Bloomberg Market Concepts - Module 5

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Terminal Basics: Using the Terminal

Introduction

The Bloomberg Terminal was imagined and engineered almost 40 years ago. Started in 1981, Bloomberg is a forward-looking company focused on building products and solutions that are needed for the future. As a global information and technology company, Bloomberg connects decision makers to a dynamic network of data, people, and ideas—accurately delivering business and financial information, news, and insights to customers around the world. Bloomberg empowers people to make critical, transparent, and informed investment decisions. Taking full advantage of the Bloomberg Terminal starts with understanding the overall structure of the system. In the next few minutes, we will introduce you to the Bloomberg keyboard, how to use the command line to search for Bloomberg applications and securities, menus to help you navigate the thousands of available analytics, and how to get help.

Logging In

First, let's create a login by double clicking on the Bloomberg icon on the computer desktop, then on the blue text to begin, and finally on "Create a New Login." Then follow the prompts. Welcome to Bloomberg! You have now joined a global community of more than 385,000 financial professionals. Now that you have a login, you also have a Bloomberg email address. Just add `@Bloomberg.net` to the end of your auto-generated login name. For example, if your login is `JKIM35`, your Bloomberg email address will be `JKIM35@Bloomberg.net`. Let's get started.

Panels

Notice that you have four Bloomberg windows—or panels. Each panel has a toolbar, command line, and function area. You can run Bloomberg functions in these panels. Functions are individual applications that provide targeted information and analysis on either the broad financial markets or on a specific security. All panels work the same, so you can multi-task and run several functions at once.

Keyboard

One of the hallmarks of the Bloomberg Terminal is its unique keyboard. You can execute the same actions with a regular keyboard, but you'll notice the Bloomberg keyboard is color-coded for more efficient navigation. The keyboard provides red stop keys, green action keys, and yellow market sector keys. To understand what each key does, you can type "help" into the command line and press Enter or `<GO>` on the keyboard. The Escape key exits the current function. The Go or Enter key executes a typed command and also confirms changes made on a screen. The Menu and End keys can close popups, return you to a previous screen, or open a menu depending on the workflow. The Help or F1 key opens a user guide for the current function, and pressing it a second time allows you to connect with Bloomberg support. The Message key is used to send and receive messages, while the News key shows the day's top news. The Search key lets you find information across the Terminal, and the Panel key helps you switch between the different Bloomberg panels. In the next few minutes, we'll use many of these keys in our navigation.

Finding Information

The Terminal gives you two main ways to find information. The first is the command line, where you can enter commands or search the system. The second is the menu system, as we just saw, where you can browse all Bloomberg functions, organized by asset class and common activities.

Let's start at the command line. Say you want to find data for equity indices. As you start typing key words, Bloomberg's autocomplete suggests potential functions and securities. From here, you can select a function to start your analysis. For example, the World Equity Indices function shows a snapshot of real-time, global equity index performance. You can also use the command line to run a specific function. When we started typing "equity indices" earlier, Bloomberg's autocomplete appeared. Each function has a mnemonic (short name) used to identify and access the function quickly. You can always enter a mnemonic in the command line and hit Enter or `<GO>`. Let's type "WEI" and hit the green `<GO>` key. Once again, here's the World Equity Indices function.

We just used the command line to run a function, but it can also get you to information on securities. First, you'll need to load the security you want to analyze. Start typing a company name and a list of security matches appears in the autocomplete. In the first security listed, we see the stock ticker (GE) and the country in which the company is listed (U.S.). If we select the company with the Equity label, we will pull up the company's stock. If we select the company with the Corp label, we will pull up the company's debt. When you select GE's stock, the security loads, which you can see in the gray toolbar. When you first load a security, you'll see this menu with functions you can use specifically to analyze that security. These are called security-specific functions. For example, with the GE stock loaded, you can run the DES, or Description, function. The information in this function only applies to the loaded security. Now you know how to use the command line to search and run functions and securities. The entire Bloomberg Terminal is discoverable from the command line. Above the command line, we see three gray buttons. The first gives a reference for the past securities loaded. The middle button shows recent functions run. And the third button allows you to navigate the Terminal via Bloomberg's menu system.

Let's look at how menus can help you by clicking on the Related Functions Menu button. If we click on the white house icon, we'll start at the Main Menu, a home page for all Bloomberg solutions categorized by functionality. We were looking for information on equity indices before. This time, let's browse the menus to see what's available. Notice you have a menu for each Asset Class. Start with the Equities menu. Now notice that once in Equities, you also have a menu to analyze the security you have loaded in the toolbar. In the Equities Menu, we found WEI again. Once you are working with a function, you can hit the `<Menu>` key, as we saw earlier, to find a menu of related functions. From here, you can always get back to the Home menu, and clicking Cancel on the menu gets you back to the function. Now you know how to use the command line and menus to find functions and securities on the Bloomberg Terminal.

Getting Help

Now let's look at how to get help. We can use the command line and the F1 key to ask a question. To explore equity indices, we can enter "How do I find equity indices?" into the command line and press the F1 key. Bloomberg's Best Answer algorithm spotlights the information that best matches our search criteria. We can either open WEI or, if we are uncertain, open the FAQs to see the most popular questions and answers related to our query. In this case, we'd choose the first option. Let's click on WEI. Now that we're working with WEI, we want to know what the 2Day columns indicate. Just hit `<Help>` or F1 on the keyboard once to get a user guide for that specific function where we can search for answers. In this case, in the "What Is WEI?" section, we can click 2 Day Columns to see that they represent recent equity market performance for the selected index. And if we still have questions, hit the `<Help>` key twice to ask the Help Desk a question. You can review the basic navigation at any time by typing HELP and pressing `<Go>`. Now you have the tools you need to embark on your Bloomberg journey.

Terminal Basics: Analyzing the Market

Introduction

Before making decisions about how to interact with the market, we need to understand the market from a big-picture perspective. Key market trends, like political turmoil, impact the perception of risk from investors, and therefore the market's performance.

Jeffrey Talpins's Element Capital Management made money in spring 2018, as markets were roiled by the political turmoil in Italy. Precisely, his $14 billion macro hedge fund rallied 4 percent in May. He did it by protecting these funds against rising stress and volatility in the euro area. How could he have predicted that? Others, like Field Street Capital Management, lost money. According to a source, Field Street's losses, the worst on record for its macro fund, halved the size of that fund to about $110 million.

In the next few minutes, we will take the role of a macro hedge fund manager using the Terminal to navigate through such turmoil. We'll explore how to monitor a relevant macro event in the market and see how the perception of a new election disrupted the global markets.

We will explore how to interpret the market through the story of the March 2018 Italian elections. We will introduce functions that show how the global market performs, the context of its movements, key macroeconomic events that also potentially move the market, and Bloomberg's unique expert research on industries, companies, countries, and more.

Global Macro Movers (GMM)

How were the markets affected by the prospect of new elections in Italy? Let's start by typing "macro" into the command line because we are looking at a macro event. We'll see the Global Macro Movers or GMM function, which you may have seen beside our anchors on Bloomberg News. It ranks the biggest moves across global financial markets since the start of the day, as shown here, or for a particular date in the past.

Let's go back to the 29th of May 2018. We'll click on MTD, select Custom Date and Time, and fill out the amber fields. In this example, we are in the Central European time zone and looking at the performance of the markets from midnight to 5 p.m. And let's press Update.

We can select the markets we care about in the top left amber field. Here, we are focusing on G20 countries.

We see that this was a bad day for Italy. What happened? Let's investigate.

Country Guide (COUN) & Price Chart (GP)

We'll start with the main Italian stock market by hovering over the Italy FTSE Equity Indices equity tile, right clicking, and selecting COUN. The Financial Snapshot tab of this Country Guide gives us an overview of the country's financial markets as of the day this video was captured. On the left side of this screen, we see asset class sections: equity, rates, and FX. At the bottom is top news for Italy. The Price Chart at the top right shows the price movement of the main equity index. Let's click on it to enlarge the chart.

By default, Bloomberg displays prices for the past year. We see that the equity market collapsed 13% from May 7 to May 29. You can discover this yourself by using the chart's Annotate feature, clicking the % Change icon, and selecting the dates for the largest decline in the past year. We can now see that 13% drop.

Country Guide (COUN) & Graph Curves (GC)

Let's hit the Menu key to go back to the COUN Country Guide page. Now we'll click on Yield Curves to see the Italian Sovereign Yield Curve, the Italian government curve, the risk-free rate for Italy. The curve chart illustrates the real-time and historical curves of our choice. The right sidebar allows us to choose our

curves and the yields or spreads/ratios we want to plot on the y-axis. It also lets us monitor, analyze, and compare securities and curves. For single curves, the lower chart displays a table of rates for each tenor, so we can quickly review the values from the graph.

By default, we see the yield for the day of recording, so we need to go back in time. So let's click the Modify button to show the curves from the specific dates of May 7th and May 29th. And click Close. As you can see, the 2-year bond shifted 300 basis points, which is notable for a G20 country in a three-week window.

Wouldn't it be great to see how that change happened in that short a time? We can see it by double-clicking on the 2-year bar. This takes us to the Graph Curve Tenors, or GCT, function, which allows us to plot the values of curve tenors over time.

The graph defaults to the last month, so let's go to Custom to put in our dates again and click Close. Now we can see that the 2-year yield changed from –0.3% to 2.7%. The chart shows us the magnitude of the change. Previously, in the yield curve chart, we saw the total amount of change. Here, we can see how the change happened in that 3-week period. You'll notice that the majority of the 3% change happened in less than a week.

Let's calculate the net change from May 24 to May 29. How do you think we should start?

Graph Curve Tensors (GCT)

Now that we've clicked Annotate, let's click the Net Change tool. To see the net change between May 24 and May 29, we can drag the mouse from the first date to the second. The Italian 2-year rate moved 2.4453% in the space of five days. Over 80% of the change happened in the span of those few days!

When we were exploring the equity tile for Italy on GMM, we saw how Italy's stock market and government yield curve reacted to the prospect of new elections in May 2018. Was there any contagious effect to other southern European countries?

Global Macro Movers (GMM)

Let's go back to GMM, the Global Macro Movers function, and search for May 29, 2018, to take a look at the other tiles. As before, this page defaults to the day we captured the screen, so we need to format the dates to see the same display we saw earlier. Why don't you give it a try?

World Bonds (WB)

Now that we're back on May 29, let's take a look at the fixed-income market and hover over the 2-year Italian Sovereign Bond tile. This time, we'll right click and choose WB for World Bonds to see the historical bond spreads. On the left, we see sovereign details; in the middle, we see intraday data; and on the right, we see historical data.

Let's use this historical data to explore the changing opinions of Italy's riskiness versus Germany's relative safety. First, let's click the second tab, Spreads, and change the Maturity to "2 Year." Then we'll change the country in the Sell amber field from "United States" to "Germany."

As of the date the screen was captured, we can see that the 2-year bond spread of Italy versus Germany is 143.8 basis points, or bps. And in the last three months, the highest spread was 340. Let's click on the chart to see when that happened. It was May 29!

Let's add other southern European countries' spreads to this chart to see how similar nations have performed against Germany in the same time period. We'll click the chart icon for Spain and Portugal to add them to Italy's chart. We can use the Track feature to see that they all peaked at roughly the same time, but Italy's

spread was the most dramatic, suggesting that the Italian situation had a ripple effect.

Now that we've seen the main moves in the market, we can find out the origin of the moves by examining the news. We know the markets moved; let's find out why.

Top News (TOP)

Let's close the chart, type "news" into the command line, and select Top News to see the major stories of the day. Here we will find the major news that drives the global markets for the current day. However, we want to dig deeper into any stories written on Italy around May 29, 2018. Let's change what we wrote in the command line to be more specific. What would you type? Let's try "News on Italy on May 29 2018," and press Enter.

Let's take a look at the first article under Background & Opinion, the QuickTake. As the name suggests, QuickTakes are Bloomberg's one-page guides to current news topics. This QuickTake tells us that Italian elections happened on March 4th and a populist government was elected. Let's go back. What's one way to do that? Let's click the `<Menu>` to Return button.

The third story is by Princeton professor and deputy director of the International Monetary Fund Ashoka Mody. It states that with "3% interest rates and an annual inflation running at only 0.6%, that amounts to a real interest rate of more than 2 percent" and "such high rates will choke the economy." What can you click to go back to the news page?

Bloomberg QuickTakes (QUIC) & Opinion (OPIN)

The second story, by Bloomberg editor Robert Burgess, tells that as the price of the Italian bonds plummeted, the interest rates rose to 3% on concern that the nation might be gearing up to leave the eurozone. Investors complained that they couldn't sell their bonds due to lack of liquidity. Through Bloomberg news, we were able to identify which macro event was rattling the markets in Europe.

If you are interested in more QuickTakes, you can type "QUIC" into the command line. If you'd like to see more editorials, use the OPIN function.

Now let's go back to our story and check if there were key Italian economic data being released on May 29 that could've contributed to the big market movement.

Economic Releases (ECO) & Economist Estimates (ECOS)

Let's type "economic releases" into the command line and select ECO, Economic Calendars. Here, you can customize the calendar according to the countries or region you're interested in and the types of economic releases or events. Let's change the country from "United States" to "Italy," change the date range from and to May 29th, and press Enter or `<GO>`.

Let's make a few more adjustments to our screen so that we can fully appreciate the impact of the economic releases. We'll go to Settings and Add/Edit Columns. Let's find Surprise Value of Release in the Available Columns and add it to the Displayed Columns. Then we'll move it up before Economist Survey Median, the economists' estimates. And finally, let's also move Revision, which is the revised data for the prior release, next to Actual Release, and then click Save.

On that day at 10 a.m. Italian time, the Consumer Confidence Index came out over four standard deviations below expectations for May, from the expected 116.5 to the actual 113.7. We can right click on the surprise number and select Economist Estimates, the ECOS function, to see how far the estimates were from the actual number.

Let's see how the bond market reacted to the lower Confidence Index level at the time of the release.

We'll use the command line and type "Italian 2 year bond." Under securities, we'll choose the Generic Italy 2 Year Government Bond because we want to look at a historical yield. The word "generic" in a bond's title means that it displays the history of the yield for the specified country and benchmark treasury tenor.

Recognize the security menu that pops up? We want to chart the yield of the bond. Which white header should we select to get to it?

Intraday Yield Chart (GIY)

Now let's find an option to help us to chart an Intraday yield. In the Yield Chart/Tables section, we'll choose Intraday Yield Chart.

Let's change the dates from May 28 to May 30, 2018, and press Enter to see how the bond market reacted to the Consumer Confidence Index level release. We'll use the Track chart feature and place the crosshairs on the line at 10 a.m. We can see the yields rising (and thus prices falling), closing on May 29th at 2.7125%.

As we saw in the Robert Burgess article, Italy has over two trillion euros outstanding debt and their cost of borrowing for two years has jumped 2.44% over five days. How can we find Italy's outstanding debt on the Terminal? Let's type "Italian outstanding debt" into the command line and press the F1 key. As of summer 2018, it's over 2.3 trillion euros. Incidentally, Italy decided to issue 10-year bonds the day after on May 30th. The question is, at what price? How much more did they have to pay to attract investors?

Economic Calendars (ECO) & Economic Release Details (ECOD)

How do we see the last auction bonds on May 30th? Let's go back to ECO. This time, though, let's type the function name followed by the country—ECO ITALY—and press Enter to select the first result on the list.

First, let's change the second amber field from Economic Releases to Government Auctions. And again, we'll change the dates, but this time to May 30, and press Enter. We can see that on May 30th, the Italian government had to pay 3% to investors to sell their 10-year bond versus 1.7% on April 27th.

How did we know that the prior date was April 27? We can reveal it by clicking on the 3% number, which opens a new page—Economic Release Details—showing the 10-year auction average yield since 2008. If we put our mouse where March 2018 should be and drag the axis to the left, we can expand the chart to see that the release before May 30 was on April 27 and the yield was 1.7%.

We have learned about the political climate through news and about the key economic data releases through ECO. Now let's complement our understanding of the Italian macro story with the research performed by Bloomberg economics analysts.

Bloomberg Intelligence (BI)

Let's type "Bloomberg Intelligence" into the command line and select BI. Then we'll choose Economics in the Topics section on the left. Here we can see previews, reactions, and insight pieces around major data releases and events, categorized by geographical region and written by Bloomberg analysts.

Let's select Italy from the list of Regions/Countries on the left. Let's click on the country primer in the middle, and take a look at the key macro themes affecting Italy. As of May 11, 2018, Bloomberg Analysts warned the market that political uncertainty will probably continue to constrain growth, and that a rapid rise in bond yields could even send the country into a financial crisis. Let's hit Menu to go back to the Italy menu screen.

On the left, we'll see a Data Library folder that will provide us with a deep macro and sector analysis. Let's click in the Macro section and scroll down for all key economic statistics for Italy. And look, we found the Consumer Confidence Index. As we saw earlier, the May number was not only a shock versus what the market expected, but it also dropped from 117.0 in April to 113.7 in May.

Now that we're more comfortable exploring what's happening in the wider markets, we can dive into individual securities, like fixed income and equities.

Summary

So what did we learn how to do on the Terminal through the Italian story? We learned essential skills, such as how to use the command line, navigate the menus, use the Menu key, and operate the search field. We also learned how to manipulate amber fields, customize screens using settings, and configure a screen for a specific historical date. Additionally, we explored how to chart yields and manipulate various charting tools.

Beyond technical navigation, we explored how to use Bloomberg functions to analyze the market. This included understanding how the global market moves, the context of those movements, and identifying key macroeconomic events that potentially drive market shifts. We also saw how to access Bloomberg's expert research on industries, companies, countries, and more.

Now that we've developed these skills, which functions would you use to explore what's happening in your own country? Is there political turmoil? Are rising interest rates in another country impacting your economy? Use the macro functions we've covered to form your own informed opinion.

Terminal Basics: Exploring the Equity Market

Introduction

Are you good enough at picking stocks to beat the market? Not too many people would claim that.

Tom Keene commented on this by referencing an iconic mutual fund not managed by BlackRock that has a 92% correlation to the S&P 500. Despite that correlation, the fund didn't beat the S&P last year, and its Sharpe Ratio also underperformed. Keene questioned why he was even in an active fund, raising the broader issue of the passive vs. active investing debate after another strong double-digit year for the S&P.

Rupert Harrison weighed in, arguing that active managers need to prove their value for money. The pressure isn't only from clients—regulators are also scrutinizing index-hugging active funds. In particular, the FCA is focused on ensuring that funds deliver actual performance. Since clients can easily shift to low-cost, flexible passive options, active managers must justify their fees. Harrison noted that even at BlackRock, which offers both passive and active funds, the internal debate centers on proving the value added by active strategies.

To deliver higher returns than a simple passive strategy and justify the management fees of an active investment approach, you must have deep knowledge of your industry and individual companies. Strong due diligence is essential to ensure the portfolio outperforms its benchmark. Finance professionals rely on Bloomberg to support their efforts to beat the market.

Equity Functions

In the next few minutes, we will show you how to screen for stocks, investigate company overviews, and research a company in depth. You'll learn how to explore a company's fundamentals and estimates, compare it to its peers, examine analyst recommendations, perform technical analysis, and download data into Excel.

Let's get started. How can we screen for stocks using an active investment strategy?

Stock Screening (EQS)

Let's start by going to the Related Functions Menu's home page and selecting Equities. We'll explore the Idea Generation section and screen for companies by selecting Equity Screening, or EQS, which allows us to screen stocks based on a customized set of criteria.

The Equity Screening tool is divided into several sections: My Recent Screens, Popular Screens on the left sidebar, Screening Criteria, Add Criteria, and Selected Screening Criteria. The quickest way to search is by using the amber Add Criteria field. With over 70,000 publicly listed companies available, we begin by applying filters to narrow our search.

Suppose our investment mandate is to identify profitable large-cap growth companies. To locate those on EQS, we can use one indicator for profitability and another for company size. First, we type "gross margin" into the Add Criteria field, choose the field from the dropdown, set the filter to "greater than 25

Another strong profitability indicator is Return on Equity. We can type "Return on Common Equity" into the Add Criteria field, select it from the dropdown, set the threshold to "greater than 25

If we want only the top ten companies by market cap from this group, we can add a different criterion. We type "Market Cap" into the amber field, select it, and then choose "Rank" instead of a numerical filter. We leave the Sequential field as-is, enter "10" after Top, and this will return the ten largest companies among the 1,583. To ensure comparison is consistent, we also change the currency from Local Currency (LCL) to USD before pressing Enter.

Watchlist Analytics (WATC)

Now let's look at which companies met these criteria by clicking on See Results. The companies appear on the Watchlist Analytics, or WATC, function.

Before we go any further, let's save this search by clicking on Actions at the top and selecting Save Screen. We'll call it "Large Cap Growth," press Enter or <GO>, and then click Save.

We are now in the Results tab, where the companies on the screen are sorted according to our first profitability criterion: GM LF, which stands for Latest Filing for Gross Margin.

Which of these companies should we explore? Let's click on the Overview tab and sort our company names based on their potential one-year return as defined by Wall Street analysts using the Exp Return column. When you hover over the header, a definition appears explaining that this column shows the consensus analyst target price versus the current stock price.

When we click the header, we can see that, as of July 20, 2018, Tencent Holdings rises to the top.

Description (DES)

How can we learn more about this company on Bloomberg? Let's take a closer look by clicking on the name to open a menu. We'll start with a company overview and select DES, or Security Description. This application is typically the first place to go to learn about a company. Here we see that Tencent Holdings Limited is an investment holding company that provides Internet and mobile value-added services, online advertising services, and e-commerce transaction services. As we can see in the top right, the industry classification is Application Software.

What else can this function show us? Notice we have tabs along the top and menus to explore. If the menu header has a number in front of it, we can click on it for more information. Let's take a closer look at the Price Chart, or GP, section. We know that over the past 52 weeks from the date of recording, the stock hit a low of 295 and a high of 476.60, with a year-to-date return of -7.24%. Is -7.24% a bad result for the

stock? It depends on how Tencent has compared against the overall market. Has Tencent outperformed or underperformed the market?

Graph Price (GP)

Let's find an appropriate index to add. We begin by going into the Issue Info tab to see which index Tencent is a member of. Tencent represents 10% of the Hang Seng Index (HSI), which is the main index for the Hong Kong market. We then return to the Profile tab and click on the Price Chart header to launch a stock price graph using the GP function. GP allows us to apply a range of analytical tools, including technical indicators, fundamental data, news, and events to examine market behavior over both intraday and historical periods.

Next, we open the Chart Content panel. To add the HSI index, we type "HSI" into the amber field and select it from the dropdown list. To better understand which security has performed better over the last year, we change the "Normalize by" field to "Percent Appreciation." This normalization adjusts data across different scales to a common baseline, making it easier to compare. Percent appreciation displays price changes in percentage terms.

Now let's compare Tencent's performance to the HSI index over the last 12 months and year-to-date. The "last 12 months" and "year-to-date" refer to the timeframe when the screen was captured, but we can change the dates manually. Over the past year, Tencent (white line) outperformed the HSI (orange line), with a return of 27% compared to 6%. However, for year-to-date performance, HSI slightly outperformed Tencent by 1.6%, even though both posted negative returns. Let's record these observations about Tencent and begin listing our findings.

As noted earlier, we can chart any relevant data point. For instance, to find when Tencent last paid dividends, we type "dividends" into the amber field, select it under "Event," choose only Tencent, and click Update. In this case, the last dividend was announced on March 21, 2018.

We can also overlay headlines by clicking on the news box. Let's close the Chart Content and look at our updated graph. A notable headline appears: as of early July 2018, Tencent was planning a U.S. music IPO. We'll add this to our list. Now we'll click the arrow in the top left to return to the graph view.

Let's say we're now satisfied with our analysis of Tencent's price performance and wish to investigate additional company information. We can use the same back arrow to return to the Company Description page. In the Profile tab, we'll also find the BICO section, which contains company research. Clicking it reveals proprietary insights and the main business drivers, as analyzed by Bloomberg, using both company-specific and broader industry data.

Bloomberg Intelligence Company Primer (BICO)

The Bloomberg analysts at the top of the screen track the selected company and identify various relevant issues, from credit outlooks to litigation or government actions, that could influence the company's performance. So what issues might affect Tencent? A recent update at the time of this recording shows that Tencent dominates China's online social networking space. Ad sales could grow rapidly due to the high engagement levels of WeChat's one billion users and the currently low utilization of its social ad inventory.

We can click on "Ad Growth" at the top of the screen to see why analysts believe ad sales may rise. Bloomberg analysts estimate that mobile internet users in China spend more than three times as much time on Tencent apps compared to those of competitors like Alibaba or Baidu—and this gap is expected to grow.

What is the total revenue Tencent currently earns from ad sales? To find out, we can examine the company's financials by typing "financials" into the Bloomberg command line and selecting the Financial Analysis function, or FA.

Financial Analysis (FA)

The FA function provides comprehensive financial information for a company or equity index, including both historical fundamental data and forward-looking estimates. We can change the ACCT, or Accounting, field to "Mixed" in order to view both reported values and projections. This gives us access to the company's past, present, and future financial data as of the time of recording.

For example, we can observe that Tencent's revenue in 2017 was 237,760. But is that in millions or billions? Bloomberg pulls this figure directly from Tencent's annual report. Bloomberg collects public companies' annual reports and automatically feeds the data into the Financial Analysis function shortly after their release.

To retrieve the original source document, we can click directly on the revenue number. By opening the boxes and clicking the advertising document icon, we confirm that Tencent's total revenue in 2017 was 238 billion renminbi, with 40 billion coming from online advertising. The FA function enables this level of transparency, and it can also be accessed through Excel.

Has revenue from online advertising increased as BICO predicted? By clicking the back arrow twice, we can return to the main interface and navigate to the Segments tab. There, we click the chart icon for Online Advertising to review historical trends. The data shows consistent growth: advertising revenue increased from less than one million in 2008 to 40 billion in 2017. By using the Annotate and % Change features, we can see that online ad revenue has grown at an average annual rate of 54%.

With so many available data points in the FA function, how do we know where to focus our attention? How exactly can the Terminal help guide us?

Key Insights (KI)

We have to use artificial intelligence, and Bloomberg has a function just for that called Key Insights! When we type "insights" into the command line, we can select Key Insights, or KI. This application presents the most relevant company facts in an easy-to-read feed. It uncovers deep content from throughout the Bloomberg Terminal and informs us whether each insight is likely to have a positive or negative impact on the company.

Let's click on the Fundamentals tab to see what insights Bloomberg has uncovered. By clicking on one insight, we learn that Tencent's gross margin was 340 basis points (or 3.4%) above consensus for Q1 2018. This might be viewed positively. However, it was also 350 basis points (or 3.5%) below what they achieved last year, which could be interpreted negatively. Because of this ambiguity, Bloomberg's algorithm assigned this insight a gray diamond—indicating mixed sentiment—rather than a red arrow for negative sentiment or a green arrow for positive sentiment.

Company Profile (CP) & Company News (CN)

The Key Insights function can also be accessed from within the Company Profile function. Let's open it through the Related Functions Menu. Company Profile, or CP, serves as an information dashboard that provides access to a wide range of valuation metrics and financial data about the company.

To dig deeper into the company, we can click on the News & Activity section. This section highlights only high-relevance news and provides the corresponding Bloomberg function for company-specific news. We click on Company News, or CN, and then expand the Background & Opinion section to see what analysts and journalists are saying. One example is the article titled "Tencent Opens the WeChat Spigot, Just a Little" by Tim Culpan. Let's read the article and consider what key takeaways should be added to our Tencent research notes.

We'll add to our research notes that, according to the chart, Social now accounts for 70% of Tencent's revenue. We'll also note that WeChat increased its ad load to only two ads per user per day in March,

suggesting there is still room for further growth.

Now let's use the back arrow to return to the Company Profile and learn how Tencent compares to its peers, such as Alibaba and Baidu, by clicking on the Comparables section.

Relative Valuation (RV)

P/E, or price-to-earnings ratio, is a widely used indicator for comparing companies. Let's sort Tencent's competitors by P/E FY1, which represents the estimated price-to-earnings ratio for the upcoming fiscal year. How do we know this? We can hover over the column header, right-click, and select "Show Definition." Tencent's P/E FY1 is 36.5x, which is higher than both Alibaba and Baidu. This could suggest that the stock is currently overvalued.

To expand our analysis, we'll use the Relative Valuation function, or RV. This allows us to compare Tencent with its peers across additional metrics such as return on equity (ROE) and gross margin—both of which we referenced earlier in our equity screening process.

The RV page displays multiple types of data. On the left-hand side, we can view the segments Tencent operates in, along with corresponding Bloomberg Intelligence coverage. In the upper-right corner of the screen, we see key industry metrics that compare Tencent, represented in blue, with its peer group, shown in red. At the bottom, tabs and sub-tabs provide more granular peer performance data across various measures.

As mentioned earlier, we want to explore ROE and gross margin in more depth. Starting with ROE, we find that Tencent has the highest return on equity. Then, by switching to the Comp Sheets tab and selecting the Profitability sub-tab, we can view the Gross Margin column. Sorting by this field shows that Tencent ranks on the lower end compared to its peers.

To better understand Tencent's P/E ratio, we need to determine whether it's typical or an outlier. We go to the Related Functions Menu and, under "Analyze Tencent Equity" in the Comparative Analytics folder, select Equity Relative Valuation, or EQRV. This tool helps us evaluate how this and other valuation multiples have performed historically.

Equity Relative Valuation (EQRV)

EQRV allows us to evaluate whether a company is fairly valued relative to its peer group, based on its historical performance on selected multiples. We can also use EQRV to compare a company's current multiples to its own historical trends.

Let's examine the blended forward price-to-earnings (P/E) ratio, or BF P/E. This measure is helpful when comparing companies with different fiscal year reporting dates. For example, Tencent publishes its annual report in December, while Alibaba reports in March. The blended forward P/E normalizes reporting so we can compare the next four quarters as if they were aligned.

Tencent's BF P/E ratio is 30.9x compared to the peer average of 28.1x, resulting in a 10% premium. This means investors are paying 10% more for Tencent than for its peers. But is that normal? Or has something changed to justify this higher valuation? To find out, we need to examine how this premium compares with historical values over the past two years.

Let's compare the current 10% premium to the two-year historical average premium of 18%. Is this difference meaningful? On the Historical Premium Range Chart, we see that Tencent's premium has ranged from a low of 7% to a high of 35%. The 10% premium is significantly lower than the historical average of 18%, suggesting Tencent may currently be undervalued, especially considering investors have willingly paid much higher premiums in the past.

Looking at the numbers on the RV screen doesn't give us the full context. EQRV helps by calculating an implied fair price using historical multiples. As mentioned earlier, the peer average P/E is 28.1x. Let's open the Implied Historical Average section, where we see a box labeled Implied Multiple and Price Transparency. If we add the historical 18% premium to the 28.1x average, we get an Implied Multiple of 33.2x.

Given Tencent's blended forward earnings of 10.52, and using the Implied P/E of 33.2x, we calculate an Implied Price of 349.26 CNY. That's higher than the Current Price of 325.04, suggesting that Tencent might be undervalued from a blended forward perspective.

As noted during our earlier equity screening, Tencent had a potential upside of 37.2%. Let's now explore where that figure came from and what drives that upside estimate.

Analyst Recommendations (ANR)

Let's return to the Company Profile (CP) and click on Analyst Ratings. This screen features two key functions: Analyst Recommendations (ANR) at the top and Peer Ratings (PBAR) at the bottom. From our earlier slide, we saw a 37.2% potential upside. To calculate that, we subtract the most recent stock price (Last Px) from the 12-Month Target Price, yielding a difference of 140.11. Dividing that spread by the Last Price gives us 37.2%.

Next, we expand the Analyst Recommendations function by clicking ANR to view who issued Buy recommendations and their respective price targets. At the top left of the screen, we learn there are 51 ratings—and all of them are Buys. The average target price is 516.71 HKD, compared to a current price of 376.60 HKD.

In the top right of the screen, we see a chart that synthesizes this information. Histogram bars reflect analyst sentiment—green for Buy, yellow for Hold, and red for Sell. A white line represents the 12-month target price, while the yellow line marks the stock price. At the bottom, a price spread shows the difference between those two lines.

Interestingly, while the stock price (yellow line) dipped, the target price (white line) held steady. As of this recording, the spread between the 12-month target and current price is the widest it's been in several years. This suggests a divergence between investor sentiment and analyst expectations. Who's right?

Let's add this data to our research notes.

We've now seen that the implied price from EQRV indicates the stock may be undervalued. The 12-month target price from ANR reinforces this. To enhance our understanding further, let's introduce a third perspective: technical analysis.

Technical Analysis (TECH)

Let's type "Technical Analysis" into the command line and select the TECH function. This tool centralizes access to all types of technical analysis studies, including those created by the user, provided by third parties, or shared within an organization. The most popular indicators appear in the "Popular" section.

To learn more about an indicator, simply click on its name. For instance, clicking on "Moving Averages Convergence/Divergence" (MACD) displays a description in the right-hand panel. For further detail, we can click on "More" and scroll through the content. A link at the bottom takes us to the Interpretation section, where we can understand how the indicator generates buy and sell signals.

We can type the mnemonic "TECH" into the command line at any time to return to the full list of studies. With so many to choose from, which indicator should we apply to Tencent? Which one has historically produced the best buy and sell signals?

While Bloomberg can't predict the future, it does show which technical indicator historically yielded the most effective buy and sell performance strategy over a selected time period.

Basic Backtesting (BTST)

Let's explore more Technical Analysis features in Bloomberg. From the Related Functions Menu, we navigate to Technical Research Tools and select Basic Backtesting, or BTST. This tool allows us to evaluate how different trading strategies would have performed using historical data. Since we don't yet know which technical indicator would have generated the best buy and sell signals for Tencent, we'll use backtesting to investigate.

Bloomberg will identify the most profitable indicators and compare them to a simple Buy & Hold strategy—where an investor purchases the security at the beginning of the period and holds it until the end. In this case, the Buy & Hold strategy would involve purchasing Tencent stock at its IPO on June 16, 2004, and holding it through the day the screen was captured.

We start by using the default Daily setting and press Enter to view short-term performance. Clicking on the Profit Total column header sorts the indicators, bubbling the most profitable ones to the top. According to the data, Buy & Hold outperformed 22 other technical studies.

Next, we adjust the period from Daily to Monthly and press Enter to examine long-term performance. Again, Buy & Hold ranks as the top strategy, with Exponential Moving Averages coming in a close second. Let's add this finding to our research notes.

Backtesting & Optimization (BT)

If we want to explore whether there is a strategy more profitable than Buy & Hold, we can open a new panel and access a more comprehensive list of studies through the Backtesting & Optimization function, or BT. This tool enables us to build our own technical strategy, use a predefined Bloomberg strategy, or fine-tune the parameters of an existing indicator to test its performance.

Technical analysis provides a way to see which strategy would have generated the highest returns in the past. If we subscribe to the notion that history tends to repeat itself, then these insights can serve as a valuable roadmap for future decision-making. Ultimately, the choice is ours.

Comparative Returns (COMP)

Let's open a different panel and access the Comparative Returns function, or COMP, to analyze what our total return would have been had we bought Tencent stock at its IPO. This tool allows us to compare the stock's performance against its main indices.

The total return would have been phenomenal—we would have gained nearly 48,000%.

If we want to compare Tencent's performance to Alibaba's since Alibaba's IPO on September 19, 2014, we simply adjust the date range and add Alibaba (in HKD) to the chart. Even over that period, Tencent outperformed Alibaba, confirming it was the better investment.

Company Overview

As mentioned at the beginning of this submodule, if you want to beat the benchmarks using an active investment strategy, you need a deep understanding of the industry and each company involved. We've explored many Bloomberg functions—so how can we bring them all together in one place?

There are several ways to consolidate this information. We can use the Description (DES) page, the Company Profile (CP) page, or the Excel Template Library.

From the DES page, we can generate a report that gives us a three-page company summary. The CP page also offers reports. By clicking on PIB (Public Information Book), we can access summaries of 12 key functions. Clicking "Build" allows us to generate a comprehensive 300-page report. Alternatively, we can access this information via the Excel Template Library.

To explore this further, we can type "Excel" into the command line and select Excel Template Library, or XLTP. This tool provides access to over 300 Microsoft® Excel templates for performing custom analysis on Bloomberg data. These spreadsheets are categorized by sector, player type, and region.
Let's locate a spreadsheet that enables in-depth due diligence. The templates are ranked by popularity, and the top-listed file under "Bloomberg Company In Depth Analysis" is a good fit. By clicking "Open," we can work directly in Excel using all the Bloomberg Terminal data.

In this spreadsheet, all amber fields are editable—what do you think we should change first?

Now that we've entered the ticker for Tencent, we can press Enter and watch the data update in real time. By scrolling through the content, we are able to view a comprehensive set of insights that bring together all the functions we previously explored. This consolidated view includes an overview of Tencent's fundamentals, peer analysis, estimates data, analyst recommendations, and research analysis—all in one convenient place.

The majority of data within Bloomberg can be downloaded into Excel. For example, if we return to the RV function on our panel, we can click the "Output" button on the red toolbar and then select "Excel" to view the same data in spreadsheet form.

Similarly, when using the FA function, we can export data by selecting "Export," choosing "Excel," and then clicking "Current Template." The data will be transferred into a spreadsheet. As previously discussed, we can also retrieve the source document for Tencent's 2017 revenue using Excel. By right-clicking the 237,760 value, selecting "Show Bloomberg Transparency," opening all the tabs, and choosing the online advertising figure (40,439), we can access the same report we viewed earlier.

To learn more about downloading Bloomberg data into Excel, we can switch to another panel, type "Excel" into the command line, and choose DAPI—the Overview of Desktop API. From there, we can click "Getting Started" to view instructional videos.

Summary

Look at all the information we gathered on Tencent! There are numerous factors that can influence an investor's decision to either buy or pass on a stock. When following an active investment mandate, it is essential to track these factors carefully and consistently. Staying informed and vigilant is key to making sound, data-driven investment decisions.

Throughout our exploration of Tencent on the Bloomberg Terminal, we learned how to perform a variety of essential tasks. We learned to screen stocks, research companies and visualize their data, explore fundamentals and estimates, compare a company to its peers, examine analyst recommendations, perform technical analysis, and download data into Excel.

While we've already explored a broad set of functions, there is still much more available. For example, we can find Tencent's biggest suppliers by using the Supply Chain function (SPLC), or examine credit rating sentiment using the Credit Rating Profile function (CRPR). To deepen our research, we can revisit the Related Functions Menu and discover even more tools to analyze an equity.

Terminal Basics: Discovering Fixed Income

Introduction

What do Kungfu, Dim Sum, Panda, Samurai, and Kimchi bonds have in common? They are all types of foreign currency bonds issued in Asia. Among them, Kungfu bonds refer specifically to Chinese U.S. dollar-denominated bonds issued offshore. This emerging asset class is quickly gaining traction in the financial world.

Several factors contribute to the rise of Kungfu bonds, including tighter onshore regulations, rising funding costs, and record activity in China's debt capital markets. Many Chinese corporations are now opting to secure funding for their dollar-based activities through the offshore bond market. This shift not only helps them avoid domestic constraints but also provides access to a broader investor base, including hedge funds and mutual funds. For global investors seeking yield, Kungfu bonds offer a promising way to gain exposure to the Chinese market while effectively managing financial risks.

In the last section, we learned how to screen for stocks and conduct in-depth research on companies. Now, we turn our focus to discovering opportunities in the Kungfu bond market. We will learn how to identify a Kungfu bond, perform credit analysis on the issuer, confirm bond pricing and spreads, assess liquidity and pricing levels, and ultimately, trade the bond using Bloomberg's fixed-income platform.

Fixed Income Search (SRCH)

Let's begin by searching for Kungfu bonds on the Bloomberg Terminal. In the command line, we type "Kungfu bonds." This gives us two options—one for a Fixed Income search and one for a news search. We choose the Fixed Income Search: Kungfu Bonds. Clicking on this launches the Fixed Income Search (SRCH) function, which filters the initial universe of approximately 2.4 million securities down to just 1,442 bonds.

The Fixed Income Search tool allows users to build custom lists of financial instruments such as government and corporate bonds, structured notes, municipal bonds, and preferred securities. The interface is divided into several helpful sections, including the Security Universe, Search Criteria, and Additional Analysis.

Because some Chinese bonds are issued under both 144A (U.S. investors) and REGS (non-U.S. investors) series, we can remove redundancy by selecting Asset Classes and checking the box to consolidate duplicate bonds. After applying this filter, we click Close.

To refine our search further, we can focus on safer, investment-grade bonds. We do this by typing "investment grade" into the amber field and selecting the S&P Rating option. After filtering, we are left with 362 bonds. By clicking on Results, we can view the list of companies that have issued Kungfu bonds.

To identify the biggest issuer of Kungfu bonds, we begin by navigating to the Results tab, selecting **Settings**, and then choosing **Edit Columns**. In the top left amber field, we type "Amount Outstanding," press <GO>, select **Amount Outstanding**, and click **Add**. We then use the **Move Up** button to position "Amount Outstanding" above the Bloomberg Composite rating. After saving as default and returning to the main view, we sort by the "Amount Outstanding" column. According to the data, the largest Kungfu bonds issued to date are Bank of China's 5% coupon bond maturing in 2024, Alibaba's 3.4% coupon bond maturing in 2027, and Tencent's 3.595% coupon bond maturing in 2028.

Next, to find out who holds these bonds, we click on the **Holders** tab. The results show that Vanguard Group, BlackRock, and Allianz collectively hold about 20% of the total amount outstanding. To assess return performance, we navigate back to the **SRCH** page. Within the **Relative Value and Performance** section, we select **Evaluate Pricing** (FIW). This allows us to determine how much return the bonds have delivered year-to-date and how their yield compares to the U.S. treasury curve, i.e., the risk-free rate in the United States.

Fixed Income Worksheet (FIW): Bond List

We have just exported our list of bonds into a new function called Fixed Income Worksheet, or FIW. Fixed Income Worksheet is among Bloomberg's most robust credit relative value tools. The filters on the left allow us to sort by a list of variables including maturity, ratings, amount outstanding and currency.

Let's find the year-to-date return. In the Bond List tab, we will click in the Performance subtab, and then Return. The year-to-date return was -0.710%. And for the custom period selected, the year 2017, this list of bonds has delivered a return of 4.115%. Which bond delivered the highest return? We'll change our primary grouping method from Moody's to None and sort by year-to-date return. Shanghai Port Group BVI Holding was the best performing bond within the Kungfu universe, yielding 6.71%. So if we had these bonds in our portfolio, our return in 2017 was above 4% but year to date was -0.7%.

We now take a look at the spread of these bonds' yields versus the U.S. risk-free curve. We'll go to the Bond Chart tab and ensure our axes compare the yield and duration. Next, we go to the left panel and change the rating agency from Moody's to S&P. Then we click on the pencil and change the rating buckets. To aggregate the rating groups, we change "A+" to "A+ to A-", and we change "BBB+" to "BBB+ to BBB-." After hitting Update, we go back to the top and add the S&P Rating. Now we see a distribution of the bonds grouped by our rating buckets: "A+ to A-" and "BBB+ to BBB-." We click on the chart icon in the Ratings or Groups section to plot regression lines for these rating groups.

To compare the yield spreads on top of benchmark rates, we go to the "Add a Curve" amber field, start typing "US treasury actives curve," and select the first dropdown option. We can use the double arrow at the top right of the graph to close the side panel. Then, we add a legend by clicking on the Legend button and dragging the key out of the way.

We use the Annotate button to calculate the extra yield (called yield pickup) earned by investing in offshore Chinese USD bond markets. We click Annotate and Biaxis Net Change. Then, we place the mouse on the U.S. Treasury Actives Curve—the red line—at the ten-year point and draw an arrow to the ten-year point of the single A curve. The yield pickup between the U.S. Treasury curve and the single A-rated Kungfu bonds is 118 basis points. We repeat the process for the BBB curve. Clicking again on Biaxis Net Change and dragging from the U.S. curve to the ten-year point of the BBB curve, we observe the yield pickup is 202 basis points.

Let's assume we want to explore one of these bonds in more detail. Which of these 362 bonds should we pick? How does FIW help us answer this question?

Let's click on the Bond List tab and the Relative Value subtab. Let's change from Z-Spread to G-Spread. See that the G-Spread, the interpolated spread to the government curve, for those securities is analyzed over the last 6-month period. We can change to Price or another spread variable as well as changing the period. Let's scroll our bar to the right to have a clear view of the current G-Spread, Average, Low, and High. Now we'll assess relative value.

The blue dot is the current G-Spread level and is compared with the average of that selected 6-month period. Notice that the prices and spreads in the FIW screen use BVAL as a pricing source. What is BVAL and why do we use BVAL in FIW?

Bloomberg Valuation (BVAL)

Let's use the **Panel** key to call up another screen. What would you type into the command line to explore **BVAL**?

We correctly typed BVAL and pressed <GO>, but we got an error message. What happened? Since we haven't been looking at a fixed-income security, we'll see a message that our security is not supported. So we'll simply choose the first example. Bloomberg's BVAL Evaluated Pricing Service, or BVAL, provides

transparent and highly defensible prices for fixed-income securities across the liquidity spectrum. The key to BVAL's methodology is its real-time access to market observations from a wealth of contributed sources. All in, BVAL prices approximately 2.5 million securities on a daily basis, allowing us to have prices for a vast universe of securities. This is why BVAL is the default pricing source in FIW.

Let's use the Panel key to go back to FIW and choose an interesting bond to learn more about. Let's filter bonds between 5–7 years maturity and focus on bonds with an A+ to A- rating. We now have 19 bonds in our list. We're looking for outliers. Let's sort our list by Standard Deviation, which allows us to rank bonds that are further away from their average G-Spread.

Let's skim the list of bonds. Does anything catch your eye? Tencent Holdings, the company we explored in the Equity section, has a bond with one of the highest standard deviations! We've seen Tencent from an Equity perspective. How can Bloomberg help us look at Tencent from a credit perspective?

Security Description (DES)

To learn more about the Tencent bond on Bloomberg, we begin by clicking on the Tencent bond and selecting *More Related Functions*. From the popup menu, we choose *Security Description (DES)*. This function is split into two main tabs. The first, *Bond Description*, offers access to regulatory and tax data, bond covenants, ratings, exchanges, involved parties, fees, restrictions, and coupon details. The second, *Issuer Description*, provides detailed financial, operational, and economic data about the bond issuer.

Why are there two tabs for a fixed-income instrument? Investors want to ensure the issuing company is in strong credit health before analyzing the bond's details. As previously discussed in the Equity section, Tencent operates in internet and mobile value-added services (VAS), online advertising, and e-commerce transactions. For our credit analysis, we gather key findings. Tencent holds an A1 rating from Moody's as of March 23, 2018, and an A+ rating from S&P as of April 27, 2017.

Capital Structure (CAST)

We begin by opening *Company Info* and navigating to the *Corporate Structure* section. The bond's obligor is listed as Tencent Holdings Ltd and is guaranteed by its subsidiaries Tencent Asset Management Ltd and China Literature Ltd. This is typical, as holding companies generally do not maintain operating assets.

To visualize Tencent's corporate structure, we use the *CAST* function. CAST presents an image of the company's structure and allows us to analyze Tencent's debt hierarchy. Through this, we can determine whether Tencent has other subsidiary debt and identify where guarantees may exist. This form of structural analysis helps assess the risk profile of our investment.

Debt Distribution (DDIS)

Let's close out of CAST and open the Debt Summary page. As we can see, the company has increased its total debt from Q4 2017. It was mainly done by issuing new bonds in Q1 2018 and now loans represent 54% of its total debt from 69% in Q4 2017.

Is this good or bad? Let's compare the debt maturity profile of Tencent with Alibaba, one of Tencent's competitors as seen in the Equity module. Let's click on Debt Distribution, or DDIS, which allows us to analyze the ability of an issuer or group of issuers to meet obligations to debt holders. On the top, we have the data controls. In the middle, we see the maturity distribution. And at the bottom, we see the statistics. On the right is the control panel.

In the Add Comparison field, we'll type Alibaba and select the first one from the dropdown menu. Tencent is the first chart and Alibaba is the second. The third chart is the difference between Alibaba's and Tencent's debt. We can see that Tencent, at the time of this recording, has more one- to five-year debt than

Alibaba and therefore more refinancing needs in the short term. We also see that Alibaba has tapped into the long-term market, which Tencent has not done to the same extent.

Let's click on Table to look at the statistics table and confirm our findings. Tencent has more debt outstanding than Alibaba. Tencent's longest bond matures in 2038. If we click on the Alibaba radio button at the top, we can toggle the screen to show that Alibaba's longest bond matures in 2057. Therefore, the weighted average years to maturity of Tencent is less than half of Alibaba's.

Aggregated Debt (AGGD)

Let's close DDIS and open Major Creditors next. Here we see the aggregated debt for Tencent. Allianz, T. Rowe Price, and Vanguard are Tencent's biggest debt holders. Almost everyone is buying more of Tencent's bonds—Allianz increased its holdings by 210%! Notice the Bloomberg function for Major Creditors is AGGD.

Bloomberg Default Risk (DRSK)

Let's open DRSK for Bloomberg Default Risk. DRSK generates an independent evaluation of a company's credit health using scrubbed fundamental data and cutting-edge quantitative models. It provides daily estimates for default risk, one-year default probability, and a CDS model.

According to Bloomberg proprietary methodology, Tencent is rated IG1, the highest investment grade rating. Let's click into IG1 to see more about Bloomberg's rating scale.

Let's close the box and look at the one-year default probability. It's 0.0011% for Tencent, making it a very safe investment. This analysis is very useful as many of the Chinese issuers do not have international ratings. This helps investors to compare companies more easily.

Relative Value Ranking (RVRD)

Finally, let's close DRSK and click the RVRD, the Relative Value Ranking function. RVRD allows us to perform fundamental debt and credit ratio benchmarking of our security's performance against the relative index and peer groups. We can customize our peers to match the ones we had in the Equity section: Activision, Alibaba, and Baidu. Let's click Customize, Custom Peers, and Ticker to highlight all of them. Then uncheck the boxes beside our desired competitors. Finally, we'll click Remove Selected and Save. When we compare Tencent to its peers, we see two credit metrics: Debt to trailing 12-month EBITDA and EBITDA/interest expense. EBITDA is a great proxy for cash flow except for capital-intensive industries such as Oil and Gas, to which Tencent does not belong. The first ratio gives the investor the approximate amount of time that would be needed to pay off all debt, ignoring interest, taxes, depreciation, and amortization. The second ratio is used to assess a company's financial durability by examining whether it is at least profitable enough to pay off its interest expenses. In both metrics, Tencent is performing better than its peers.

As of September 2018, when this data was captured, our credit analysis of Tencent shows that it is a solid company from a credit perspective. So our next step is to research the bond in detail.

Security Description (DES)

Let's close this screen and click on the Bond Description tab to learn more about the bond in question. What do we know about the bond just by looking at this tab?

It has an annual fixed coupon of 3.8%, paid semi-annually. The bond matures on February 11, 2025. It's denominated in USD and is a REGS series, which means it's the USD bond that non-U.S. investors can invest in. For our story's purpose, let's assume that is the case. It has a bond rating from S&P of A+, the same as Tencent's overall rating. On the quote line at the time this screen was recorded, it was trading at 97.717 on CBBT (Bloomberg electronic trading executable price composite). Its interest accrual date is

February 11, 2015, with an issue spread of 205 basis points over the U.S. Treasury. The bond is also eligible for TRACE reporting, which requires members to report a transaction within 15 minutes of execution and disclose the trade price.

Before we dig further into this bond, let's see how we could pull it up directly from another screen. We'll open a new Bloomberg panel by using the `Panel` key. Then we begin typing the name of the company, the coupon, and the maturity: `Tencent 3.8 2025`. Among the list of results, we'll select the one that matches the 3.8% coupon with the 2025 maturity.

Fixed Income Worksheet (FIW)

As we are a non-U.S. investor, we chose the REGS bond, which brings us to the bond's menu page.

Back in the FIW function, we saw that the Tencent bond had one of the highest standard deviations for G-Spreads within the A+ Kungfu bonds between 5–7 years to maturity. We wanted to understand if this bond could be a good investment to add to our global fixed-income portfolio. A high G-Spread could mean an opportunity for the bond to revert back to its mean. How can we understand how the G-Spread had changed over the last 6 months? How can we see it on Bloomberg? We will find the answer in the Yield and Spread Analysis screen under Analytics.

Yield and Spread Analysis (YAS)

Yield and Spread Analysis, or YAS, allows us to explore pricing and spreads, and how they have changed historically. The Yield and Spread tab is divided into five main areas. The Calculator section lets us calculate yields based on various market conventions and custom inputs, such as price and spread to a benchmark issue. The Risk section shows several measures of risk, enabling us to hedge the security and assess its fit for our investment strategy. The Spread section displays the difference between the yield on a bond and the yield on a benchmark at a specific time. The Yield Calculations section presents bond yields using multiple compounding conventions. Lastly, the Invoice section calculates the total amount of money required to settle a trade.

Now that we understand how the screen is structured, let's analyze the Tencent bond. The bond yield is 4.146% compared to 3.059% for the benchmark Treasury rate, producing an extra yield of 108.67 basis points. However, this is lower than the spread at issuance, which was 205 basis points. The interpolated bond spread to the government curve, or G-Spread, is 114.5 basis points. This differs from what we observed in the FIW screen due to a change in pricing source. The bond's modified duration, a measure of its interest rate sensitivity, is 5.577. In general, bonds with higher modified durations are more sensitive to interest rate risk. The Invoice section also reveals that it would cost over 985,000 HKD to purchase one million Tencent bonds.

To examine how the G-Spread has changed over time, we go to the Graphs tab. We change the view from 3M to 6M in the top right. Then we adjust the parameters: change Z-Spread to Ask Price, Interpolated Spread to Ask Yield-to-Maturity, and Mid Spread to Benchmark to G-Spread. From this setup, we can observe that the G-Spread has decreased slightly from over 120 basis points to 114.5 basis points. Even with this decrease, the spread remains in the high band. Let's be sure to add this insight to our notes.

Liquidity Assessment (LQA)

Let's say we think that this current spread is an outlier. Then there is an opportunity here. Where could we buy this bond from? And at what price? Is this bond liquid?

Let's type "liquidity" in the command line and choose Liquidity Assessment. LQA helps us to formulate trading strategies and assess our position's liquidity risk by quantitatively estimating a security's liquidity. For our story, we will focus our attention in the Liquidity Scores section. The Liquidity Score reflects the

security's centile rank, and is represented with a relative value between 1 and 100. A score of 100 is the most liquid, with the lowest average liquidation cost for a range of volumes. Tencent has a score close to 100 for both asset class sectors. Let's add this to our research notes.

If the bond is liquid we should have several pricing providers on Bloomberg. Let's click in the Related Functions Menu and, under Current Pricing, load FI Price Discovery, FIPX.

Fixed Income Price Discovery (FIPX)

FIPX gives us the pricing data we need to quickly value a bond when analyzing a potential trade or determining a mark-to-market. It aggregates pricing data from prices received in your message inbox MSG1, all dealers contributing prices to Bloomberg, Bloomberg Generic and Evaluated Price, and finally the prices reported to TRACE.

What can we learn about Tencent's pricing? The two green dots in the price chart show the best levels we could buy or sell the bond through our Bloomberg Trading platform, assuming we were enabled to trade with those broker dealers. The best Ask price, the price that we can buy the bond in the market, is lower than the best Bid, the price we can sell the bond at. We call this an inverted market. At the bottom, we can take a look at the Trade history from TRACE and see that, the day before this screen was captured, the bond traded around 98.16, slightly higher than the level the day before that of 98.11. The graph on the right tells us that there were more buyers than sellers in the market on September 18th, hence why the green bubble is bigger than the red bubble.

All Quotes (ALLQ)

To recap, we are happy with the credit risk of Tencent, we believe there could be a price reversal soon, we also liked the fact the bond is liquid, and we know what levels we could buy the bond on Bloomberg. What's next? Let's simulate a trade!

Let's go back to the Related Functions Menu and under Current Pricing open ALLQ, for ALLQ quotes.

ALLQ allows us to monitor current market data for a selected fixed-income security by contributed pricing sources, so we can determine a security's current price, spread, yield, and liquidity. ALLQ is organized into two modes that allow us to display contributed quotes from our enabled dealers or performance metrics for each dealer. Notice we have Buy and Sell buttons on the top right.

Given that our Bloomberg terminal is not enabled for trading, we are going to emulate it by typing "ALLQ DEMO" into the command line and pressing Enter or ¡GO¿. Let's see what it would look like if we were trading the bond on the Bloomberg FI trading platform.

We decided to buy the bond, so we click on Buy. We'll change the button in the bottom left to All to select all the dealers with whom we are able to trade. Under Quantity, we'll type 1M to buy one million bonds. Then we'll press Enter. Finally, since we are outside the U.S., we'll click Submit to MTF to send the trade to the Multilateral Trading Facility.

Automatically, a request for pricing was sent to all the dealers. The Bloomberg platform highlights the best price by showing it in green. We can trade straight away, or click Pass and then Resubmit the trade again to see if we can get a better price. Let's submit to MTF again.

This time, D1 is giving us the best price at 97.76, but it's worse than our previous offer at 97.70 from DOR6. Something must have happened in the market and DOR6 adjusted its price and is no longer the most competitive. In this case, resubmitting the trade worked against us. Nevertheless, let's assume we are happy with the current prices. We now have two options. We can click the green Lift button linked to Dealer

1 or click on Ex.Best, which means "best execution" and, by doing so, we avoid clicking the wrong dealer.

So let's click on Ex.Best to buy from D1. We bought one million bonds at 97.7668, a much better price than our Ask Price of 98.2181, what they were offering when they were not in competition with other dealers.

Let's take a look at our messages by typing "message" and pressing Enter or ¡GO¿. Bloomberg sent us a trade confirmation that, if we were working in Asset Management, we could send to our middle or back office to settle the trade on our behalf.

We've gone from looking at this Tencent bond as a potential investment, to now owning this Tencent bond 3.8% maturing in February 2025. Congratulations!

Summary

In summary, we started this section looking for opportunities in the Kungfu bond market. We used Standard Deviations to look at potential price reversals opportunities and found out that the Tencent bond was an outlier in terms of a higher change in G-Spread over the past six months. We investigated the credit worthiness of Tencent and found out that the company had solid credit. We were reassured that the majority of Tencent's credit holders were increasing their exposure to Tencent's debt. We then looked at the bond to understand its yield, the historical G-Spread chart, and how much it would cost us to buy one million bonds. Then we looked at the bond's liquidity and at the different pricing sources. Finally, we emulated a trade through the Bloomberg Fixed-Income trading platform.

What other functions could we have added to our credit analysis? For example, if the Fed raises interest rates by 25 bps, how would it impact the return on the bond? Check out the Fixed Income Scenario Analysis function, or FISA, to find out!

Terminal Basics: Building an Equity Portfolio

Introduction

Portfolio managers' performance depends on various factors. They must manage and anticipate changes in various markets every day, plan for every possibility, and execute accordingly. They also need a flexible plan for responding to economic, financial, and political changes. In this section, we will draw inspiration from the world's most successful portfolio managers to learn how to build and manage our own portfolio.

Portfolio Management Functions

In the next few minutes, we will show you how to find the wealthiest investors and entrepreneurs in the world on the Bloomberg Billionaires Index (RICH), use Investor Profile (IP) to get insights on the bets of the wealthiest investors, create a portfolio with PRTU, and analyze that portfolio's performance and risk with PORT.

Bloomberg Billionaires Index (RICH)

Let's start by typing "RICH" into the command line and navigate to the Bloomberg Billionaires Index. This index leverages data and proprietary calculations to monitor the world's highest net-worth individuals and how their fortunes change on a daily basis as markets fluctuate.

We can click any billionaire to see a biography screen, where we can further examine the billionaire's fortune. Let's select Warren Buffett, "The Oracle of Omaha," worth over $82 billion! These biographies provide in-depth profiles, how the billionaires made their money, and how they spend and give. We can see that Warren Buffett is the chairman and largest shareholder of Berkshire Hathaway, which boasts an impressive average

annual return since 1953 of 20.9%.

Let's see what kind of companies Buffett adds to his portfolio. First, we'll use the Panel key to access a fresh screen. Let's open the Description page (DES) that we saw in the last section. Now let's type "Berkshire Hathaway" into the amber field and select the Class A equity ticker, which is the one that carries more voting rights and therefore is the one in which mutual funds invest. We'll expand the company description, and scroll down to Strategy. We see that Berkshire Hathaway seeks to invest in large companies with consistent earnings, easy-to-understand business models, and like-minded leadership.

Now let's check out Buffett's investments and create our own portfolio in hopes of emulating his success story.

Investor Profile (IP)

Let's find the companies in which Berkshire Hathaway invests by typing "invest" into the command line and choosing the Investor Profile function, or IP.

This function provides a comprehensive investor profile for an institution, such as Berkshire Hathaway. It allows us to analyze holdings across five years of data, so we can gain insight into the company's investment style and strategy. Let's click on the Holdings tab to see Berkshire Hathaway's investments. We can see that Buffett's biggest bets include Apple and Wells Fargo, among other blue chip names.

Now let's click on the Panel key to bring up a new Bloomberg window in which we will create our portfolio. Let's type "portfolio" into the command line and select the Portfolio Management & Risk menu.

The functions in this menu will allow us to create and maintain portfolios; run an analysis of our portfolios on performance, attribution, and risk; access the most relevant news and research; and run reports.

We will create our portfolio by using the Portfolio Administration function (PRTU) and then we will analyze it with the PORT function (Portfolio & Risk Analytics).

Portfolio Administration (PRTU)

Let's open the Portfolio Administration tool first. This function allows us to create and manage our portfolios, as well as share them with other Bloomberg users. Note that selecting a portfolio activates the Remove and Share features.

Let's click on Create to set up our portfolio. Let's add a name—Berkshire's Top 10, choose Equity, and select USD. Should we change Shares/Par amount to Fixed Weight or to Drifting Weight? Which keyboard key could you press to find out the difference?

Since we are creating a portfolio, let's click on Creating a Portfolio in the left section and scroll to Position Type. We can see that Fixed Weights means that we'd be constantly buying or selling our stock to maintain, say, a 10% weight for each stock. Investors normally allocate 10% and then they let it drift—that is, they let the stocks appreciate or depreciate. So let's close the Help menu and choose Drifting Weight. We'll allocate 10% of our money to each security in a few moments.

Then we'll add the SPX as the benchmark. Next, we'll ensure that the Calculation Profile is Bloomberg Equity Calculations and that the Default PORT View is the Bloomberg Equity View. Finally, we'll click the Create button.

This screen has two main parts. At the top, we can update portfolio settings. At the bottom, we can enter our securities. So that we can run a historical chart of our performance, let's go back in time to January 1,

2017, and press Enter before entering the securities. Now it is time to build our portfolio. If we put our Berkshire Investor Profile beside the Portfolio Administration panel, we can insert securities into our portfolio in two ways: we can type them in, or we can click and drag the ticker from one window to the next and drop it in the lower-left amber field. Note that it may take a few moments to transfer. When we drag a security, we'll see this screen pop up. Which option should we choose? We'll choose Merge because we want to add a new security to the portfolio. Go ahead and drag over the next eight securities to round out our top ten list.

Now that we've set up the top ten, let's add our drifting weight positions—10% for each stock—and then save the portfolio. We can access the portfolio by going through the Related Functions Menu to Portfolio & Risk Analytics, or PORT.

Portfolio & Risk Analytics (PORT)

PORT empowers us to gain deeper insight into our portfolios by providing the tools to understand the structure of our portfolios, analyze our positions and active bets, and explain the drivers of historical performance and potential sources of future risk. PORT is organized with a streamlined workflow, displayed through a series of tabs. The Intraday tab tracks the intraday absolute or relative performance of our portfolio. Holdings allows us to view our portfolio's current and historical positions, weights, and sector/grouping allocations. Characteristics analyzes the fundamental characteristics of our portfolio and how they have changed over time. Value at Risk estimates the maximum portfolio loss in P&L (or percent return) as measured at a given confidence level. Scenarios stress tests our portfolio based on historical or hypothetical scenarios of market movements. Tracking Error/Volatility analyzes our portfolio's ex-ante (predicted) risk using Bloomberg's multi-factor risk models. Performance analyzes the historical performance and realized risk/return behavior of our portfolio. Attribution attributes our portfolio's active performance to its structure relative to the benchmark. Within each tab are subtabs, which offer more detail. Below the tabs are amber fields which allow us to load our portfolio, benchmark, and breakdown attributes that remain constant across all tabs.

PORT: Performance

Now that we understand how PORT is organized, let's dive into our portfolio and evaluate its returns. First, let's click on the Performance tab. The Main View subtab breaks down our portfolio's historical performance in a table. To see the total returns visually, we'll click on the second subtab, Total Return. We can change the periodicity in the Time amber field. Recall that when we entered the securities, we backdated the portfolio to January 1, 2017. If we change Time to Maximum Range and press Enter, we will see a graph showing the earliest day for which we entered portfolio positions. The chart is split into two panels. The top shows a line graph for our portfolio's total return percentage against our benchmark's, the S&P 500. The bottom shows the differential between the two, most commonly known as active return. We can see that the S&P 500 is slightly outperforming our portfolio. What's the reason for this?

PORT: Attribution

Let's go to a different tab—Attribution—and click on the Summary subtab. In this tab, we will be able to see if we outperformed the benchmark, and identify which sectors, stocks, and currencies drove that performance. Global top-down equity managers need to make conscious decisions about sector (Allocation), stock (Selection), and currency exposure (Currency). First, they need to research which sectors they believe will outperform the benchmark and therefore allocate more weight to those sectors. This is what we call the allocation effect. Then, they need to choose the stocks they believe will perform above average. This is what we call the selection effect. They also need to think about the currency in which the stock trades versus the currency of the overall portfolio, as the depreciation of a currency can eat into the returns of the portfolio. This is the currency effect. The final effect is the interaction effect, which is the return that results as a combination of the three factors: allocation, selection, and currency. Let's determine our performance in 2017. During this year, we achieved an impressive 23.63% return and outperformed the S&P 500 by 1.8%. Why? Let's look at the Active Return Attribution Summary section. Where did the return come from? From a great stock selection. Our portfolio's currency is in U.S. dollars and all our stocks are traded in

U.S. dollars. Therefore, there is no Currency effect. However, our sector allocation had a -2.08% return. Which sectors dragged our performance down? We lost 1.93% return in Information Technology because we were underweight and this sector performed above average. We lost a combined 1.63% return in Consumer Staples and Energy because we were overweight in these sectors and both performed below average. Which sector gave us the highest return?

PORT: VaR

As we just saw, this portfolio is heavily exposed to Financials. Did that help or hurt the returns? It helped! As a sector, Financials performed decently. And our solid stock selection improved our performance so that Financials counted 3.24% towards our active return. Portfolio managers want to understand where their returns are coming from but also their risk. Let's go to the VaR—Value at Risk—tab and select subtab VaR Comparison to see, as of August 1, 2018, how much money we could lose in one day relative to the benchmark with 95% confidence while looking at three years of history with the Bloomberg Risk Model. Of an investment of over $129M, we could lose about $1M, which is less than 1%. We can see the exact percentage by changing the Unit from P&L, which gives dollar amounts, to Returns (%) and clicking when prompted. We could lose 0.65%. Now let's revert to P&L and go to the Conditional VaR column, which tells us how much we could lose on average if tomorrow is one of the top 5 out of 100 days with the worst performance. In this case, we would lose about $1M, the bulk of it from Financials. This is still below 1%, which we can see by converting the Units to Returns (%) again. And this is expected as—you may recall from the Description, or DES, page—Berkshire Hathaway invests in large companies with consistent earnings, easy-to-understand business models, and like-minded leadership.

Summary

Let's review what we've discovered in the course of our story. We examined Warren Buffett's Berkshire Hathaway investments. Then we created our own portfolio with its top ten holdings and assigned a 10% drifting weight. Next we saw how this portfolio returned almost 24% in 2017 and outperformed the benchmark by 1.8% because we chose the right stocks in which to invest. Finally, we looked at how much money we could lose in one day with a 95% confidence level based on a three-year historical VaR: less than 1%. And we saw that the Financials sector contributed the most to that potential loss.

What did we learn how to do on the Terminal through the Berkshire Hathaway story? We explored how to find the wealthiest investors and entrepreneurs in the world, discover insights on the bets of the wealthiest investors, create a portfolio, and analyze that portfolio's performance and risk. Now that you know how to use EQS for equity screening and IP to track portfolios of popular asset managers, which portfolio would you create? Give it a try and make your friends jealous by showing them your portfolio returns on Bloomberg!

Conclusion

Let's review what we've learned in *Getting Started on the Terminal*. By now you should feel comfortable with how to navigate the Bloomberg Terminal. To find something, always start by typing what you want into the command line. If you are lost, use the Escape or Cancel key to exit the function, or use the Related Functions Menu to help you maneuver through the menus. If you are still unsure what to do, press the Help key once and review the FAQ section. And, as last resort, pressing the Help key twice allows you to reach out to our amazing support desk. Through the different submodules, we highlighted how market professionals use some of the analytics we have created. Let's recap them one more time. In the Analyzing the Market section, we explored how to monitor global market performance and understand market movements around a key macroeconomic event. In the Equity section, we zoomed in from the macro market to the stock market. We used the company Tencent to learn how to find stocks, research companies, compare them to their peers, see what the analysts think about the companies, and perform technical analysis. Finally, we discovered how to download all this data into Excel. Next, in the Fixed Income section, we looked at Tencent again, but this time we explored its bonds. We saw how to find bonds, analyze credit, confirm price and spreads, and assess liquidity and pricing. And then we finished with a demo of how to buy a bond. Lastly, we examined

how to build an equity portfolio. We learned how to research the holdings of other investors, how to create our own portfolio, and then how to analyze it. As we've seen, Bloomberg is the central nervous system of finance, empowering people to make critical, transparent, and informed investment decisions. Through *Getting Started on the Terminal*, you got exposure to some of the analytics these top professionals use. But there is so much more to explore... Where would you like your Bloomberg journey to take you? Have fun.