, sometimes called a pegged exchange rate, is a type of exchange rate regime in which a currency's value is fixed against either the value of another single currency to a basket of other currencies or to another measure of value, such as gold. < WIRA > reports the international reserves of different countries. Finally, < FXC > displays the currency matrix (i.e., how many units of currency in row are required to buy 1 unit of currency in column).

3.11   Excel Templates

A very useful function is < XLTP >: **the Excel Template Library**. By entering this function and then < GO >, you will have access to several Excel templates that perform various tasks. First, you might find the template that suits your needs among the many available. Second, and more importantly, by studying the templates, and the Excel macros

behind them, you will learn how to combine Excel and Bloomberg, and how to build your own template.

3.12   Miscellaneous Functions

This section presents additional useful functions. As usual, it is recommended to try each of these functions on a Bloomberg terminal.

- `< MRUL >`: Creates rules for Bloomberg email and messaging service. This function is very useful to forward, for example, Bloomberg emails to a different accounts (e.g. gmail, yahoo, etc.).

- `< GRAB >`: to send by email an attachment.

- `< HELP >`: Type the function followed by the topic you need help with. Through this function, you can also access various short video tutorials.

- `< HDSK >`: This function opens the help desk. You can type your query, and almost immediately a Bloomberg assistant will help you find the answer. Note that Bloomberg offers live assistance 24/7.

- `< MAIN >`: This general function provides a list of the main functions you can use.

- `< USER ENHANCE>`: This function provides a list of the new features and improvements of Bloomberg. You can search within different asset classes (i.e., fixed-income, equity, mobile, etc.), job roles, area (i.e., buy-side or sell-side). You can also set alerts to be always up to date with new functions introduced to Bloomberg.

3.13   How to build and manage a financial portfolio

A great feature in Bloomberg is the management of a financial portfolio. Once a portfolio is properly saved in Bloomberg, it is very easy to monitor its performance, evaluate its risk, and test it under different scenarios. In addition, you can create a link between the portfolio and Bloomberg alerts, check relevant corporate news pertaining your portfolio, and you can also add the portfolio to the Launchpad for real-time monitoring. In particular, some of the main available features, distinguished according to the relevant time-horizon (i.e., past, present and future), are:

1. **past**

    - backtesting

- performance attribution

- historical performance

- historical risk

2. **present**

- real time profits and losses (P&L)

- portfolio news and alerts

- excel and pdf reporting

3. **future**

- tracking error

- value-at-risk

- scenario analysis

- trade simulation

- forward looking risk

 In Bloomberg there exist different solutions to enter and save a portfolio:

1. The standard starting point is the function < PRTU >, which stands for **portfolio administration** and is a "holding-based system", based on positions in different securities rather than transactions. Under this function, you can create your portfolio by entering the various components: i.e., quantity of cash and different securities and the corresponding dates (see figure 32). For each security, you will be typically asked the quantity (e.g., the number of shares you own) and the purchasing price. Alternative options let you insert weights, as opposed to number of shares. In order to add a security to your portfolio, you can enter the ticker, or the ISIN number in case you know it, or just the security's name waiting for the auto-complete to help you find the right ticker. Note that if you enter cash, you must enter the currency in place of the identifier, and remember that the cash quantity entered is multiplied by Bloomberg by 1,000 (i.e., if you enter $1,000 it means $1 million). Finally, note that if you enter securities by weights, rather than using the number of shares, you have the option to use "drifting weights", which vary over time to keep the relative market cap of a given security in your portfolio constant. This could be, for example, particularly useful if you are building a hypothetical portfolio that you plan to use as benchmark. For example, you can build a 60/40 portfolio, and use traded ETFs in place of market

indices if these are not available (or if your Bloomberg subscription does not contain all indices) to track the performance of a benchmark portfolio investing 60% in stocks and 40% in bonds. By using *drifting weights* you can be sure that your portfolio will maintain, over time, the desired 60/40 ratio. The example portfolio from figure 32 shows that Bloomberg displays the current price and market value, along the price and market value evaluated at the cost of investment. Finally, the last three columns report the change in value of the portfolio. In addition, note that you can change the currency denomination of the portfolio, and set short and futures margins.

Figure 32: Portfolio Administration

Notes: The image represents the Bloomberg portfolio administration window accessed using the `< PRTU >` function and opening a previously saved hypothetical portfolio.

2. An alternative function to build or update your portfolio is `< PTT >`, which creates **a trade ticket**. This is sometimes useful as, by default, Bloomberg computes portfolio's returns on a holding base. By using `< PTT >` we can create the transaction history, and compute the corresponding returns. For example, figure 33 reports the portfolio trade ticker for an hypothetical investment in the Apple stock. Once the trade is submitted, it will be sent to the desired portfolio. Note that using `< PTT >`, you can add the unit cost and the commissions.

3. Probably, the best way to create and update your portfolio is by combining an Excel file and the function `< BBU >`, for **Bloomberg uploader**. For example, we can first create an Excel file where you enter, in different columns, the security id, quantity,

Figure 33: Portfolio Trade Ticker

data classification, and portfolio name (see figure 34). Note that, for security id, using the ISIN is not the most efficient solution as the same security might be traded in different exchanges. Therefore, it is better to use the Bloomberg id: e.g., IBM US equity for IBM. The supported securities are equity (common shares, funds and ETFs), fixed income (corporate, government, ABS, etc.) and derivatives (futures, FX forwards, CDS, spot currencies). Then, you can simply drag the excel file in the < BBU > window, and map the Excel sheet and columns into Bloomberg (i.e., you need to tell Bloomberg which column contains the id, etc.). Note that when you use the Bloomberg uploader, the cash position must not be divided by 1,000 as for < PRTU >. It is possible to set up regular updates of your portfolio: Bloomberg will periodically check your Excel file (which must be saved in the computer which is logged into Bloomberg), and update your portfolio.

Note that once you are the "owner" of a portfolio, you can share it with other Bloomberg users (i.e., say, your team members). Once the portfolio has been created and properly saved, Bloomberg offers various useful metrics to evaluate its risk and performance. For example, the function < PORT > provides the **portfolio and risk analytics**, with information like the contribution to return of each component, the daily profits and losses, etc. Within the < PORT > window, you can also look at measures of risk like the value-at-risk (VaR) and the likely performance under different "stress" scenarios. Also, you can add benchmark portfolios. Additional useful functions that you can choose from once you are looking at a

Figure 34: Portfolio using Bloomberg uploader

Notes: The image represents an excel file ready to be imported in the Bloomberg uploader.

portfolios are:

- < NPH >: **portfolio news**. News related to the components of your portfolio.

- < PORT HP >: **historical performance**. Historical performance of your portfolio.

- < PORT OP >: **portfolio optimization**. This function allows the construction of an optimal portfolio given a set of constraints. It also allows for backtesting the performance of the portfolio.

- The option "portfolio look through" is particularly useful if you have funds in your portfolio. In this case, you can "open up" the funds and visualize all the assets you have invested in *through* the fund.

At the time of the last update of these notes, Bloomberg is offering as a "beta" feature upon request the possibility to associate a ticker to your portfolio, so that by all means the portfolio becomes like a security. This could be very useful to *tickerize* the portfolios, for example, to apply to a portfolio all the functions we can typically apply to a security.

4 Using Bloomberg with Excel
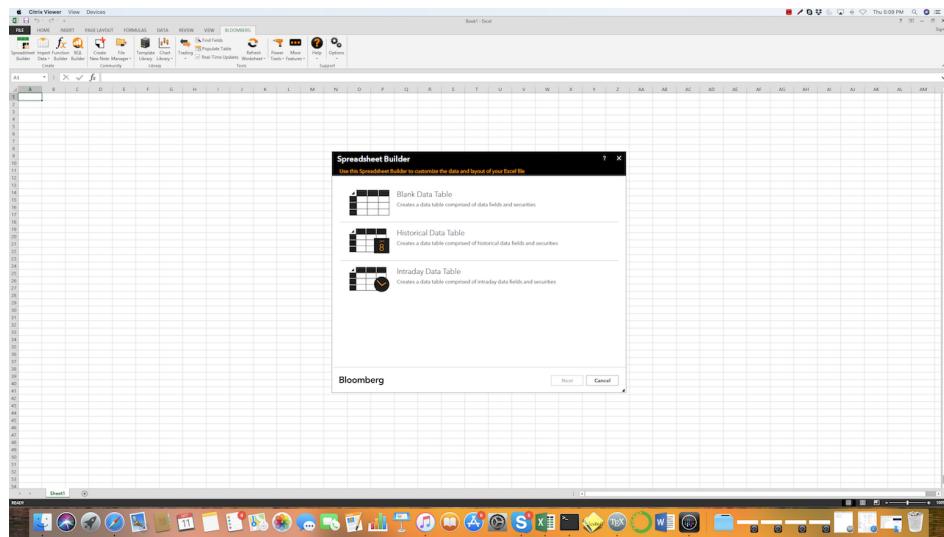
It is very likely that you will need to download data from Bloomberg to Excel in order to perform data analysis, to use the data with additional statistical and econometric software

and packages, etc. Importing data to Excel is very simple using the Excel Bloomberg add-in. In this primer, I focus on importing "historical end-of-day" data using the Bloomberg Spreadsheet Builder. When you open Excel, go to the Bloomberg tab first, and then choose "Bloomberg Spreadsheet Builder". A wizard, reported in figure 35, will open. The options are "blank data table", "historical data table", and "intraday data table". Figure 36 describes the Excel wizard after having selected, for example, "historical data table". At this point, you need to select the securities in which you are interested in. You can either select them manually, using the search field. In this case, as usual, type only the first letters of the security of interest and an array of options will pop-up. Alternatively, you can drag-and-drop Bloomberg security identifiers directly in the right box of the Excel wizard titled "selected securities". For example, suppose that you are interested in the historical data on all the members of the Dow Jones Industrial Average Index. In this case, you can first use the function < INDU Index > and then < MEMB >, as described in section 3.8, to obtain the list of the Dow's members. Then, you can directly drag the small Excel icon that you will see in the Bloomberg Terminal window to the Excel spreadsheet builder wizard. In no time you will have loaded all the 30 securities forming the Dow in the Excel wizard. After having selected the securities, importing the data to Excel is straightforward. First, you will have to select the data type (for example, last price or PX_LAST). Also for the data type selection, if you do not know the right data type name in advance, simply type the first letters and an array of options will pop-up. Second, you will have to select the data range. Third, you will have to select the desired excel layout. Note that the Excel file is able to import the historical data using a macro. By examining your excel file, and with some practice, you will be able to understand and modify directly the Excel macro using excel functions working with the Bloomberg add-in. For example, the standard function to import historical data is called BDH, and requires several inputs, including the Bloomberg identifier, requested data type and range.

5   Conclusions
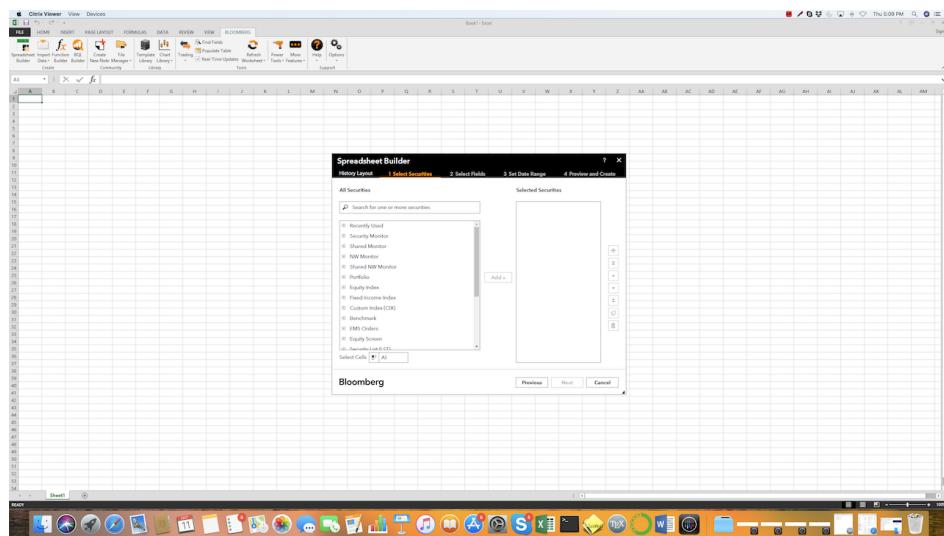
This objective of this primer is to give readers a quick overview of the many functions in Bloomberg to be able to use a Bloomberg Terminal in no time. Over the years, Bloomberg has become a must-have instrument for people working in financial markets. Needless to say, mastering Bloomberg will require time and passion and interaction with many colleagues and friends.

Figure 35: Bloomberg Spreadsheet Builder (1)

Notes: The image represents the Bloomberg spreadsheet builder (first step).

Figure 36: Bloomberg Spreadsheet Builder (2)

Notes: The image represents the Bloomberg spreadsheet builder (second step).