

## **Bloomberg Exercises used in Investment, Financial Markets, Fixed-Income, and Derivative Classes**

### **Equity Markets and Trading**

1. Bloomberg information on corporate actions such as acquisitions and limited partnership deals can be accessed on the CACS screen found on the company's equity menu. Select a company of interest that you know has been active in acquisitions and divestitures and use CACS to search for its previous activities.
2. Select a preferred stock of a company of interest (use SECF to find the preferred: SECF <Enter>; FI tab, and Pfd tab; or search by entering: <Pfd> tk <Enter>; if you know the company's ticker, bring up its screen by entering ticker <pfd>). Study the preferred stock using the stock's menu screen. Possible screens to examine from the menus: DES, DVD, and GP
3. Identify several past acquisitions, IPOs, or divestitures using the CACT screen. Set your search for M&A and IPO, or use "Custom" tab.
4. Identify several current or recent investment activities of venture capital and private equity holdings companies by using the FLNG screen (click "Venture Capital" and "Private Equity" in "Institution Type" dropdown).
5. Using the FLNG screen, study the past activities of a venture capital and a private equity firm: FLNG <Enter>. On the uploaded screen, select "Venture Capital" or "Private Equity" from the "Institution" dropdown menu. You can identify activities to view at the bottom of the screen and you can change the sectors to view activities by sector.
6. Identify several pending corporate deals using EVTS. You can use EVTS for a loaded company: Ticker <Equity>; EVTS. You can also search for events using EVTS and then select an industry or all stocks.
7. Identify and study an IPO using the IPO screen: IPO <Enter>. On the screen, you can access pending IPOs and the deal. To get more information on the company, use its ticker (found on the deal page) and then go to its equity screen: Ticker <Equity>.
8. The LTOP screen displays top underwriters for the major fixed income, equity, equity-linked securities, and syndicated loan securities markets. Using the screen, identify the top underwriters over the past year for U.S. equity and fixed-income issues. Using the dropdown menu, study some of the recent deals for several of the top equity and bond underwriter. To access: LTOP <Enter> On the LTOP screen, right click to access a dropdown menu showing descriptions and the underwriter's deals for that period.
9. The Bloomberg NIM screens identify new security offerings by security type, period, and region. The NIM screen can be customized to identify certain types of bonds and securities and news about announced offerings. Using the NNIM screen, identify some new or expected offerings in the following security categories:
  - U.S. Bonds
  - Equity-Linked Securities (Convertibles)
  - U.S. Corporate/144A
  - Preferred
  - Eurobond
10. The IPO screen displays IPO and seasoned issues in different stages in the underwriting process. Use the screen to select several IPOs in the following stages: Announced, Upcoming, Priced, Withdrawn/Postponed, and Lock-Up Expiring. Using the dropdown, get a description of the deal. For a company that has just issued its IPO, get more information on the company by going to its equity screen.
11. Identify and study private equity activities by going to the "Private Equity" menu: PE <Enter>. Bloomberg's Private Equity screen displays a menu of links that provide access to specific Bloomberg private equity analysis functions.

12. Use EPR or WEXC to find the Web site of an exchange of interest.
13. Study the different prices quotes of a stock of interest using the following screens: BQ, QR, QM, and QMC. Determine the interest in the stock using the IOIA screen.
14. Study the different prices quotes of a corporate bond of interest using TRACE: QR and TDH. Determine the interest in the bond using ALLQ.
15. Short Interest is the total amount of shares of stock that are sold short and have not been repurchased to close out the position. High levels of short interest indicate that numerous sellers have sold the stock short and are expecting a downturn in the share price. The SI Screen displays monthly short interest information for a selected equity security that trades on the exchanges. Use the SI screen for several stocks of interest to determine whether or not there is a bullish or bearish sentiment regarding the stocks.
16. The MBTR monitor screen displays institutional equity transactions of 10,000 shares/lots or more (block trades) on exchanges worldwide. Set up the screen to monitor the stocks in an index (e.g., Russell 3000 (RAY) and the minimum volume (e.g., 100,000 or 500,000). Select one of the stocks that is trading on heavy volume and try to determine if there is an explanation for the size of the trade. Screens to consider from the stock's menu screen: Company News (CN), intraday price graph (GIP), bid and asked spreads and quotes (QR, BQ, and QMC), short interest (SI), dealers' interest (SIDE), and brokers' reported volume (IOIA).
17. The last decade has seen the emergence of electronic trading, exchange consolidation, and global trading. Some of the companies that have been part of this change are NYSE Euronext (NYX <Equity>) NASDAQ OMX Group (NDAQ <Equity>) and Instinet (INNE <Equity>). Study the news, analyst views, and trends of these companies using some of the screens from each company's menu screen: DES, Company News (CN), Company Filings (CF), Supply Chain (SPLC), and Company Research (BRC).

### **Investment Funds and Global Markets**

1. Learn more about the different types of funds and their classifications by going to the FUND screen and "Classification" link: FUND <Enter>; click "5) Fund Classifications" and select type of fund: Equity, Debt, Money Market, Real Estate, Commodity, and Alternative.
2. The performances of funds by type (e.g., mutual, hedge funds, ETFs, and unit investment trust) can be found on Bloomberg's Fund Heat Map screen, FMAP. Use the screen to identify the top performers based on total return for several types: FMAP <Enter>, click "Fund Type" in "View By" dropdown.
3. The performances of funds by objective (e.g., equity, debt, asset allocation, money market, and alternative) can be found on FMAP. Use the screen to identify the top performers based on total return for several objectives: FMAP <Enter>, Click "Objective" in "View By" dropdown.
4. Identify several mutual fund (open and closed end) using SECF: SECF <Enter>; Funds Tab, click Open End or Closed End tab or select Open-End fund or Closed-End fund from the Type tab; select equity, fixed Income, or mixed from the Focus tab, and USD from currency tab. Examine one of the funds using the functions on the fund's menu screen (Fund Ticker <Equity> <Enter>). Functions to include: DES, historical fund analysis (HFA) or COMP, fund holdings (MHD), and price graph (GP).
5. Identify several unit investment trust using SECF: SECF <Enter>; Funds Tab, select Unit Investment Trust from Type tab, Fixed Income from Focus tab, and USD from currency tab. Examine one of the funds using the

functions on the fund's menus screen (Fund Ticker <Equity> <Enter>). Functions to include: DES, historical fund analysis (HFA) or COMP, fund holdings (MHD), and price graph (GP).

6. Identify several fund of funds using SECF: SECF <Enter>; Funds Tab; click select F of F tab or select Fund of Funds from Type tab; chose a Focus (e.g., equity, real estate, or all), and currency (e.g., USD). Examine one of the funds using the functions on the fund's menus screen (Fund Ticker <Equity> <Enter>). Functions to include: DES, historical fund analysis (HFA) or COMP, fund holdings (MHD), and price graph (GP).
7. Identify several ETFs using SECF: SECF <Enter>; Funds Tab; click ETFs tab or select ETF from Type tab; chose a focus (e.g., equity, real estate, or all), and currency (e.g., USD). Examine one of the ETFs using the functions on the fund's menus screen (Fund Ticker <Equity> <Enter>). Functions to include: DES, historical fund analysis (HFA) or COMP, fund holdings (MHD), and price graph (GP).
8. Use the Bloomberg fund search screen, FSRC, to search for the following types of open- and closed-end equity funds:
9. Fund type: Open-End Funds; Classification/Fund Asset Class Focus: Equity; Classification/Fund Market Cap Focus: Small-Cap; Country of Domicile: United States; Analytic criterion: Enter (in amber box) total return for one year of greater than X percent (e.g., 30 percent).
10. Fund type: Closed-End Investment Funds; Classification/Fund Asset Class Focus: Equity; Country of Domicile: United States.
11. Note: To save your searches, click "Save As" in the Action Tab.
12. Select one of the funds from each of your searches in Exercise 8 and study it using the functions on the fund's menus screen (Fund Ticker <Equity> <Enter>).
13. Use the Bloomberg fund search screen, FSRC, to search for the following types of fixed-income funds and ETFs:
14. Fund type: Open-End Funds; Classification/Fund Asset Class Focus: Fixed Income; Classification/Maturity band Focus: Long Term; Classification/Fund Rating Class Focus: Investment Grade A or higher; Analytic criterion: Enter (in amber box) total return for one year of greater than X percent (e.g., 4 percent or 10 percent).
15. Fund type: Open-End Funds; Classification/Fund Asset Class Focus: Fixed Income; Classification/Maturity band Focus: Intermediate Term; Classification/Fund Rating Class Focus: High Yield; Analytic criterion: Enter (in amber box) total return for one year of greater than X percent (e.g., 10 percent).
16. Fund type: Exchange Traded Product ; Country of Domicile: United States; Classification/Fund Asset Class Focus: Fixed Income; Classification/Fund Rating Class Focus: High Yield.
17. Fund type: Fund of Fund; Classification/Fund Asset Class Focus: Fixed Income; Classification/Fund Rating Class Focus: High Yield.
18. Note: To save your searches, click "Save As" in the Action Tab.
19. Select one of the funds from each of your searches in Exercise 10 and study it using the functions on the fund's menus screen (Fund Ticker <Equity> <Enter>).
20. Use the Bloomberg fund search screen, FSRC, to search for the following types of equity funds outside the United States:
21. Fund type: Open-End Funds or Closed-End; Classification/Fund Asset Class Focus: Equity; Country of Domicile: Select country other than United States (e.g., Netherlands).
22. Fund type: Open-End Funds or Closed-End; Classification/Fund Asset Class Focus: Fixed-Income; Country of Domicile: Select country other than United States (e.g., Netherlands).

23. Select one of the funds from each of your searches in Exercise 12 and study it using the functions on the fund's menu screen (Fund Ticker <Equity> <Enter>).
24. Use the Bloomberg fund search screen, FSRC, to search for the following types of ETFs:
25. Fund type: Classification/Fund Asset Class Focus: Equity or Fixed Income; Classification/Fund Objective: Exchange Traded Product. Consider narrowing your search by entering an analytical criterion: Enter (in amber box) total return for one year of greater than X percent.
26. Fund type: Classification/Fund Objective: Select from an ETF from the Exchange Traded Product menu. Consider narrowing your search by entering an analytical criterion: Enter (in amber box) total return for one year of greater than X percent.
27. Select one of the funds from each of your searches in Exercise 14 and study it using the functions on the fund's menu screen (Fund Ticker <Equity> <Enter>).
28. Use FSRC to search and screen for different types of government funds: FSRC: FSRC <Enter>; Classification/Fund Objective: Select from a Fixed-Income menu (e.g., Government Bond, High yield). Funds to consider:
  - a. Government Bond Long
  - b. Muni High Yield
  - c. Muni of a state (e.g., Muni New York Long)
29. Select some of the funds from your searches and study them using the functions on the fund's menu screen (Fund Ticker <Equity> <Enter>).
30. Use Bloomberg's SECF screen to find different types of funds: SECF <Enter>, click Fund Tab and then type the fund of interest (municipal, global, or index) in the Search box. You may want to narrow your search by selecting categories from the Focus, Exchange, and Type tabs. Funds to consider:
  - a. Municipal
  - b. Global
  - c. Index
31. Study some of funds using the functions on the fund's menu screen (Ticker <Equity> <Enter>).
32. Bloomberg's REIT screen provides a menu for searching for real estate investment trusts by regions: U.S., Europe, Asia, Australia, Canada, and other. Using the screens, search and select some REITs from different regions. You can also use the SECF screen: SECF <Enter>, type "REIT" in the Search box. Study the REITs using the functions on the REIT's menu screen (Ticker <Equity> <Enter>).
33. Go to the FUND screen to find news and information on mutual funds, hedge funds, and ETFs: FUND <Enter>, use the "News and Research" links.
34. The hedge fund industry is a leader in creating new investment product. To keep current, go to the BRIEF screen to access the Bloomberg newsletter: "Hedge Fund."
35. Investment banks are an important financial intermediary. Study some of the activities and deals of investment banks by exploring Bloomberg's LTOP and LEAG screens.
36. Keep current on mergers by going to the BRIEF screen to access the Bloomberg newsletter: "Mergers."
37. The LTOP screen displays top underwriters for the major fixed income, equity, equity-linked securities, and syndicated loan securities markets. Using the screen, identify the top underwriters over the past year for global

equity issues. Using the dropdown menu, study some of the recent deals for several of the top equity underwriter. To access: LTOP <Enter>.

38. The IMAP screen can be used to identify stocks that are trading on different exchanges around the world. On the IMAP screen, study the securities listed on an exchange outside the U.S.: IMAP <Enter>, click region, country, and then an exchange.
39. Use WEXC to find the Web site of foreign exchanges of interest.
40. Use SECF to search for ADRS or Global Depository Receipts: SECF <Enter>; Equity tab; select Receipts from Type tab; select country (e.g., United Kingdom); select currency (e.g., USD). Study some of the ADRs using the functions on the fund's menus screen (Ticker <Equity> <Enter>).
41. Use SECF or EQS screen to search for stocks from countries other than the United States. SECF <Enter>; Equity tab; Common stock from Type tab; select country (e.g., United Kingdom, France, or China). Or, EQS <Enter>; click "Exchange" and then country. Study some of the stocks using the functions on the fund's menus screen (Ticker <Equity> <Enter>)
42. Bloomberg's QMC screen displays quotes from all of the domestic and foreign exchanges on which a selected stock trades. The screen can be used to identify a stock's primary market and its dual listings. Select a stock of interest and study its quotes: QMC <Enter>. You may want to use the "Exclude" tabs to include or excludes exchange with quotes in different currencies.
43. Information on Dodd-Frank Financial Regulatory Reform Bill can be accessed from the Bloomberg BLAW Platform: BLAW <Enter>; Click "8) PRAC BLAW Practice Areas; Click "10) "Dodd-Frank Legislation" to bring up a menu for accessing information on Dodd-Frank. Use the portal to learn about some of the legislation and the timetables for implementing some of regulatory changes called for in the bill.

### **Expected Return and Risk—Stock**

1. Select a stock of interest and examine its total returns for different periods and frequencies (daily, weekly, etc.) relative to the S&P 500 using the COMP screen: Stock Ticker <Equity> <Enter> and then click COMP.
2. Select a stock of interest and examine its price and volatility for different periods and frequencies using the GV screen. Stock Ticker <Equity> <Enter> and then click GV and select: the following:
  - a. Type: Price; Period: Daily; Select: Statistics check box to show Histogram window
  - b. Type: Historical Volatility; Level 30 Days; Period: Daily; Select: Statistics Histogram
3. Select a stock of interest and compare its historical volatility for different periods (30-day, 60-day, etc.) using the HVT screen.
4. Study the historical correlation over different periods of the top 10 stocks by market cap of the Dow Jones Average, the S&P 100, or some other index using the CORR screen. CORR <enter>; click the red "Create New" tab; click "Symmetric Matrix" box; click "Add from Source"; select "Equity Indexes (e.g., INDU, OEX, or SPX) under "Name" tab; Select "All," and click "Add.
5. Select a stock of interest and examine its historical regression with the S&P 500 over different periods and frequencies using the Beta screen: Stock Ticker <Equity> <Enter> and click BETA. In your examination note the stock's regression parameters, qualifiers, and adjusted beta. Find the stocks  $\beta_+$ ,  $\beta_-$ , and convexity by clicking Beta +/- checkbox on the BETA screen (on the new screen, click the red "Details" tab to find  $\beta_+$ ,  $\beta_-$ , and convexity).

6. Select a stock of interest and compare its beta, alpha, and systematic risk ( $R^2$ ) with its peers using the PC screen.
7. Use Bloomberg's Excel Add-in to download price data for a stock of interest and the S&P 500. Using Excel, run a regression of the stock's rates of return against the S&P 500 rates.
  - "Import Data"; "Real Time/Historical"; "Historical End of Day"
  - On the Bloomberg Data Wizard Box, Step 1, load Stock and SPX and click "Next."
  - On the Bloomberg Data Wizard box, Step 2, type price in the "Search Text" box and hit <Enter>. From the list, select Last Price and then click "Add" and "Next."
  - On the Bloomberg Data Wizard Box, Step 3, select time period (e.g., monthly) and time period; click "Next."
  - On the Bloomberg Data Wizard Box, Steps 4 and 5 accept "Set History Parameters" and pricing defaults and click "Next."
  - On the Bloomberg Data Wizard Box, Step 6, Box, accept Excel layout options and click "Finish" to export the data to Excel.
  - In Excel, calculate period rates (as proportional price changes) from your price data.
  - Use Excel regression command to run your regressions.
8. Use the MRA screen to run a multiple regression of the returns of a stock or index of interest. For your explanatory variables consider the S&P 500 (SPX <Index>) and long-term Treasury yields (USGG30YR <Index>): MRA <Enter>; select a set for inputting information; on the set screen select dependent and independent variables; save the set by typing 1 and hitting <Enter> and select the time period and frequency (daily, weekly, etc.) by hitting 2 <Enter>. For an example, see Bloomberg box: "MRA: Bloomberg's Multiple Regression Screen."
9. In early studies of factors determining a stock's P/e ratio, Elton and Gruber and Malkiel and Craig found the growth rates in DPS, beta, and dividend payout ratios to be significant in explaining stock P/e ratios. Using Bloomberg's Excel Add in for data and Excel regressions (found on Excel's "Data Analysis" Add in) conduct a cross section regression of stock P/e ratios against past or forecasted growth rates, betas, and dividend payout.
  - On the Bloomberg Add in, click "Real/Current" from the "Import Data" and "Real-Time/Historical" dropdowns
  - On the Bloomberg Data Wizard Box, Step 1, click "indices" in the "From" dropdown and the name of index (S&P 100) from the "Indices" dropdown, and then click "Add All". This will bring up the stocks for the index. Once loaded, click "Next."
  - On the Bloomberg Data Wizard box, Step 2, search and then add, stock returns (e.g., Price-to-earning (P/e), DDM implied growth rates, DDM dividend payout ratio in growth stage, adjusted beta
  - After loading variables, click "Next."
  - On the Bloomberg Data Wizard Box, Step 3, click "Finish" to export the data to Excel.

To run you regression, use the Bloomberg Excel Add-in: Click "Data and then "Data Analysis"; in Data Analysis Box: Click "Regression"; in the Regression Box: enter field for Return in "Input Y Range" box and enter field for explanatory variables in "Input X range" box; Click OK.

10. The EQRP screen shows a stocks risk premium. The premium is equal to a forecasted market risk premium  $E(R^M) - R_f$  times the stock's beta. The market risk premium on the EQRP screen is based on a forecasted market rate and a risk-free rate equal to the 10-year Treasury for the country and beta is the stock's historical beta. Using the screen, examine the risk premium for a stock of interest. Also examine the stock's historical premiums and betas.

## Portfolio Return and Risk

1. Select an equity investment fund of interest and examine its price and volatility for different periods and frequencies using the GV screen. Stock Ticker <Equity> <Enter> and then click GV and select: the following:

Select historical volatility and price from “Type” dropdown Price; Select: Statistics check box to show Histogram window

1. Select a stock of interest and compare its correlation with the market, systematic risk (use  $R^2$ ), alpha, and beta with its peers using the PC screen: Stock ticker <Equity> <Enter>; PC.
2. Study the historical correlation over different periods of the top 10 stocks by market cap making up the S&P 500 using the CORR screen. CORR <enter>; click the red “Create New” tab; click “Add from Source”; select “Equity Indexes and SPX under “Name” tab; Select “All,” and click “Add.
3. Use EQS to find stocks making up the S&P 500 or the Russell 300 with a market cap greater than \$15 billion and then import your stocks into PRTU to form a portfolio.
  - EQS <Enter>; from the Build/Edit Screen, select Standard and Poor’s 500 or Russell 3000 from the Indices tab; in the yellow ribbon box, type Market Cap and enter \$15B; save your screen.
  - PRTU <Enter>; click red “Create;” from Settings Screen, click “Actions” tab and then import stocks (on the settings screen, enable history; see Bloomberg exhibit box: Bloomberg Portfolio Screens for Evaluating Portfolios: PRTU and PORT).
  - Examine the betas, alphas, systematic risk ( $R^2$ ) of the stocks in your portfolio using the PC screen: Bring up the equity screen for one of the stocks in the portfolio (Stock Ticker <Equity> <Enter>); type in PC; on the PC screen, import your portfolio from the “Peer Source” yellow dropdown tab. On the PC screen choose a time period for you analysis and the select alpha, beta, and  $R^2$  from the Calculation dropdown tab.
  - Evaluate your portfolio’s past performance relative to an index (e.g., DJIA, INDU) using the PORT screen over different times periods: Performance tab, “Total Return,” “Portfolio vs Index” (e.g., INDU), Time = MTD, YTD, and Custom (for Custom, the select time period must match the period history of the portfolio created in PRTU).
  - Evaluate your portfolio’s performance relative to your index using PORT: Performance tab, “Statistical Summary,” “Portfolio vs Index” (e.g., INDU).
  - Examine the top news related to the stocks in your portfolio using the “Portfolio News Screen” (NPH) to see if there is any news to explain a stock’s performance.
  - Examine the top movers and lagers in your portfolio for different periods using the MRR screen: MRR <Enter>; select “Portfolio” from “Favorite” tab and select time period.
  - Check current prices and news for the stock in your portfolio using MOST: MOST <Enter>; load the stocks of your portfolio from the amber tab (left side of screen).
  - Using MMAP. study some the features of the stocks in your portfolio such as P/e, eps growth, beta, and total returns for different periods: MMAP <Enter>; select Portfolio from “Source” drop down, the name of your portfolio from “Name” dropdown, and characteristic from “Analyze” dropdown.
  - Use CACT and EVTS screen to see if there were any corporate actions and events that could explain performances of some of the stocks in your portfolio: CACT <Enter>, select Portfolio from “Source” drop down, the name of your portfolio from “Name” dropdown, and select time period.
4. The performances of funds by type can be found on the Bloomberg Fund Heat Map Screen, FMAP.
  - Use the screen to identify several equity funds: FMAP <Enter>, click “Objective” in “View By” dropdown and United States in “Region” dropdown, and then click “Equity” and type (e.g. Index). Select one of the funds and study it (the fund’s ticker can be found on the description page) using the functions on the fund’s menus screen (Fund Ticker <Equity> <Enter>). Functions to include: DES, historical fund analysis (HFA), and price graph (GP).

- Evaluate the fund using the Holdings, Performance, and Characteristics tabs on the fund’s PORT screen.
  - Examine the fund’s total returns for different periods and frequencies relative to the S&P 500, Russell 3000, other indexes, and other funds using the COMP screen: Fund Ticker <Equity> <Enter> and then click COMP
  - Using the HRA or Beta screen, determine the fund’s characteristic line with the S&P 500, its systematic risk ( $R^2$ ), and unsystematic risk.
  - Using your selected fund’s RV screen, compare the fund with other similar funds in terms of Sharpe, Treynor, and Jensen ranking indexes. On the RV screen, click the custom tab and then type in Sharpe, Treynor, and Jensen to find those indexes.
5. The FSCO screen scores and rank funds belonging to the same peer group based on a combination of weighted indicators. Select a fund style Using FSCO select a fund style and category (e.g., open-end, growth, large Cap fund domiciled in the U.S.), and then score and them them in terms of indexes (e.g., Sharpe, Treynor, and Jensen indexes).
  6. Select one of the top-ranked funds you identified in Exercise 6 and evaluate it using PORT. In your evaluation, use some of the following PORT tabs:
    - a. Holdings tab, “by none”
    - b. Holdings tab, “by GIC Sectors”
    - c. Holdings tab, “by Market Cap”
    - d. Characteristics tab, “Main View,” “Portfolio vs Index (e.g., INDU), “by GIC Sectors”
    - e. Characteristics tab, “Main View,” “Portfolio vs Index” (e.g., INDU), “by GIC Sectors”
    - f. Performance tab, “Main View,” “Portfolio vs None”
    - g. Performance tab, “Total Return,” “Portfolio vs Index” (e.g., INDU), Time = MTD, YTD, and Custom (for Custom, the select time period must match the period history of the portfolio created in PRTU).
    - h. Performance tab, “Statistical Summary,” “Portfolio vs Index” (e.g., INDU)
    - i. Performance tab, “Seasonal Analysis”
    - j. Performance tab, “Period Analysis”
    - k. Attribution tab, “Main View,” “Portfolio vs None,” Time = MTD, YTD, and Custom
    - l. Attribution tab, “Main View,” “Portfolio vs None,” Time = MTD, YTD, and Custom
    - m. Attribution tab, “Attribution Summary,” “Portfolio vs None,” Time + MTD, YTD, and Custom
    - n. Attribution tab, “Attribution Summary,” “Portfolio vs Index” (e.g., INDU), Time = MTD, YTD, and Custom
  7. Use the Bloomberg fund search screen, FSRC, to search for the following open-end equity fund: Fund Type: Open-End; Classification (Fund Asset Class Focus): Equity; Classification (General Attribute): Index Fund; Country of Domicile: United States; Screening Criteria (enter in amber box): total return for one year of greater than X% (e.g., 20%). You may want to save the search. To do so, go to the “Action” tab and click “Save as.”
    - Using this screen, examine several of the funds. Select one of the funds and study it using the functions on the fund’s menus screen (Fund Ticker <Equity> <Enter>). Functions to include: DES, fund holdings (MHD), Beta or HRA, relative valuation (RV), and price graph (GP).
    - Examine the fund’s total returns for different periods and frequencies relative to the S&P 500 using the COMP screen: Fund Ticker <Equity> <Enter> and then click COMP.
    - Evaluate the fund’s performance using PORT. Performance tab, “Total Return,” “Portfolio vs Index” (e.g., INDU), Time = MTD, YTD, and Custom (for Custom, the select time period must match the period history of the portfolio created in PRTU).Performance tab, “Statistical Summary,” “Portfolio vs Index” (e.g., INDU).
    - Using your selected fund’s RV screen, compare the fund with other similar funds in terms of Sharpe, Treynor, and Jensen ranking indexes. On the RV screen, click the custom tab and then type in Sharpe, Treynor, and Jensen to find those indexes.
  8. Use the Bloomberg advanced PSRT screen to search for an equity mutual fund in a particular area (country or city) and then analyze the fund using PORT: PSRT <Enter>; Mutual Funds (Source); Click “Metro Area”; click fund’s name; click portfolio analytics to bring up the PORT screen.

9. Construct your own equity portfolio and then analyze it using PORT. In constructing your own portfolio, consider using the equity search screen (EQS), FMAP to identify stocks that make up different types of funds, or the stocks making up indexes. In your PORT analysis, include some of the following tabs:
  - Holdings tab, “by none”
  - Holdings tab, “by GIC Sectors”
  - Holdings tab, “by Market Cap”
  - Characteristics tab, “Main View,” “Portfolio vs Index (e.g., INDU), “by GIC Sectors”
  - Characteristics tab, “Main View,” “Portfolio vs Index” (e.g., INDU), “by GIC Sectors”
  - Performance tab, “Main View,” “Portfolio vs None”
  - Performance tab, “Total Return,” “Portfolio vs Index” (e.g., INDU), Time = MTD, YTD, and Custom (for Custom, the select time period must match the period history of the portfolio created in PRTU).
  - Performance tab, “Statistical Summary,” “Portfolio vs Index” (e.g., INDU)
  - Performance tab, “Seasonal Analysis”
  - Performance tab, “Period Analysis”
  - Attribution tab, “Main View,” “Portfolio vs None,” Time = MTD, YTD, and Custom
  - Attribution tab, “Main View,” “Portfolio vs None,” Time = MTD, YTD, and Custom
  - Attribution tab, “Attribution Summary,” “Portfolio vs None,” Time + MTD, YTD, and Custom
  - Attribution tab, “Attribution Summary,” “Portfolio vs Index” (e.g., INDU), Time = MTD, YTD, and Custom

Create a Launchpad view with pages for one of the portfolios you created in this chapter or for a fund or index. See Chapter 2 for a guide in setting up a Launchpad.

- BLP <Enter>
- On Launchpad toolbar, click “View” to bring up the toolbar showing the tabs with Views, Pages, Setting, and Tools.
- To import a portfolio, index, or search: Click the “Browser” tab, “Monitor” and the “Launch Component” to bring up a stock monitor screen. This will bring up a box where you can select from a source: portfolios (PRTU), equity searches (EQS), equity indexes, fund screens (FSCR), Bloomberg peers, and other sources.

### Markowitz Portfolio Selection

1. Construct a portfolio in PRTU consisting of one share in each of the DJIA stocks: PRTU <Enter>; click red “Create;” from Settings Screen, click “Import” from “Actions” tab, select “Equity Index” from “Source” dropdown and INDU from the “Name” dropdown.
  - a. Use the Markowitz Excel program (available from text’s Web Site; see Bloomberg box: “Markowitz Excel Program) to determine the best efficient portfolio using the Elton, Gruber, and Padberg algorithm. In constructing your Markowitz portfolio, consider the time period from 2008 (just after the market crash) to the present, the S&P 500 as the market index, weekly periods for your data calculations, and the 10-year Treasury for your risk-free security.
  - b. Analyze the stocks selected in terms of their alphas, betas, and Treynor index rankings. This information can be found in the “Calculation sheet 2” in the Markowitz Excel Program.
  - c. Create a Markowitz DJIA portfolio in PRTU. In constructing the portfolio, use fixed weights: PRTU <Enter>; click red “Create” tab; from the Settings Screen click “Fixed Weight” in the Position Type dropdown. On the stock input screen, use the Markowitz weights. Create a history for the portfolios (See the box below in the Bloomberg Exercises: “Creating Historical Data for Portfolios in PRTU.”
  - d. Using the PORT screen, examine the historical performance of your Markowitz portfolio relative to the DJIA for different time periods. PORT <Enter>, select “INDU” for comparison, click Performance tab, Total Return tab, and then select time period for analysis.
  - e. Comment on the performance of your portfolio relative to the index.

- f. Regress your portfolio's return against the S&P 500. Use the CIXB screen to put your portfolio in a basket and then use HRA (see Bloomberg Exhibit Box: Portfolio Regression, Bloomberg CIXB Screen).
- g. Comment on your portfolio's alphas and its systematic and unsystematic risk.

#### Creating Historical Data for Portfolios in PRTU

Bring up the PRTU screen for your portfolio. On the screen, change the date in the amber "Date" box (e.g. Month/Day/2006). You should see the stocks disappear from the screen. Click the "Edit" tab and then the "Actions" tab. From the "Actions" dropdown, select "Import" to bring up the import box. On the import box, select "Portfolio" from the "Source" dropdown, the name of your portfolio from the "Name" dropdown, change the date (e.g., back to the current period), hit the "Import" tab, and then click Save." You should now have a portfolio with historical data.

2. Using the stocks identified in your Markowitz DJA portfolio in Exercise 1, generate an efficiency frontier for the stocks using Bloomberg's Asset Allocation Optimizer Template. To download the program you may want to use DAPI: DAPI <Enter> and click "Excel Template Library," "Equity," "Portfolios," and "Asset Allocation Optimizer." For the DJA stocks, select no more than twelve stocks identified using the Markowitz Excel Program, choose a similar time period as you did in Exercise 1, set each stock's minimum weight to zero, and maximum weight to 99%, and use the average risk-free rate for the period. Consider inputting as your stock expected return, the returns calculated from the Markowitz Excel Program (see Calculation sheet 2" in the Markowitz Excel Program. for stock returns).
3. Study the characteristics of some the stocks comprising the DJIA or the stocks of one of Markowitz portfolio you constructed in Exercises 1 or 2 in terms of their  $R^2$ 's, alphas, betas and  $V(\epsilon)$ 's using Bloomberg's PC screen (PC <Enter>). On the PC screen, examine the  $R^2$ 's, alphas, betas and  $V(\epsilon)$ 's over different time periods. Note:  $V(\epsilon) = V(r) (1 - R^2)$ .

To create a PC screen for the DJIA (or your portfolio), use the PC screen for one of stocks in the DJIA (portfolio) (e.g. IBM) and then type: IBM <Equity> PC <Enter>. On the PC screen, you can import the index (portfolio) from the "Peer Source" tab by clicking "Equity Index" ("Portfolio") and then INDU (name of your portfolio) from the "Name source tab. You may want to use the edit screen to delete some of the stocks and indexes. Use the edit screen to also add an index (e.g., S&P 500) to the rows for stocks in order to have its variance. After saving your edited screen, you can set the time period for your analysis. Alphas and betas for each stock for the selected time period can be accessed from the "Calculation" tab and exported to Excel from the "Export" tab (upper right corner). Each stock's variance of the error,  $V(\epsilon)$ , can be calculated from the stock's  $R^2$  and its variance using the stock variances (found by clicking "Covariance" and R2 from the "Calculation" tab.

4. Stock rankings:
  - a. Estimate the expected returns for each of the stocks you analyzed in Bloomberg Exercise 3 using the Bloomberg DDM model (see Bloomberg Exhibit in Chapter 3: Bloomberg DDM Screen).
  - b. Given your expected return estimates for each stock, estimate their betas and then determine the risk-free rate (e.g., current 10-year Treasury yield; see Bloomberg FIT screen). For beta, you may want to use the stock's adjusted beta (found on the stock's beta screen) or a beta from one of the PC screen calculations you made in Exercise 4.
  - c. Given your stocks' expected returns and betas and the risk-free rate, rank the stocks using the Treynor index.
5. Using Bloomberg's CORR screen, select 10 stocks to analyze from the DJIA: CORR <Enter>; click red "Create New" tab; select data time periods (e.g., daily, last seven years); on the "Matrix Securities" box, click the "Add from Sources" tab and then click "Equity Indexes from "Source" dropdown and INDU from the "Name" dropdown; add 10 of the DJIA stock from the list appearing in the right box; click "Update."

- a. On the CORR screen for your 10 stocks, select a data time period for analysis and then select “Covariance” from the “Calculation” tab to bring up the variance-covariance matrix. Export the matrix to Excel (click “Export to Excel” from the “Export” tab in upper right corner).
  - b. In Excel, create a coefficient matrix A from the variance-covariance matrix that you exported from Bloomberg. For your stock expected return, use averages or formulate your own expected returns.
  - c. Using the math approach for portfolio variance minimization, solve for the allocations for several efficient portfolios. Use Excel and the Excel matrix multiplication commands (see Appendix 8a and the Bloomberg Box: “Using the Bloomberg CORR Screen and Excel to Determine Markowitz Efficient Portfolios”).
  - d. Comment on your results and the limitations of using the math approach to solve for Markowitz efficient portfolio.
6. Use EQS to find stocks making up the S&P 500 with a market cap greater than \$15 billion and then import your stocks into PRTU to form an equally allocated portfolio.
- EQS <Enter>; from the Build/Edit Screen, select Standard and Poor’s 500 from the Indices tab; in the amber ribbon box, type Market Cap and enter \$15B; save your screen.
  - PRTU <Enter>; On Setting screen, select “Fixed Weights” from the Position Type dropdown ; from Settings Screen, click “Actions” and “Import,” and then select “Equity Search (EQS)” from Source dropdown and the Name of your search from the Source dropdown.
  - Create history for your portfolio (See the box in the exercises, “Creating Historical Data for Portfolios in PRTU”)
- a. Examine the correlation of the stocks in your portfolio using the PC screen: Bring up the equity screen for one of the stocks in the portfolio (Stock Ticker <Equity> <Enter>); type in PC; on the PC screen, import your portfolio from the “Peer Source” yellow dropdown tab.
  - b. Evaluate your portfolio using tabs on the PORT screen
  - c. Evaluate the performance of your portfolio using the “Performance” tab on the PORT screen.
  - d. Examine the top movers and lagers in your portfolio for different periods using the MRR: MRR <Enter>; select “Portfolio” from the “Source” dropdown and find your portfolio from the “Name” dropdown.
  - e. Examine your portfolio’s regression relation with the S&P 500, its historical total return relative to the S&P 500, and its price graph by importing your portfolio to a basket using CIXB and then using the HRA, COMP, and GP screens. See Bloomberg Exhibit Box: Portfolio Regression, Bloomberg CIXB Screen.
7. Apply the MRR screen to the portfolio you constructed in Exercise 6 to identify the top movers over the past year. Construct a portfolio in PRTU consisting of one share of each of your top stocks. Using the Markowitz Excel program, determine the best efficient portfolio from those stocks. Using the Markowitz-determined weights, set up a Markowitz portfolio in PRTU and evaluate the portfolio’s performance relative to market and relative to the portfolio you formed in Exercise 6.
8. Bloomberg’s FMAP screen provides information on investment funds by category, areas, performance, and type.
- a. Using FMAP, examine several equity funds in different categories.
  - b. Select a U. S. equity fund with a certain investment style (e.g., Value and large Cap) and study it using the functions on the fund’s menu screen: FMAP <Enter>; select “Objective” from “View by” dropdown and United States from “All Region” dropdown; click equity from the listing on the right-side of FMAP box, and then select type and the fund. To examine the fund go to the fund’s menu screen: Fund Ticker <Equity> <Enter>. Screens on the fund’s menu screen to consider: DES, historical fund analysis (HFA), fund holdings (MHD), price graph (GP), and comparative returns (COMP).
  - c. Examine the fund you selected in 8b in more detail using the PORT screen.
9. Form a portfolio in PRTU consisting of some of the stocks of your selected fund in Exercise 8. For an easy way to load securities of the fund into PRTU, see the Bloomberg box in this exercise section: Dragging and Dropping Securities from MHD into PRTU. Your portfolio could consist of one share or 1,000 shares of each

stock or you can determine an equal allocation for each. In forming your portfolio in PRTU be sure to also create history (see Bloomberg Box in this exercise section: Creating Historical Data for Portfolios in PRTU).

- a. Using PORT, evaluate the historical performance your portfolio relative to an index.
  - b. Using the CORR screen, create a CORR screen by importing the portfolio: CORR <Enter>; click “Create New” tab; select data time period; in the “Matrix Securities” unclick “Symmetric Matrix” button, import portfolio from “Add from Source” tab and click update; in Column Securities Box, add stock index (e.g., S&P 500) by typing index ticker and index moniker (e.g., SPX <Index>) and then click the “Next” tab; name your CORR Screen.
  - c. On your portfolio’s CORR screen, evaluate the stocks’  $R^2$ , alphas, and betas.
  - d. Determine the best efficient portfolio using the Markowitz Excel Program (Elton, Gruber, and Padberg Technique). Consider selecting a time period from 2008 to the present.
10. Table 10P shows 20 equity investment funds with different equity styles.
- a. Study the policy statement for several of the fund found on the fund’s description page: Ticker <Equity> <Return>; DES.
  - b. Create a portfolio of the funds in PRTU and analyze it using the PORT screen.
  - c. Create a basket of portfolio returns and make it an index using CIXB. As an index, use HRA to determine the portfolio’s regression relation with the S&P 500.
  - d. Examine each fund’s alpha, beta, and  $R^2$  using The CORR Screen:: Enter CORR <Enter>; click “Create New” tab; select data time period; in the “Matrix Securities” unclick “Symmetric Matrix” button, import portfolio from “Add from Source” tab and click update; in Column Securities Box, add stock index (e.g., S&P 500) by typing index ticker and index moniker (e.g., SPX <Index>) and then click the “Next” tab; name your CORR Screen. On your portfolio’s CORR screen select the data time period for analysis and then use the Calculation tab to find each stocks  $R^2$ , alphas, and betas.
  - e. Use the Markowitz Excel Program to determine the best efficient portfolio. Consider using a more recent historical data period.

Table 10P

Ticker	Name
BTO US Equity	JOHN HANCOCK FINANCIAL OPPOR
CHN US Equity	CHINA FUND INC
CISGX US Equity	TOUCHSTONE SANDS CAP INC GRW
EISMX US Equity	EATON VANCE-ATLANTA SMID-I
FCPVX US Equity	FIDELITY SMALL CAP VALUE-I
FEN US Equity	FIRST TRUST ENERGY INCOME AN
FMFAX US Equity	FIDELITY ADVISOR MATERIAL-A
FRIFX US Equity	FIDELITY REAL ESTATE INCOME
FSGRX US Equity	FRANKLIN SMALL CAP GRW FD-A
HCPIX US Equity	PROFUNDS HEALTH CARE ULTR-IV
JCE US Equity	NUVEEN CORE EQUITY ALPHA FUN
JTIVX US Equity	JPMORGAN INTL VALUE SMA
MAPCX US Equity	BLACKROCK PACIFIC FUND-I
MERDX US Equity	MERIDIAN GROWTH FUND INC
MFVSX UQ Equity	MASSMUTUAL SEL FOC VALUE-S
OSMAX US Equity	OPPENHEIMER INTL SMALL CO-A
PEUGX US Equity	PUTNAM EUROPE EQUITY FUND-A
RYZAX US Equity	RYDEX LARGE CAP VALUE FUND-H
VINAX US Equity	VANGUARD INDUSTRIALS IDX-ADM
VUIAX US Equity	VANGUARD UTILITIES INDEX-ADM

11. Create your own fund of funds portfolio:
  - a. Using the FMAP screen, select funds with different styles: FMAP <Enter>; View by = Objective; Region = United States; Analyze by = Last 3-Year Total Return.
  - b. Create a portfolio of your funds in PRTU and analyze the portfolio using PORT.
  - c. Create a basket of your portfolio returns and make it an index in CIXB. As an index, use HRA to determine its regression relation with the S&P 500.
  - d. Examine each fund's alpha, beta, and  $R^2$  using The CORR Screen:: Enter CORR <Enter>; click "Create New" tab; select data time period; in the "Matrix Securities" unclick "Symmetric Matrix" button, import portfolio from "Add from Source" tab and click update; in Column Securities Box, add stock index (e.g., S&P 500) by typing index ticker and index moniker (e.g., SPX <Index>) and then click the "Next" tab; name your CORR Screen. On your portfolio's CORR screen select the data time period for analysis and then use the Calculation tab to find each stocks  $R^2$ , alphas, and betas.
  - e. Use the Markowitz Excel Program to determine the best efficient portfolio. Consider using a more recent historical data period.
  
12. Examine a portfolio you formed in one of the exercises (or some other portfolio you have formed) in terms of the portfolio's regression relation with the S&P 500, its historical total return relative to the S&P 500, and its price graph. Import your portfolio to a basket and make it an index using CIXB and then use the HRA, COMP, and GP screens on the index menu created for your portfolio. Comment on the portfolio's systematic and unsystematic risk and its alpha.

Create a CORR screen for your portfolio to evaluate each stock's relationship to the market (S&P 500): CORR <Enter>; click "Create New" tab; select data time period; in the "Matrix Securities" unclick "Symmetric Matrix" button, import portfolio from "Add from Source" tab and click update; in Column Securities Box, add S&P 500 index by typing index ticker and index moniker (SPX <Index>) and then click the "Next" tab; name your CORR Screen.

On your portfolio's CORR screen, evaluate the stocks'  $R^2$ , alphas, and betas.

13. Use the MRA screen to run a multiple regression of the returns of a portfolio you formed in one of the exercises (or some other portfolio you have formed). For your explanatory variables consider the S&P 500 (SPX <Index>) and long-term Treasury yields (USGG30YR <Index>): MRA <Enter>; select a set for inputting information; on the set screen select dependent and independent variables; save the set by typing 1 and hitting <Enter> and select the time period and frequency (daily, weekly, etc.) by hitting 2 <Enter>. For an example, see Bloomberg box in Chapter 6: "MRA: Bloomberg's Multiple Regression Screen."

### **CAPM and APT**

1. Use Bloomberg FMAP screen, FSRC, or SECF (see "Bloomberg Fund Search Box" in this exercise section) to select a number of different types of equity funds, such as, index, value, growth, small-cap, and large cap fund.: See Bloomberg Box: "Bloomberg: An Application of First- and Second-Pass Tests."
  - a. Conduct a first-pass test for each fund using the HRA screen by regressing the fund's returns against the market returns (use S&P 500 (SPX), Russell 3000 (RAY) and select a data time period you think is appropriate.
  - b. Comment on your regression findings. Based on your findings, comment on the CAPM premise: "Investors with a portfolio can diversify away unsystematic risk."
  - c. Using the Fund's COMP screen as a guide, determine each fund's total return. On the COMP screen, specified the data time period and then use the annualized return appearing in the upper right corner of the screen.
  - d. Using Excel, conduct a second-pass test with the returns and betas you found in 1a and 1b. See Bloomberg Exhibit Box: Bloomberg: An Application of First- and Second-Pass Test."

Bloomberg Funds Search:

- FMAP <Enter>
  - FSRC Search: Show Search Screen with search for index funds with S&P 500.
  - Show results of search.
  - Show the search in RV with performance rank
  - SECF: Click Funds Tab
  - RUSS <Enter>; Click “Russell Index Ticker” to bring up a PDF with Ticker listing.
  - SPX <Enter> to bring up screen for identifying S&P indexes and tickers
2. Create a portfolio of different types of indexes. To find a listing of different types of Russell indices go to the Russell page (RUSS <Enter> and click “Russell Index” to bring up a PDF with a listing of Russell indexes. For S&P indices, enter: SPX <Enter> and click “Style Indexes” or U.S. Pure Style.” Indices can also be found using the SECF screen.
    - a. Use the CORR screen to create a non-symmetrical matrix of your indexes: CORR <Enter>; click Create tab; enter data time period; enter index’s ticker in the row matrix and the S&P 500 (SPX) in the column matrix. Compare the  $R^2$ ’s betas, and alphas of the indexes. Comment on the systematic and unsystematic risk you observe for the indexes.
    - b. Examine several of your indexes using the HRA or beta screen: Fund Ticker <Index> <Enter>; HRA. You may want to consider the period from 2008 to the present.
    - c. Find the total returns for the indexes you analyzed in 2b using the fund’s COMP screen. The annualized return appears in the right corner of the screen. Consider the period from 2008 to the present.
  3. Generate a graph of the portfolio return and beta combination obtained from the market portfolio and the risk-free security. For the market portfolio, calculate the average return for the S&P 500 (SPX), and for the risk-free rate, use the average yield for 10-year U.S. Treasury (USGG10yr). For the S&P 500, you may want to use the S&P 500 COMP screen (SPX <Index> <Enter>; COMP) and consider the period from 2008 to the present. For the 10-year Treasury yield, you may want to use the average yield for the same period (USGG10yr <Index>; GP screen; Ask yield, and look for average in the screen’s summary box).
    - a. Are the return and beta combinations of the indexes you analyzed in 2c above or below the line you generated? Explain the arbitrage portfolio, you would construct if an index is not on the line.
    - b. Comment on the following statement: “If all securities and investments are explained by just two factors—expected return and beta—then all of the equilibrium return and beta combinations available in the market can be generated from the return and beta combinations formed from any two investments.”
  4. The RVC displays scatter data for a security (stock or fund) and its peer group. The screen allows you to select from a variety of analysis criteria and peer group types and sizes. Select a stock or investment fund and then use it RVC screen to create an ex post return and beta space for identifying and stocks or funds with abnormal returns. For example, see the Bloomberg exhibit box: “Bloomberg RVC Screen—Return-Beta Space.”
  5. Select a number of stocks to analyze using the Wells Fargo Stock Selection Approach. In selecting your stocks, you may want to consider some of the stocks that make up an index or all the stocks that are included in the Dow.
    - a. Use Bloomberg’s DDM model to estimate each of your stock’s return (IRR). You can use Bloomberg’s default assumptions used in their DDM model or change them.
    - b. Use the Bloomberg’s Beta screen for each of your stocks to estimate their betas. Select a time period you think is appropriate and use either the raw beta or adjusted beta.

- c. Estimate an ex-ante SML relation by running a cross sectional regression of the returns and betas of your stocks. To use Excel for your regressions, see Bloomberg Exhibit Box: Bloomberg: An Application of First- and Second-Pass Test.”
  - d. Calculate the excess return of each stock to determine which stock you would include in your portfolio.
6. Use the Bloomberg Excel Add-in to run a second-pass test in Excel. Consider: for your stocks, the stocks comprising the DJIA or the S&P, for rates of return, the internal rates of return calculated from Bloomberg’s DDM model, and for betas, the stocks’ adjusted betas. See Bloomberg exhibit box, “An Application of First- and Second-Pass Test,” for an example of using regression analysis in Excel. For a guide to using the Bloomberg Excel Add-in, see Bloomberg box: Applying the Well-Fargo Approach Using Bloomberg’s DDM Model and Adjusted Betas.
  7. The EQR screen shows a stock’s risk premium. The premium is equal to a forecasted market risk premium  $E(R^M) - R_f$  times the stock’s beta. The forecasted market risk premium on the EQR screen is based on a forecasted market rate and a risk-free rate equal to the 10-year Treasury for the country, and beta is the stock’s historical beta.
    - a. Using the screen, examine the risk premium for a stock of interest. Also examine the stock’s historical premiums and betas.
    - b. Use BBT to find the current rate on 10-year Treasuries as an estimate of a risk-free rate.
    - c. Given the stock’s equity risk premium and the risk-free rate, determine your stock’s equilibrium return.
    - d. Define the SML in terms of the market risk premium and risk-free rate.
  8. French and Fama argue that firms with high ratios of book-to-market value are likely to be in more financial stress than firms with low ratios. Altman’s Z score (discussed in Chapter 3) is a measure of a company’s likelihood of default. Examine the significance of financial stress in determining equilibrium returns by conducting a second-pass test of stocks returns explained by their betas and Altman’s Z-scores.

To run your regression, use the Bloomberg Excel Add-in to run the second-pass test in Excel. Consider: for your stocks, the stocks comprising the DJIA or the S&P 100 or 500, for rates of return, the internal rates of return calculated from Bloomberg’s DDM model, for betas, the stocks’ adjusted betas, and then use Altman’s Z-score. For an example on using multiple regression analysis in Excel, see the Excel table in the Bloomberg exhibit box, “Bloomberg Excel Add-In: Second-Pass Test for Multi-Factor Models

9. In an early study of the CAPM, Fama and MacBeth found the market risk premium to be significant in explaining equilibrium returns but found residual errors not significant. Their study provided support that that systematic risk is the only relevant factor in determining an investment’s equilibrium return. Using a second-pass test, re-examine Fama and MacBeth findings.

To run your regression, use the Bloomberg Excel Add-in to run the second-pass test in Excel. Consider: for your stocks, the stocks comprising the DJIA, the S&P 100 or S&P 500, for your rates of return, the internal rates of return calculated from Bloomberg’s DDM model, for your betas, the stocks’ adjusted betas, and for your unsystematic risk, the standard deviation of the errors. For an example on using multiple regression analysis in Excel, see the Excel table in the Bloomberg exhibit box, “Bloomberg Excel Add-In: Second-Pass Test for Multi-Factor Models

10. William Sharpe in a 1970s study identified market returns and long-term bond rates as being significant in explaining equilibrium returns. Using Bloomberg’s MRA screen, conduct a multiple regression analysis for several stocks using proportional changes in the S&P 500 (SPX) as a measure of the market rate and proportional changes in the yields on 30-year Treasuries (USGG30YR).

To use MRA:

- MRA <Enter>; Click MRA Run
- Fill in fields in the “Multiple Regression Creation Box:” for dependent variable stock ticker <Equity>; for independent variables: SPX <Index> and USGG30YR <Index>; for Column fields: Percent (P) for Data, Close (C) for Value, and None (N) for Log Type; Click Menu or Enter 1 <Go> to save
- Click your saved MRA run to bring up Multiple Regression Analysis Box
- In Multiple Regression Box, enter data range and Period (e.g., Month) and hit <Enter> to see regression results

## Fundamental Analysis

1. Select a company and do comparative analysis of it with its peers using the Bloomberg RV screen. Tabs to consider:
  - a. Comp Sheets tab and Balance Sheets tab
  - b. Comp Sheets tab and Profitability tab
2. Select a company and do comparative analysis of it with its peers using the Bloomberg RV screen. Use the custom tab to enter names of items for your comparison. You may want to save your custom screens. Consider the following leverage and income-statement screen to customize:
  - a. Leverage: Debt-to-assets, common-equity-to-assets, debt-to-equity.
  - b. Income-Statement: Sales growth and earnings growth
3. Bloomberg has a number of earnings screens that provide history, consensus forecast, surprises, and Zach earnings forecast. Study some of the following earnings screens for a company of interest:
  - a. EEO Current Consensus
  - b. EEB Best Consensus Detail
  - c. ERN: Earnings History
  - d. EE: Earnings and Estimates
  - e. EM: Earnings Trends
  - f. EE SURP: Earnings Surprises
  - g. EE Z: Zach’s Earnings Estimates
4. Select a stock of interest or one you already selected in one of the exercises and its DVD screen to study trend in the company’s dividend payments..
5. Bloomberg’s measure of sustainable growth is the company’s retention ratio times its return on equity. Do a relative analysis of company’s sustainable growth using the RV screen. Customize your screen by creating columns for sustainable growth, the retention ratio, and the return on equity.
6. Bloomberg information on corporate actions such as acquisitions and limited partnership deals can be accessed on the CACS screen found on the company’s equity menu. Select a company of interest that you know has been active in acquisitions and divestures and use CACS to search for its previous activities.
7. Value a stock of interest using the DDM model using a three-stage growth model, constant-growth model, and two stage model: Ticker <Equity> <Enter>; DDM. For a guide, see Bloomberg exhibit box: “Bloomberg DDM Screen.”
  - a. For several of your stocks, examine the impact on the stock’s value when you change the discount rate, the growth rate for the growth years, and the growth rate for the mature stage.
  - b. Given the current prices of your stocks, compare their IRR’s to their required returns. Comment on what stocks you believe would be good investments and which would be bad.

8. Excel Exercise: Create an Excel Spread sheet for determining the intrinsic value of the stocks you analyzed in Exercise 9 or 12 using the DDM model (see Bloomberg exhibit box: “Bloomberg DDM” for a guide).
9. The Bloomberg MA screen allows you to analyze previous mergers and acquisitions. Select a stock of interest (enter company name in “Company Search” on the MA screen) and review one of its completed acquisitions. On the MA Deal screen, analyze the deal using the following tabs: Summary, Timeline, Parties, Structure, Approvals, Financials, and Arbitrage. Study the impact the acquisition had on the stock price of the acquiring firm and the target firm. Use the GP graphs for each company and set the time period to include time before and after the announcement and acquisition.
10. The Bloomberg MA screen allows you to analyze and track possible and pending deals. Select one of the proposed or pending deals identified on the MA screen and study the current proposal
11. Using the BI screen (BI <Enter>) select an industry and evaluate it using the following BI Screens
  - a. Comp Sheets
  - b. Drivers/Metrics
  - c. News/Research
  - d. Events
  - e. Data library
  - f. Analysis
12. Select one of the companies of interest from the industry you analyzed in Exercise 1 and evaluate by customizing the stock’s FA screen. Some customized screens to consider:
  - Earnings in terms of sales per share and profit margins
  - Multipliers: P/e , P/S, and P/EBIDA
  - Business Risk: margins
  - Financial risk: leverage ratios
  - Liquidity risk
13. Conduct a relative analysis of the company you selected in Exercise 2 with its peers by customizing the stocks’ RV screen. On the RV select the index for the peers from Comp source dropdown. Some custom screens you may want to consider:
  - Earnings in terms of sales per share and profit margins
  - Multipliers: P/e, P/S, and P/EBITDA
  - Business Risk: operating and profit margins
  - Financial risk: leverage ratios
  - Liquidity risk
  - Growth: Sustainable growth, payout ratios, and ROE
  - DuPont ratios
  - Valuation: DDM values and market prices
14. Select a group of stocks of interest. This could be from a portfolio you have already created, an index (broad-based, industry/sector specific), or stocks found from a search (EQS).
  - a. Conduct a relative analysis of the companies by customizing an RV screen showing the stocks’ DDM values, market prices, and economic value added (EVA). Bring up the RV screen for one of the stock’s in your group; on the RV screen, pull the other stocks from the Comp source dropdown (portfolio, index, or EQS search); customizes the screen creating columns for DDM value, EVA, and price.
  - b. Identify the stocks that are underpriced and have positive EVAs as possible buy recommendations.
  - c. Compare each stock you have identified as buy recommendation with the analysts’ recommendation for that stock found on the stock’s EE and ANR screens.

- d. Conduct a SWOT analysis of one of your buy stocks. Possible screens you may want to use to obtain information to conduct your SWOT analysis:
- BI: Bloomberg's BI screen for analysis of the industry
  - CF: Company's 10-K reports (CF screen found on the stock's screen)
  - SPLC: Supply chain
  - RSKC: Risk
  - DRSK: credit risk
  - LITI: litigation
  - CN: company news
  - BRC: company research
15. Select one of the companies in the group of stocks you analyzed in Exercise 4 (or another stock of interest) and forecast its EPS forward for the next 12 months using the EPS\_PE\_Estimator Excel program found on the text's Website. See Bloomberg Exhibit box: "Bloomberg: EPS\_PE\_Estimator Excel Program."
16. Screen and search for stocks using the EQS screen that meet some of the Warren Buffet Tenets, such as consistent operating history, good ROE and low debt, high profit margins, good cash position, and high EVAs. (see Exhibit 12.20).
- Screen by selecting an index and then setting the criteria for your search: market cap, ROE, profit margins, EVA (WACC EVA spread), and cash-to-sale ratio exceeding a certain percentage, and the debt/equity ratio being less than a certain percentage.
  - Analyze the stocks from your search using the RV screen for one of the stocks and importing your search from the Comp Source dropdown. Customize your screen to compare EVA, DDM values, and prices so that you can identify if the stocks are underpriced or overpriced.
17. Detailed Fundamental Analysis: Use Bloomberg to evaluate a stock of interest using fundamental analysis. Include in your analysis:
- (1) Full description of the stock: Include some of the information from the following screens:
- Des Description
  - RELS Related securities (e.g., debt, preferred stocks)
  - CF Company Filings (10-K)
  - HDS Majors holders of the stock
  - OWN Equity Ownership
  - SPLC Supply Chain
  - ISSD Issuer Description
  - DDIS Debt Distribution
  - AGGD Debt Holders
  - BRC Research on Company
  - RSKC Risk
  - DRSK Credit Risk
  - LITI Litigation
  - CACS HRA or Beta
- (2) Brief description of the stock's sector trends (Bloomberg BI screen) and comparison of the stock relative to a sector index and the market (SPX). Use Bloomberg's COMP screen found on the BI platform.
- (3) Relative analysis of the company's growth rate. Compare the company's growth rate and its components (retention rate and ROE or DuPont ratios) with a selected index. Use RV, FA, and/or GF.
- (4) Relative analysis of the company's risk: liquidity risk, business risk, financial risk, and bankruptcy risk. Use RV, FA, and/or GF.

- (5) Relative analysis of the company's P/e. Compare the company's historical P/e ratio with a peer index and the market (SPX). Use GF.
  - (6) Use your analysis of growth rates, risk, and relative P/e ratios to determine the stock's equilibrium P/e.
  - (7) Make a forecast of the company's EPS. Suggestion:  $EPS(1+g)$  or you can try the Excel multiplier program: The EPS\_PE\_Estimator Excel program.
  - (8) Compare your forecast with analysts' forecast (EE screen).
  - (9) Determine the stock's intrinsic value using the P/e multiplier approach:  $V = (P/e)(E(\text{eps}))$
  - (10) Make a forecast of the company's sales-per-share. Compare your forecast with analysts' forecast (EE screen).
  - (11) Determine the stock's intrinsic value using the P/S multiplier approach:  $V = (P/S)(E(\text{SPS}))$
  - (12) Determine if the stock is underpriced or overpriced
  - (13) Use Bloomberg DDM model to determine the stock's value. Change assumptions from Bloomberg's default assumption if you believe they are warranted. Compare your DDM value with the market price to see if the stock is underpriced or overprice.
  - (14) Make a buy, hold, or sell recommendation.
  - (15) Compare your recommendation with other analyst recommendation (ANR screen)
  - (16) Check the news on the stock and comment on your conviction about buying or not buying the stock.
  - (17) Launchpad: Create a Launchpad with useful screens for analyzing and monitoring your stock and its peers.
18. Excel Exercise: Create Excel tables for analyzing a group of stocks, portfolio, or index using the Bloomberg Excel Add-In. For a guide, see the Bloomberg exhibit box: "Bloomberg Excel Add-In." Possible Excel tables:
    - Different Bloomberg P/e ratios
    - Different multipliers
    - DDM, Price, and Value Added
    - Duration Growth Model
    - DuPont Ratios, Growth
    - Business, Financial, Liquidity, and Bankruptcy risk
  19. Excel Exercise: Create an Excel table of time series information needed to conduct a multiplier valuation on a stock of interest using the Bloomberg Excel Add-in. For a guide, see the Bloomberg exhibit box: "Bloomberg Excel Add-In." Variables to consider: P/e, P/S, SPS, profit margins, EPS, and DPS.
  20. Using the BI screen, select an industry sector and evaluate the sector using the following screens:
    - Comp Sheets
    - Drivers/Metrics
    - News/Research
    - Events
    - Data library
    - Analysis
  21. Analyze the industry sector you selected in Exercise 6 by examining the sector's index on the index's menu screen. Possible screens to examine:
    - DES                   Description
    - Mov                   Equity movers
    - GP                    Price graph (Activate events and volume)
    - FA                    Financials
    - GF                    Fundamental Graphs
    - TRA                  Total Return Analysis

- COMP                      Comparative Returns
22. Do a relative analysis of the companies in an industrial or peer index. The RV screen for companies in an industrial can be created by using the RV screen for one of companies and then importing the index from the Comp source dropdown on the company's RV screen.
  23. Do a relative analysis of the companies in the sector or industry index you selected in Exercise 8 by customizing the RV screen. Some custom screens you may want to consider:
    - Earnings in terms of sales per share and profit margins
    - Multipliers: P/e and P/S
    - Business Risk: margins
    - Financial risk: leverage ratios
    - Liquidity risk
    - Growth: Sustainable growth, payout ratios, and ROE
    - DuPont ratios
  24. Supply chain analysis:
    - a. Analyze the supply chain of a large market cap company (SPLC) in terms of its suppliers, customers, and peers.
    - b. Analyze the supply chain of the supplier with the greatest percentage of its revenue generated from your selected company.
    - c. Analyze the supply chain of the customer with the greatest percentage of its cost paid to your selected company.
    - d. Analyze one of the peers of your selected company to see if it has similar customers and suppliers.
    - e. Use your selected company's COMP screen to compare its total returns with the total returns to one of its suppliers and one of its customers.
  25. In the slow economic recovery following the 2008 financial crisis and recession, many companies had positive earnings and cash positions for the period from 2008 to 2012. Study this trend by examining the following ratios for the S&P 500 on Bloomberg's FA screen (SPX <Index>; FA):
    - Cash per share
    - EPS
    - Profit margins
    - ROE
    - ROA

You may want to customize your FA screen: Cash per Share, profit margin, EPS, ROE, and ROA.
  26. Analyze an equity portfolio that you have constructed (possibly one from an exercise in a previous chapter) in terms of its sector allocations relative to the allocations of broad-based index (DJIA, Russell 3000, or S&P 500). Use Bloomberg's PORT screen and the following tabs:
    - PORT, Performance tab, and Main View Tab
    - PORT, Characteristics tab, and Main View Tab
    - PORT, Characteristics tab, and Characteristics Summary tab
  27. Select a major currency (e.g., British pound, euro, yen, or Swiss franc) and study the dollar price of the currency over the last 10 years (currency ticker <CRNCY> <Enter>; GP).
- Questions:
- a. Identify periods in which a U.S. investor (dollar investor) could have made significant returns from investing in securities denominated in that currency.

- b. Identify periods in which a foreign investor (e.g., a British pound investor) could have made significant returns investing in dollar denominated securities.
- c. Identify periods in which a U.S. company with foreign sales would have had its products or services priced lower in the currency you selected. Identify periods in which its products or services would have been priced higher in that currency.
- d. Identify periods in which a U.S. company with inputs, resources, or goods purchased in the currency you selected would have had greater cost. Identify periods in which it would have had smaller cost.

## Technical Analysis

1. Select a stock of interest and evaluate its price trends on Bloomberg's GP screen over certain period of time (e.g., the most recent two years or the period before and after the financial crisis).
  - On the GP screen, use the "Annotate" button on the grey toolbar at the top of the price chart to bring up the annotations palette. On the palette, select regression from the pointer box (top right corner of the palette), span the regression pointer over the time period of interest and then click to create the regression band. Create several regression bands and study their beginning and ending prices and regression slope. To obtain information in a band area, move your cursor to band line to bring up an information box with price and regression information.
  - Select the peak and trough points on you graph and study the important news at those times. To find news, click the "News" button on the grey toolbar to bring up an orange vertical bar. Move the bar to a date of interest and then click to bring up a news box.
  - Examine some of the other drawing tools on the palette.
2. There have been two speculative-type bubbles over the last twenty years: the 1995-2000 Dot-Com bubble and the 2008 financial crisis. Using the GP graph, analyze the price trends of the Dow or S&P 500 around these periods.
  - On the GP screen, select moving averages and identify points where the price lines cross the moving average lines.
  - On the GP graph, select volume (drop down box in right corner) and identify the volume at different breakout points.
  - On the GP graph, select Put – Call volume (drop down box in right corner) and identify the volume at different breakout points.
  - Create an auto regression bands for the flat trends, downtrends, and uptrends. Click the "Annotate" button on the grey toolbar at the top of the price chart to bring up annotations palette. On the palette, select regression from the pointer box (top right corner of the palette), span the Regression pointer over the time period of interest and then click to create the regression band
  - Select primary reversal points on your graph and study the important news at those times. To find news, click the News button on the grey toolbar to bring up an orange vertical bar. Move the bar to a date of interest and then click to bring up a news box.
  - Save your graph to the G screen from the "Save as" tab.
3. On the Custom Chart Screen, you can create and customize charts representing different relationships. Use the Spread Chart screen to create a relative-strength ratio for a stock of interest: G <Enter>; click "Create Charts"; select "Spread Charts" and click next; in the Chart Wizard box, input you stock and market index (e.g., S&P 500, SPX), select ratio in the dropdown box, select time period, and then click finished. To save your graph to the G screen, click "Graph Library" in the Actions tab.
4. Bollinger bands are formed by creating lines that are two standard normal deviations above and below a 20-day or 30-day moving average. The usefulness of the bands is that the price of a security should remain within the bands 95% of the time provided the underlying variability does not change significantly. Create Bollinger bands for a stock or index of interest and a time period of interest. To bring up Bollinger screen for a loaded stock or

index, enter: Boll <Enter>. On the Bollinger screen, change the standard normal deviation from 2 to a lower deviation (e.g., 1.5 or 1) to see if the stock breaks away from its support or resistance. Length and shorten the moving average from 30-day to see if there are any breakouts.

5. Point-and-figure charts only show significant price changes, irrespective of the timing. The charts are set up to record significant price changes (e.g., 2 or 3 points) and indicate reversals. Point-and-figure charts that are horizontal would be considered trendless; those that are vertical and above the starting price would be an uptrend; those that are vertical and below the starting price would be a downtrend. Breakouts would be when the chart moves up or down after a trendless period. On Bloomberg's Point-and Figure Chart (PFP: PFP <Enter> for a loaded security), the "Box" size refers to the price scale (automatic or customized), and the "Reversal" is equal to a multiple of the box size and determines when you move to a new column. If the box size is 1 and the reversal is 2, then the price would have to move against the trend by 2 points to move to the next column. The numbers 1-9 and the letters A, B, and C on the PFP screen represents the months January through September and October through December.

Use the Bloomberg point-and-figure chart screen to evaluate the price trends of a stock or index of interest. For a loaded stock, type PFP and click <Enter>. Experiment with the PFP screen by changing the size of box and reversal multiplier.

6. Volume information can be used to better define the price trend. Typically, increasing volume and increasing price is a strong uptrend; increasing volume and falling price is a strong downtrend; decreasing volume and increasing price is a weak rally, and decreasing volume and decreasing price is a weak pullback. Select a stock or index of interest and a time period of interest and examine its price and volume to determine the strength or weakness of a trend. In examining price trends and volume, use the following screens
  - GP screen with the volume panel
  - Volume-at-time (VAT) screen: This screen shows prices along with trading volume, a moving average of volume, and the difference between volume and the average. You can select the number of days back to determine the moving average. To bring up the VAT screen for a loaded stock or index, type VAT.
7. When a strong buying surge pushes the price of a stock or index past its resistance level on heavy volume, then one could reasonably deduct that there is bullish information that will push the price further to a new resistance level. By contrast, if a price decrease surges past the support level on heavy volume, it is a strong sell signal. Select a stock or index of interest and a time period of interest and examine the volume patterns at breakout points. In retrospect, are the breakout signals correct? Study the important news around breakout point by clicking the "News" button on the grey toolbar to bring up an orange vertical bar. Move the bar to dates around the breakouts and then click to bring up a news box.
8. There are different types of volume measure, as well as technical studies that use volume. Volume screens used for studies can be accessed from Bloomberg's "Technical Study Browser" screen found on the Graph home page (Graph <Enter>) or directly by typing TECH: TECH <Enter> and typing "volume" in the find box. Use the Technical Browser screen to identify the different types of volume studies. To bring up a particular screen, press the launch tab.
9. Technicians identify a possible price trend reversal whenever a price line breaks its moving average line; such as, a reversal of a declining trend would be when prices start increasing such that the price line breaks through the moving average line from below. Moving averages can vary by length (30 days or 200 days) and periodicity (day or week). Use Bloomberg's moving average screen to create a moving average for a stock, index, and time period of interest. For a loaded stock or index, type GPO MA or use the GPMA screen (type GPMA). Once created, identify trends and reversals by comparing the price and moving average lines.

10. Moving average bands are used to identify resistance and support levels, and confirm a price reversal. Using Bloomberg's moving average envelope screen for a stock or index of interest, create a moving average band or envelope for a time period of interest and identify any breaks out from the band. To bring up the screen for a loaded stock or index, type GPO MAENV. Once created, look for trends and reversals. You may want to save your graph to the G screen; to do so, click the "Save as" tab.
11. There are different types of moving averages, such as simple, weighted, triangular, and exponential, as well as different technical studies that use moving averages. Moving average screens used for studies can be accessed from Bloomberg's "Technical Study Browser" screen found on the Graph home page (Graph <Enter>) or directly by typing TECH: TECH <Enter> and typing "moving average" in the find box. Use the Technical Browser screen to identify the different types of moving averages and moving average studies. To bring up a particular screen, click launch.
12. Breadth of the market, uptick-to-downtick index, and the CBOE put/call ratio are technical measures used to gauge the strength or weakness of the overall market. Do an in-depth technical analysis of the overall market (use S&P 500 or Dow) for a period of interest that includes the moving average bands and volume, as well as the breadth, upticks-to-downticks ratio, and put/call volume measures. Possible Bloomberg screens to include:
  - Bands, Moving-Average Envelopes Screen: For loaded index, type GPO MAENV
  - Volume: Volume-at-Time Screen: For loaded index, type VAT
  - Advance minus Decline: For loaded index, type GPO ADL
  - CBOE Put/Call Ratio Screen: PCUSEQTR <Index>; GP
  - Uptick-to-Downtick Index Price Graph Screen: For S&P 500: TIKX <Index>; GP; for Dow: TIKI <Index>; GP

Note: You may want to save these screens to the G screen so that you can apply them to other indexes, exchange rate, and the like.

13. Relative strength, the Erlanger put/call ratio and the short-interest ratio are technical measures used to gauge the strength or weakness of a stock's price trend. Do an in-depth technical analysis of a stock of interest for a time period of interest that includes the stock's moving average band and volume, as well as the relative strength, put/call volume, and short-interest measures. Possible Bloomberg screens to include:
  - Bands, Moving-Average Envelopes Screen: For loaded index, type GPO MAENV. You may want to save your moving average envelope screen to the G Screen.
  - Volume: Volume-at-Time Screen: For loaded index, type VAT
  - Erlanger Put/Call Ratio Screen: For loaded stock, type GPO ERPCR
  - Short-Interest Screen: For loaded stock, type SI
  - Relative Strength Ratio: Create the ratio of the price of the stock to the index using the G Screen: G <Enter>; click "Create Charts"; select "Spread Charts" and click next; in the Chart Wizard box, input your stock and market index (e.g., S&P 500, SPX), select ratio in the dropdown box, select time period, and then click finished. Note: If you completed Exercise 3, you may already have this chart on your G screen. If not, you may want to save the screen in the G Screen.
14. Technical analysis can be applied to study trends and breakouts for other exchanges, indexes, currencies, commodity prices, and portfolios. Select an index representing foreign stocks or an exchange rate and construct a moving average band for a time period of interest. For a moving-average envelope for a loaded index or currency, type GPO MAENV. See if there are reversal and confirmation signals.
15. Technical analysis when used in conjunction with fundamental analysis provides a more complete picture of the stock or market. Portfolio managers and security analysts use various technical metrics to identify new stocks and to monitor their existing holdings.
  - Select a portfolio you have created in PRTU and create an index of the portfolio using CIXB. From the index menu for your portfolio, construct a moving average band (type GPO MAENV). See how your portfolio is currently trending.

- Evaluate several of the stocks in your portfolio in terms of their relative strength. If you saved your relative strength screen to the G screen use that screen to evaluate the relative strength of your stocks (see Exercise 13.f)
  - Evaluate several of the stocks in your portfolio in terms of their price trends within their moving average bands (type GPO MAENV). Save your MAENV screen to the G screen so that you can evaluate other stocks.
  - Evaluate several of the stocks in your portfolio in terms of the Erlanger Put/call ratio (GPO ERPCR) and the short-interest ratio (SI). Save each screen to the G screen so that you can evaluate other stocks.
  - Consider creating a Launchpad for your portfolio consisting of some of these technical measures as monitors. On you Launchpad, include some intraday graphs: BLP <Enter>; on the toolbar create a new view; on you other Bloomberg screens use the Export dropdown (upper right corner) to export the screen to Launchpad).
  - Consider setting up alerts for some your stocks or all of your stocks using the Bloomberg ALRT screen: ALRT <Enter>
16. Use Bloomberg’s Backtest screen (BTST <Enter>) to back test a simple moving average trading strategy on a stock or index of interest. For example, set up a rule to buy when the stock cuts its moving average from below and sell or short when the stock cuts it moving average from above. On the BTST screen, click the Simple Moving Average’s “Edit strategy icon” (pencil icon) to bring up a box for setting the conditions for your trade.
17. The chart homepage has five information and chart areas: Custom charts, sample charts, new charting analytics, Chart Resource section Chart of the Day newswire. Explore some of the information on this homepage: CHART <Enter>.
18. Bloomberg’s Hurst screen (GPO KAOS) is based on the work of Christopher May who applied the Hurst exponent to nonlinear price patterns. Bloomberg’s Hurst Exponent screen can be used to test for randomness. If a price trend is random, the Hurst coefficient would continuously have a value close to 0.5. If not, then there is pattern to the stock price movement. Use the Hurst screen to test whether the price patterned of some of the stocks or indexes that you have used in some of the exercises in this chapter are truly random.

### **Efficient Market Analysis**

1. Filter rule tests are designed to test technical rules of buying and selling when stocks break their support and resistance levels. Bloomberg’s back testing screen (BTST) can be used to back test the profitability of various technical trading rules, including when stocks hit their resistance and support line. Use the BTST screen to back test a moving average envelope for the S&P 500 or a stock or other index of interest. For your test, take a long position when the closing price cuts its lower band and a short positive when it cuts its upper band. Do a back test of just long position.
  - BTST <Enter>
  - On BTST screen, click the pencil icon next to “MA Envelope” to bring up a screen with several tabs
  - Click the “Strategy Analysis” tab to bring up a screen for setting conditions. On the condition screen, you can edit the moving average and upper and lower bands by clicking the edit pencil icon.
  - Click the “Simulation Control” tab to change the trade condition from buy and sell, to buy only or to sell only.
  - Click the “Analysis” tab to run the back test.
  - On the main screen, compare the simulation result to a buy-and-hold strategy and other strategies.

2. Use the BTST screen to back test the Bollinger band for the S&P 500 or a stock or index of interest. On the BTST screen, click the pencil icon next to “Bollinger Band” to bring up a screen with several tabs for setting up your test (see Exercise 1).
3. Many of the early studies support a weakly efficient market. The Hurst exponent is a metric used to identify price patterns hidden within seemingly random stock price trends. If a price trend is random, the Hurst coefficient would continuously have a value close to 0.5. If not, then there is pattern to the stock price movement.
  - Use Bloomberg’s Hurst screen (GPO KAOS for a loaded stock or index) to see if an index or a number of stocks of interest have Hurst coefficients are different than 0.5.
  - Find the Hurst coefficients for stocks comprising an index (SPX or INDU) using the RV screen: INDU <Index>; RV; on the RV screen type in “Hurst” in the “Add Column” box.
  - Comment on importance of abnormal returns and on whether price and return patterns are important to efficient market studies.
4. In an early anomaly study, Banz found excess returns of portfolios consisting of the smallest size stocks. Evaluate the performance of portfolios based on size by comparing the performances over different time period of the Russell Small Cap index (RTY <Index>) and the Russell Large Cap index (RIY <Index>) using the COMP and HS screens: RTY <Index>; COMP and HS. On the COMP and HS screens enter the large cap index in the compare box (RIY <Index>). Use the HRA or beta screen to see the regression relationship of the indexes with the market (S&P 500): RTY or RIY <Index>; HRA. Vary the time period for your regressions. Do either of the indexes have an abnormal return (positive alpha)?
5. The Basu study provided empirical support for the time-honored investment strategy of investing in stocks with low P/e ratios. Many value funds and indexes are constructed with stocks with relatively low P/e ratios and many growth funds and indexes are formed with stocks with relatively high P/e’s. Evaluate the performance of portfolios based on P/e ratios by comparing the performances over different time period of the Russell 1000 Value index (RLV <Index>) and the Russell 1000 Growth index (RLG <Index>) using the COMP and HS screens: RLV <Index>; COMP and HS. On the COMP and HS screen enter the growth index in the compare box (RLG <Index>). Use the HRA or beta screen to see the regression relation of the indexes with the market (S&P 500): RLV or RLG <Index>; HRA. Vary the time periods for your regression. Do either of the indexes have an abnormal return (positive alpha)?
6. Unexpected earnings event studies examine how the market reacts to good and bad earnings announcements. On 8/14/2013, Macy’s had an unexpected bad earning announcement of 7.96% below estimates and on 11/7/12 a good earnings announcement of 22.03% above.
  - Go to Macy’s earnings surprise screen (EE SURP) and evaluate the impact of these announcements.
  - Evaluate the impact of the announcements on Macy’s stock price and volume around these announcement dates. On Macy’s GP screen, click the “Events” tab and check “Earnings.” To determine the percentage change in price, use the percentage change drawing line by clicking the “Annotations Button” on the grey toolbar and then “% change” from the annotations palette showing all of the tools for drawing on the chart. Move the “% Change” drawer to the announcement dates and click. The line will tell you the percentage change in price.
7. The performances of funds by type can be found on the Bloomberg Fund Heat Map Screen, FMAP.
  - Use the screen to identify several value style funds and growth style fund:
    - FMAP <Enter>, click “Objective” in “View By” dropdown and United States in “Region” dropdown, and then click “Equity” and select type (e.g. Value Broad Market and Growth Broad Market).

- **Select one of the funds and study it (the fund's ticker can be found on the description page)** using the functions on the fund's menu screen (Fund Ticker <Equity> <Enter>). Functions to include: DES, historical fund analysis (HFA), and price graph (GP).
  - Evaluate the fund using the Holdings, Performance, and Characteristics tabs on the fund's PORT screen.
  - Examine the fund's total returns for different periods and frequencies relative to the S&P 500, Russell 3000, or Dow using the COMP screen: Fund Ticker <Equity> <Enter> and then click COMP
  - Using the HRA or Beta screen, determine the fund's characteristic line with the S&P 500, its systematic risk ( $R^2$ ), and unsystematic risk.
  - Using your selected fund's RV screen, compare the fund with other similar funds in terms of Sharpe, Treynor, and Jensen ranking indexes. On the RV screen, click the custom tab and then type in Sharpe, Treynor, and Jensen to find those indexes
8. The FSCO screen scores and ranks funds belonging to the same peer group based on a combination of weighted indicators. Using FSCO, select the following types of funds by style and categories and then score and them in terms of indexes (e.g., Sharpe, Treynor, and Jensen indexes):
- Value broad base
  - Growth broad base
  - Value large cap
  - Growth large cap
  - Value small cap
  - Growth small cap
9. Use the RV screen for the S&P 500 (SPX <Index>; RV) or Russell 3000 (RAY <Index>; RV) to find the range in size (market cap), P/e, and P/B value for stocks comprising S&P 500 or the Russell 3000. On the RV screen, click the column heading of the category (e.g., market cap or P/e) to sort the stocks in the index in increasing or decreasing order.
10. Construct one or more of the following portfolios based on style or characteristics and evaluate it using PORT:
- Low P/e Portfolio (e.g., P/e less than 15 or 10 or between 5 and 15 or a condition based on what you found from Exercise 9)
  - Large P/e (e.g. P/e > 25 or a condition based on what you found from Exercise 9)
  - Small Cap (e.g., market cap between \$5 billion and \$10 billion)
  - Large Cap (e.g., market cap greater than \$100 billion)
  - Low P/B (e.g., price-to-book ratio less than 3)
  - High P/B (e.g., price-to-book ratio greater than 7)

Steps:

- Use EQS to search for stocks to form your portfolio from an index such as S&P 500 stocks or Russell 3000 stocks: EQS <Enter>; from the Build/Edit Screen, select Standard and Poor's 500 or Russell 3000 from the Index tab; in the yellow ribbon box, type P/e or market cap and set your conditions; Save your screen (Actions tab).
- Create a portfolio of the stocks from your search in PRTU: PRTU <Enter>; click red "Create;" from Settings Screen, click "Actions" tab and then import the stocks (on the settings screen, enable history; see Chapter 7, Bloomberg exhibit box: Bloomberg Portfolio Screens for Evaluating Portfolios: PRTU and PORT, Steps for Creating Historical Data for Portfolios in PRTU).
- Evaluate your portfolio's past performance relative to an index (e.g., DJIA, INDU) using the PORT screen over different times periods: Performance tab, "Total Return," "Portfolio vs Index" (e.g., INDU), Time = MTD, YTD, and Custom (for Custom, the select time period must match the period history of the portfolio created in PRTU).

- Evaluate the characteristics of your portfolio relative to an index using PORT: Characteristics tab, “Main View,” “Portfolio vs Index (e.g., INDU), “by GIC Sectors” Characteristics tab, “Main View,” “Portfolio vs Index” (e.g., INDU), “by GIC Sectors”
11. Several studies (Chowdhury, Howe, and Lin, Pettit and Venkatesh, and Jaffe) have found modest abnormal returns were possible for short periods from trading from inside information. The Sabrient Insider Sentiment Index (SBRIEN <Index>) consists of publically-traded companies that reflect a positive sentiment by insiders closest to the company’s financials. There is also an Insider’s Sentiment ETF, NFO (NFO <Equity>), that is tied to the Sabrient index. Study the relative performance of the index or ETF to the S&P 500 over different time periods using the COMP screen.
  12. Studies have found that analysts’ recommendations are highly skewed towards buy to strong buy compared to sell. See whether or not you find this to be the case for several stocks of interest by examining Bloomberg’s analyst recommendations screens ANRP and ANRD.

### Options Markets

1. Find descriptions, recent prices, and other information on different types of stock options: Ticker <Equity> <Enter>, click OMON. Screens to consider: DES, OTD, OMON, and OMST. Examine the screens for an option. To bring up an option’s screen: option ticker <Equity> <Enter>.
2. Select a stock and bring up its equity screen: ticker <Equity> <Enter>). Using the Bloomberg OSA screen, evaluate the following option strategies on the stock with a profit graph:
  - a. Call purchase
  - b. Call sale
  - c. Put purchase
  - d. Put sale
  - e. Covered call write
  - f. Covered put write
  - g. Straddle purchase
  - h. Straddle sale
  - i. Simulated long position
  - j. Simulated short position.
3. Identify several option strategies that you would consider if you expected stock prices to increase in the next three months. Select an option and analyze your strategies using Bloomberg’s OSA screen.
4. Identify several option strategies that you would consider if you expected stock prices to decrease in the next three months. Select an option and analyze your strategies using Bloomberg’s OSA screen.
5. Identify several option strategies that you would consider if you expected stock prices to be stable over the next three months. Select an option and analyze your strategies using Bloomberg’s OSA screen.
6. Select an exchange call and put option on an index and evaluate the following option strategies for different holding periods with a profit table and/or graph using the Bloomberg OSA function: call purchase, put purchase, straddle purchase, straddle sale, synthetic long position, or synthetic short position.
7. Determine B-S price of call and put options on a selected stock using the Bloomberg OV/OVME screen. Examine the model’s call and put values and stock price curve generated from Bloomberg. Use either Bloomberg defaulted values for the stock’s volatility, risk-free rate, and dividends or input your own.

8. Portfolio insurance: Use Bloomberg to construct an equity portfolio or select one you have already constructed. Determine the index put positions you would need to create a portfolio insurance strategy (consider the horizon period when you select the maturity of the option). Use OSA to generate a profit graph and/or value graph of your hedged portfolio. Include screens in your answer and bullet points on key observations. For a guide, see Bloomberg exhibit box: "OSA: Portfolio Insurance."

### **Futures and Futures Options**

1. Exchange-listed commodities can be found by accessing the CTM screen: CTM <Enter>. Contracts are listed by category, exchanges, and region. For example, to find a stock index on the Chicago Mercantile Exchange (CME), use the CTM "Exchange" screen and click "Equity Index" from the dropdown menu in the "Category" column; to find a commodity contract on the Chicago Board of Trade (CBT), use the CBT "Exchange" screen and click commodity type from the dropdown menu in the "Category" column. Using the CTM screen, find the tickers on a futures contract of interest and analyze it using screens from the contract's menu screen (Ticker <Comdty>). Screens to consider: Description (DES), Contract Table (CT), Intraday Graph (GIP), Expiration Schedule (EXS), and Price Graph (GP).
2. Select a portfolio with a market value of at least \$1.5 million that you have created in PRTU. Using the OSA screen, determine the number of futures contracts need to hedge your portfolio. For a guide, see Bloomberg box: OSA: Hedging Portfolios Using OSA."
3. Select some put and call options on an S&P 500 futures contract using the futures contracts OSA screen:
  - Go to futures menu screen (SPA <Comdty>)
  - Look for contracts and tickers on the EXS screen
  - Bring up the futures contract menu screen (ticker <Index>)
  - Bring up the OSA screen (OSA <Enter>)
  - Use the "Position" tab on the OSA screen for the futures contract to add put and call options on the futures contract

Using OSA "Scenario Char" tab analyze a number of futures and futures options positions

- a. Long futures position
  - b. Short futures position
  - c. Futures call purchase
  - d. Futures put purchase
  - e. Covered call write (short futures call and long futures)
  - f. Covered put write (short futures put and short futures)
  - g. Futures insurance (Long futures contract and long futures put)
  - h. Long straddle
  - i. Short straddle
4. Select some put and call options on an futures other than the S&P using the futures contracts OSA screen:
    - Go to CTM screen to find futures and futures options
    - Go to futures menu screen (ticker <Comdty>)
    - Look for contracts and tickers on the EXS screen
    - Bring up futures contract (ticker <Index>)
    - Bring up the OSA screen (OSA <enter>)
    - Use the "Position" tab on the OSA screen for the futures contract to add put and call options on the futures contract

Using OSA "Scenario Char" tab analyze a number of futures and futures options positions

- a. Long futures position
- b. Short futures position
- c. Futures call purchase
- d. Futures put purchase
- e. Covered call write (short futures call and long futures)
- f. Covered put write (short futures put and short futures)
- g. Futures insurance (Long futures contract and long futures put)
- h. Long straddle
- i. Short straddle

### **Bond Valuation and Return**

1. Select an option-free (bullet) corporate bond of interest. You may want to use the Bloomberg search/screen function, SRCH, to find your bonds. Evaluate the bond in terms of its price, yield, yield spread, and price-yield curve. In your evaluations, you may want to consider the following screens on the bond's menu screen:
  - a. CSHF screen to find the bond's cash flow
  - b. YA screen to determine price and yield
  - c. PT screen to view price-yield curve (enter percent steps in increments box)
  - d. TDH and ALLQ to determine the liquidity on the bond based on its trading activity and bid-ask spreads.
2. Select a callable corporate bond of interest. You may want to use the Bloomberg search/screen function, SRCH, to find your bonds. Using the YA screen (click grey "Call" tab) or the YTC screen, examine the call structure of the bond and determine its yield to next call, yield to maturity, and yield to worst.
3. Select a U.S. Treasury bond with a long-term maturity (15 to 20 years). You may want to use the FIT screen to find your bond.
  - a. Conduct a total return analysis of the bond using the FIHZ screen for an instantaneous change in rates (set the horizon to the current settlement date) given different discount rates and reinvestment rates.
  - b. Conduct a total return analysis of the bond using the FIHZ screen for a given horizon period (e.g., one year) given different discount rates and reinvestment rates.
  - c. Conduct a total return analysis of the bond using the TRA screen. Select different horizon periods (current date, one-year horizon, etc.), yield shifts, and reinvestment rates.

Comment on the bond's sensitivity to interest rate changes.

4. Select an intermediate-term to long-term speculative-grade corporate bond. Using the bond's GY or GP screen, examine its price, yield to maturity, yield to next call (if applicable) and spread over its benchmark over the past year. Click the "Event" checkbox and set the event settings to see if the spikes in spreads can be explained by certain events.
5. Select a U.S. Treasury bond or note with an intermediate-term or long-term maturity (10 to 20 years). You may want to use the FIT screen to find your bond. Use the SP screen on the selected bond's menu screen (CUSIP <Govt> <Enter>) to evaluate the profitability of stripping the bond. What is the profit from buying the bond at its current price, stripping it, and selling the strips at the spot rate yields given on the screen? On the SP screen look for the profit for no shift scenario. What is the profit from buying the bond at a lower price, stripping it, and selling the strips at the spot rate yields given on the screen? What is the profit from buying the bond at a higher price, stripping it, and selling the strips at the spot rate yields given on the screen?

6. Select an option-free (bullet) corporate bond of interest. Evaluate the bond in terms of its yield spread, credit risk, liquidity, and interest rate risk. In your evaluations, you may want to consider the following screens on the bond's YA screen: Yield & Spread Tab to determine the bond's spread and Graphs Tab to evaluate the bond's spread history. Do a comparative spread and credit risk analysis of the bond using the bond's COMB screen.

### Level and Structure of Interest Rates

1. Using the Bloomberg YCRV screen, explore the yield curves on U.S. Treasuries (U.S. on/off- the-run sovereign, I111) over the last 10 years. Provide some economic and policy arguments that might explain the differences in yield curves you observe in different periods. Use information from the Federal Reserve sites (FED <Enter>; FOMC <Enter>) and some of the economic indicators from ECOF to find information to support your arguments. Possible indicators:
  - U.S. Nominal GDP: GDP CUR\$ <Index>
  - U.S. Real GDP: GDP CHWG <Index>
  - U.S. Inflation: CPY YOY <Index>
  - S&P/Case-Schiller: SPCS20 <Index>
  - U.S. Unemployment Rate: USURTOT <Index>
  - U.S. Deficit: FDEBTY <Index>
  - Government Debt: PUBLDEBT <Index>
  - Money Supply (M2): M1NS <Index>
  - Balance of Payments: USCABAL <Ticker>
  - Energy Prices: CPUPENER <Ticker>
2. Using the YCRV screen, compare current yield curves on Treasuries (I111) with different quality bonds, such as those for industrials (e.g., F884 for composites). Provide some economic and policy arguments that might explain the differences in yields.
3. Use the IYC9 screen to develop strategies for trading down the Treasury yield curve given the following scenarios and horizons:
  - An upward yield curve shift of 100 bps and an horizon of one year
  - A downward yield curve shift of 100 bps and an horizon of one year
  - A flattening of the yield curve where short-term rates increase (e.g. 100 bps), intermediate-term and long-term rates remain the same and a one year horizon.
  - An upward yield curve shift of 100 bps and an horizon of three years
  - A downward yield curve shift of 100 bps and an horizon of three years
  - No change in the yield curve and an horizon of three years.
4. Suppose you are a bond portfolio manager who over the past year has focused your Treasury investments in intermediate bonds (8-10 year maturities). Further suppose you are preparing your annual report on your fund's performance and would like to explain how the changes in the yield curve over the past year affected the rates on your Treasury holdings.
  - Use the IYC6 screen to shown the shift in the Treasury yield curve over the past year.
  - Use the IYC8 screen to do your historical analysis of the total returns from your bond given the changes in yield curve.
5. Use the FWCV screen to determine forward rates one, two, and three years forward. Given your projected one-year forward rates determine your one-year expected total return for different maturity investments using the IYC9 screens and inputting your forward rates.

- Using the YCRV screen, compare municipal yield curves for different states: YCRV <Enter>; look for curves by “Curves Types,” “Municipal Curves,” and “State Specifics.” Provide some economic arguments that might explain the differences in yields.

### **Bond Risk and Duration**

- Use the Bloomberg RATC screen to identify bonds that have had recent ratings changes. On the RATC screen, you may want to limit your search to bonds in a particular industry (select industry from the red “Search” dropdown). Examine one of the bonds with ratings changes using the RSKC, CRPR, and DRSK screens. Comment on the ratings changes and information you find from the screens, such as Altman Z-score, probability of default, changes in financials, CDS spreads, and litigation.
- Select a callable investment-grade corporate bond of interest. You may want to use the Bloomberg search/screen function, SRCH, to find your bonds. Evaluate the bond in terms of its YTM, yield to first call, and yield to worst. Use the OAS1 screen to determine the option-free spread on the bond, and the YAS screen to determine its total spread. What is the bond’s credit and liquidity spread? What is its callable spread?
- Select a U.S. Treasury bond or note with an intermediate-term or long-term maturity (10 to 20 years). You may want to use the FIT screen to find your bond.
  - Using the YA screen on the selected bond’s menu screen (CUSIP <Govt> <Enter>), determine the bond’s Macaulay and modified duration.
  - Conduct a total return analysis of the bond using the TRA screen. Select different horizon periods, yield curve shifts, and reinvestment rates.
  - Conduct a total return analysis of the bond using the FIHZ screen using different horizon periods, discount rates, and reinvestment rates.
- Suppose you have a horizon that matches the duration of the bond you selected in Exercise 4. Evaluate the interest rate risk on the bond using the FIHZ and TRA screens:
  - Using the FIHZ screen for the selected bond, evaluate its interest rate risk by setting the screen to the horizon matching the bond’s duration and then selecting a discount rate and reinvestment rate showing a low interest rate scenario and then rates reflecting a high interest rate scenario.
  - Using the TRA screen for the selected bond, evaluate interest rate risk by setting the screen to the horizon matching the bond’s duration and then selecting a reinvestment rate.
- Select five investment-grade option-free bonds with different maturities (e.g., 3, 7, 10, 15, and 20 years). Using the YA and DES screens find each one’s maturity, coupon rate, quality rating, YTM, spread, modified duration, Macaulay duration, and convexity. Summarize your information in a table. Comment on the properties of duration and convexity in terms of the bonds you selected. If your horizon were three years, which bond would you select if you expected interest rates to decrease? Which bond would you select if you expected rates to increase?

### **Bond Strategies**

- Conduct a horizon/total return analysis on five Treasury notes and bonds with different maturities (e.g., 3, 7, 10, 15, and 20). Use FIT to help you select the bonds. To conduct the analysis, construct a portfolio of the bonds using PRTU (enter the bond’s CUSIP on the PRTU screen). Once you have constructed the portfolio, use the BSA screen to conduct the scenario analysis. To evaluate each bond in terms of its sensitivity, download the BSA scenario to Excel report (click Excel from “Reports” tab). This report shows total returns for each shift for the portfolio and the individual bonds.

2. Construct a portfolio of investment-grade corporate bonds and U.S. Treasuries using the PRTU screen. You may want to use the Bloomberg search/screen function, SRCH, to identify the bonds for your portfolio. After constructing the bond fund, evaluate the portfolio. Possible evaluations you may want to consider:
  - a. Evaluate the portfolio's features using the PREP, PSD, PCF, and KRD screens.
  - b. Using the BSA and/or PSA screens, evaluate the portfolio's duration and its sensitivity to different interest rate changes for different horizon periods.
  - c. Using the BSA and/or PSA screens, evaluate the portfolio's total return for rate changes in which the yield curve steepens and for changes in which it flattens.
  - d. Using the KDR screen, evaluate the duration distribution of your portfolio.
  - e. Using the PREP screen, evaluate the bonds in your portfolio in terms of their "ratings and spreads" and "ratings and duration." For spread analysis, select on the PREP screen "Spread Distribution" from the "1<sup>st</sup> Distr" dropdown and select "Spread Measure" from the "Column" dropdown; for duration, select on the PREP screen "Effective Duration" from the "1<sup>st</sup> Distr" dropdown and "Duration Measure," "Spread Measure" or "Analysis" from the "Column" dropdown.
  - f. Using the corporate actions calendar, CACT, and events calendar, EVTS, identify past and future events that merit consideration. You may want to consider setting up alerts from the "Actions" tab).
3. Examine the performance of the portfolio you constructed in Exercise 9 over the past year relative to one or both of the following bond indexes:
  - a. J.P. Morgan Global Aggregate Bond Index: JGAGUSUS <Index> <Enter>
  - b. One of the Bloomberg Bond Government Indices, such as All Bond Government Index: USGATR <Index> <Enter>

In examining the past performance, create a basket of historical returns of the bonds from the portfolio you formed in Exercise 2 using the CIXB screen. See CIXB Box for steps to import a search or portfolio in order to create a CIXB basket. After creating the basket, evaluate your portfolio of bonds relative to the indexes using the total return screen, COMP, on the index menu (Basket ticker name (e.g., .BOND <Index> <Enter>).

4. Suppose you are a bond portfolio manager for an insurance company and you are looking at investing premiums to meet expected liabilities in seven years. Construct a portfolio of investment grade corporate bonds and U.S. Treasuries with a portfolio duration of approximately seven years using the PRTU screen. You may want to limit your search to bonds with maturities between 10 and 15 years. After constructing the bond fund, evaluate the portfolio's duration features using the PORT, PSD, PREP and KRD screens. Using the BSA screen, evaluate the portfolio's interest rate risk given different interest rate changes for a horizon of seven years.
5. Suppose you are a bond portfolio manager constructing a high yield fund. Use the Bloomberg search/screen function, SRCH, to help you identify possible bonds to include in your portfolio. After identifying your bonds, construct a portfolio using the PRTU screen and evaluate the portfolio. Possible evaluations:
  - a. Evaluate the portfolio's features using the PORT, PSD, PREP, DRAM, and PCF.
  - b. Using the PREP screen, evaluate the bonds in your portfolio in terms of their ratings and spreads. For spread analysis, select on the PREP screen "Spread Distribution" from the "1<sup>st</sup> Distr" dropdown and select "Spread Measure" from the "Column" dropdown; for ratings, select on the PREP screen "Ratings" from the "1<sup>st</sup> Distr" dropdown and select "Spread Measure" or "Analysis" from the "Column" dropdown.
  - c. Evaluate the ratings histories of the bonds in your portfolio using the CRAT screen.
  - d. Evaluate the default risk of each of the bonds in the portfolio using the DRAM screen.
  - e. Use the corporate actions calendar, CACT, and events calendar, EVTS, to identify past and future events that merit consideration. You may want to consider setting up alerts from the "Actions" tab).
6. Examine the performance of the high yield portfolio you constructed in the previous exercise over the past year relative to the J.P. Morgan Global Aggregate Bond Index (Ticker: JGAGUSUS; JGAGUSUS <Index> <Enter>). In examining the past performance, create a basket consisting of the bonds from the portfolio you

formed in Exercise 5 using the CIXB screen. See the CIXB Box for steps to import a search or a portfolio in order to create a CIXB basket. After creating the basket, evaluate your portfolio of bonds relative to the indexes using the total return screen, COMP, on the index menu (Basket ticker name (e.g., .HYBOND <Index> <Enter>).

7. Set up an RV screen for evaluating and monitoring the companies comprising the high-yield portfolio you constructed in Exercise 5. To set up the screen, you may want to use PRTU to form an equity portfolio of the companies whose credits you hold in your high yield bond portfolio. Once you have constructed the portfolio, bring up the RV screen. Use the equity screen for one on the companies in your portfolio and then import your equity portfolio (select “Portfolio” from the “Comp source” tab and select your equity portfolio from “Name” tab). Customize your columns by selecting financial parameters that will help you evaluate credit risk. Parameters to consider: Debt/EBDIT, EBIT/Interest Expenses, Debt/Equity, liquidity ratios, operating performance measures, Altman Z-Score, and 5-year CDS (items can be inserted by typing in the name in the yellow box on the RV screen). Be sure to save your screen.

## **Financial Securities and Markets**

### **Government**

1. Find the features on T-bills, T-notes, and T-bonds recently issued at a Treasury auctions by going to the Bloomberg FIT/BBT screen; BBT <Enter>, click T/ACT. To access the menu screen enter CUSIP (or coupon rate and maturity) <Govt>. Screens on the menu you may want to consider include description (DES), dealer bid-ask quotes (ALLQ), and calculation of the yield on the bill (YA).
2. Treasury-Inflation Protection Securities, TIPSs, are popular Treasuries. Select a TIP from the BBT screen and study its features: BBT <Enter>, click TIPS. To access the menu screen enter CUSIP (or coupon rate and maturity) <Govt>. Screens on the menu you may want to consider include description (DES), dealer bid-ask quotes (ALLQ), and calculation of the yield on the bill (YA). On the YA screen, change the inflation assumption and determine the yield based on the assumed inflation rate.
3. STRIPS are popular Treasuries. Select a STRIP from the BBT screen and study its features: BBT <Enter>, click strip. To access the menu screen enter CUSIP (or coupon rate and maturity) <Govt>. Screens on the menu you may want to consider include description (DES), dealer bid-ask quotes (ALLQ), and calculation of the yield on the bill (YA).
4. Using the PX screen, select and evaluate several types of Treasury and agency securities using the functions on the security’s menu screen (Des, ALLQ, YA, HDS, and CSHF (payment schedule). Types of securities to possibly select: US Currents, US Strips, US Bonds, Active Agencies, Active Brady, and Foreign government bonds (e.g., Greece – Government Bonds).
5. Select a recently issued T-note (e.g. 5-years to 10-years) from the PX screen. On the menu screen for the selected note use the SP function (Strip Analysis) to see how the bond could be stripped into interest-only and principal-only strips.
6. Study the features from the description screens (Des) of some of the following GSEs:
  - Federal Home Loan Mortgage Corporation: FHLMC <Corp> <Enter>
  - Federal National Mortgage Association: FNMA <Corp> <Enter>
  - Federal Home Loan Bank System: FHLB <Corp> <Enter>
  - Federal Agriculture Mortgage Association: FAMCA <Corp> <Enter>
  - Federal Farm Credit Bank: FFCB <Corp> <Enter>
  - Tennessee Valley Authority: TVA <Corp> <Enter>
  - World Bank (International Bank for Reconstruction and Development): IBRD <Corp> <Enter>
  - Student Loan Marketing Association: SLMA <Corp> <Enter>

7. The 2008 financial crisis led to the American Recovery and Reinvestment Act and the Emergency Economic Stabilization Act, Troubled Relief Program (TARP), and Total Asset-Backed Security Asset Loan Facility (TALF). Review these and other programs by going to the following Bloomberg screens:
  - a. TARP <Enter>: TARP Program
  - b. TALF <Enter>: TALF Program
  - c. STRS <Enter>: Stress Test Overviews
  - d. GGRP <Enter> Government Relief Programs
  - e. NI TARP <Enter>: TARP News
  - f. RESQ <Enter>: Bailout and Rescue Menu
  - g. WWCC <Enter>: Worldwide Credit Crunch
8. Changes in U.S. government debt depend on the federal government expenditures and revenues. Information on U.S. government's expenditures, revenues, and deficits can be found on the ECOF screen (budget tab). Examine and comment on the number of budget deficits that have occurred over the last 20 years. Comment on the deficit increases after 2008. Data series to consider: U.S. Treasury federal budget yearly summary deficit or surplus, net outlays, revenues, types of revenues, types of expenditures, and deficits as a percentage of GDP.
9. Determine the growth in the government's debt over the last 20 years by going to the ECOF screen (debt tab). Data series to consider: U.S. total public debt outstanding, U.S. debt as a percentage of GDP, U.S. total public debt outstanding total non marketable.
10. Information on current and recent Treasury auctions can be found on AUCT, ECO20, and PX: AUCT <Enter>; ECO20 <Enter>; PX <Enter>.
  - a. Using AUCT, find information about the size of the auction and the amount of competitive and noncompetitive on a recent or pending Treasury auction (e.g. 10-year note).
  - b. Use ECO 20 to find details about purchases and sales of recent or proposed issues.
  - c. Use PX to find a recently issued Treasury or agency and then evaluate the security by using the functions on its menu screen.
11. Find municipals for a particular state by going to MUN2 (or by going to SMUN, clicking state of interest, and clicking Muni Bond Browser (MUN2)). Using the tabs, select municipals with certain features (coupon, maturity, structure, and issued). Study several of the bonds using the functions on the bond's menus screen.
12. Use MSRC to search for bonds for the following types of bonds:
  - a. Insured general obligations (select from "Industry" tab) in a state or particular region (e.g., Northeast). You may want to narrow the search by limiting the search by maturity and coupon type.
  - b. Specific revenue bond (select from "Industry" tab: Airport, assisted living, Community Development, etc. or select from "Sources & Uses" tab) in a particular region (e.g., Northeast). You may want to narrow the search by limiting the search by maturity and coupon type.

Study several of the bonds from each search using the functions on the bond's menus screen CUSIP <MUNI>. Functions to include: DES, CF (Official Statement or Annual Report), QR, And CN (news).

13. Use PICK to post and monitor new or secondary municipal bonds. Create a custom bulletin board of offerings/trades that match your investment strategies (e.g., municipal water authorities in a given state or region). Select one of the bonds from the PICK search and study it using the functions on the bond's menus screen (CUSIP <MUNI>. Functions to include: DES, CF (Official Statement or Annual Report), QR, and CN (news).

14. Do a relative comparison of states using SMUN and DEMS screen:
  - SMUN <Enter>: Compare financial conditions by using SMUN. On SMUN select “All States” from States tab and several templates from the “Types” tab (e.g., General, Pension, Government, or All). Comment on any state whose financials or changes in financial are significantly different, indicating a red flag.
  - DEMS <enter>: Do a relative analysis of state demographics.
15. On the SMUN screen, click a state of interest to bring up a menu and state identification number (e.g., STOCA1 for California). Study the economic and financial conditions of the state by going to its menu page (e.g., STOCA1 <Equity>). Screens to consider: BLS (Employment), FA SS (financial overview), and FA (on “Funds” tab you can look at pensions, general, and government financials).
16. Use the BAB screen to search for Taxable Build American Bonds issued in a particular state. Select one of the bonds from the BAB search and study it using the functions on the bond’s menu screen (CUSIP <MUNI>). Functions to include: DES, CF (Official Statement or Annual Report), QR, FA, SER (bonds in the series), and CN (news).
17. Official Statements are important sources of information on a municipal issue. Review the “Official Statement” on one of the bonds you found in Questions 13 or 14.
18. Taxable municipals are attractive investments for tax-exempt investors. Search for some of these issues by going to MSRC. On the MSRC search screens, select “Federally Taxable” in the “Tax Provision” tab. You may want to narrow the search by limiting the search by maturity and coupon type. Use the PICK screen to customize a search for new and existing taxable municipals to possibly monitor.
19. Bloomberg provides a review of conditions and trends in the municipal bond market in their “Municipal Market” newsletter. Review recent trends in the municipal market reported in the newsletter. To access: BRIEF <Enter>.
20. Use the Advanced News Search TNI to customize a news search for the following:
  - Municipals in a certain area
  - Sovereign in a distress country
21. Compare the yields on bonds of different maturities (e.g., 5 years and 10 years) for an advanced country using the DMMV screen. On the screen, click the grey “83) Bonds” tab at the bottom.
22. Click one of the foreign government bonds of interest from the DMMV screen to find its identification number. Evaluate that bond by using the functions (Des, ALLQ, HDS, and CRVD) on its menu screen: Identification Number <Govt>. Study the country’s economic and financial conditions using information from the ECOF menu.
23. Compare the yields on the bonds of different maturities (e.g., 5 years and 10 years) for a developing country using the EMMV screen. On the screen, click the grey “83) Bonds” tab at the bottom.
24. Click one of the foreign government bonds of interest from the EMMV screen to find its identification number. Evaluate that bond by using the functions (Des, ALLQ, HDS, and CRVD) on its menu screen: Identification Number <Govt>. Study the country’s economic and financial conditions using information from the ECOF menu.
25. Study the credit ratings of different countries using the CSDR screen: CSDR <Enter>.

## Corporate Securities and Markets

1. Identify several current or recent investment activities of venture capital and private equity holdings companies by using the FLNG screen (screen reports 13F filings).
2. Using the FLNG screen, study the past venture capital and private equity activities: FLNG <Enter>; from the red “Aggregate 13-F filing” tab click “Current Report.” On the uploaded screen, select “Venture Capital” or “Private Equity” from the “Institution” dropdown menu. You can identify activities to view at the bottom of the screen and you can change the sectors to view activities by sector.
3. Identify several pending corporate deals using EVTS. You can use EVTS for a loaded company: Ticker <Equity> EVTS. You can also search for events using EVTS and then select an industry or all stocks.
4. Identify and study an IPO using the IPO screen: IPO <Enter>. On the screen, you can access pending IPOs of private equity firms by clicking “Private Equity” and the deal. To get more information on the company, use its cursor (found on the deal page) and then go to its equity screen: Cursor <Equity>.
5. Identify and study private equity activities by going to the “Private Equity” menu: PE <Enter>. Bloomberg’s Private Equity screen displays a menu of links that provide access to specific Bloomberg private equity analysis functions.
6. Given the many types of corporate bonds with their different features (callable, option-free bonds, putable, higher quality, investment grade, lower quality, non-investment grade, debentures, and secured bonds), use Bloomberg’s “Advanced Search” to search for bonds with certain features. Possible searches: U.S., dollar-denominated, investment-grade (BBB and up) corporate bonds for a specific sector; bonds in a certain sector that are callable and either investment-grade or non investment-grade. To access: SRCH <Enter> and click “Advanced Search.” On the “Advanced Search” screen customize your search by using the settings: coupon, redemption features, credit ratings, collateral, and industry sectors.
7. Using Bloomberg’s “Advanced Search” (SRCH <Enter> and click “Advanced Search”), search for callable bonds that do not have a make-whole premium provision for determining the call. On the screen setting for redemption features, click callable and “not make whole call.” Take one of the callable bonds from your search and study its call provisions. Call schedules can be accessed from the bond’s description page.
8. Using Bloomberg’s search function (SRCH <Enter>), search for floating rate notes. To keep the search manageable, you may want to limit your search to certain sectors. On the screen setting click “Include Only” in the yellow dropdown “floater” tab. Take one of the floating rate notes from your search and study its features using the bond’s menu: reference rate, margin, cap, floor, and call features. Most of this information can be found on the bond’s description page.
9. The protective covenants, collateral, and priority of claims (subordination) for a bond issue can be found in a bond’s prospectus. Select a bond of interest, identify its covenants and collateral, and determine whether there is any subordination. The prospectus can be found on the bond’s description page (DES). An alternative and quicker way to identify the covenants is to access the “Covenant, Default” screen (COV) on the bond’s menu page. Clicking one of the covenants takes you to the section in the bond’s prospectus describing the covenant.
10. The PGM screen displays MTN program by issuer. Search for a past or current MTN issue of a company using this screen: PGM <Enter>, click “Medium Term Notes” and then search for issuer and click for series. On the description page of the issuer, click “Drawdown;” on the drawdown menu, click one of notes.
11. Study the CP market by examining the following screen
  - PGM: The PGM screen displays CP programs: PGM <Enter>, click Commercial Paper
  - FDCP: Shows CP outstanding

- CPPR: Displays direct CP issuer
12. Select a preferred stock of a company of interest (to find ticker: <Pfd> tk <Enter> or if you know the company's ticker: ticker <pdf> to bring up the company's preferred issues). Study the preferred stock using the stock's menu screen. Possible screens to examine from the menus: DES, DVD, and GP
  13. Bloomberg information on corporate actions such as acquisitions and limited partnership deals can be accessed on the CACS screen found on the company's equity menu. Select a company of interest that you know has been active in acquisitions and divestures and use CACS to search for its previous activities.
  14. Identify several past acquisitions, IPOs, or divestures using the CACT screen. Set your search for M&A and IPO, or use "Custom" tab.
  15. The BNKF screen list recent bankruptcy filings (BNKF <Enter>). Use the screen to identify one of more companies that have filed for bankruptcy and then evaluate the current state of the company by going to its equity menu and reviewing some of the screens.
  16. The DIS screen displays a list of all bonds that have traded at a yield of at least 10% over the Treasury benchmark rate the last five business days. Use the screen to identify one of more companies with distressed debt and then evaluate the current state of the company by going to its equity menu and reviewing some of the screens.
  17. The LTOP screen displays top underwriters for the major fixed income, equity, equity-linked securities, and syndicated loan securities markets. Using the screen, identify the top underwriters over the past year for U.S. equity and fixed-income issues. Using the dropdown menu, study some of the recent deals for several of the top equity and bond underwriter. To access: LTOP <Enter> On the LTOP screen, right click to access a dropdown menu showing descriptions and the underwriter's deals for that period.
  18. The Bloomberg NIM and NNIM screens identify new security offerings by security type, period, and region. The NIM screen can be customized to identify certain types of bonds and securities and news about announced offerings. Using the NNIM screen, identify some new or expected offerings in the following security categories:
    - U.S. Bonds
    - Equity-Linked Securities (Convertibles)
    - U.S. Corporate/144A
    - Preferred
    - Eurobond
  19. Identify and study private equity activities by going to the "Private Equity" menu: PE <Enter>. Bloomberg's Private Equity screen displays a menu of links that provide access to specific Bloomberg private equity analysis functions.
  20. Short Interest is the total amount of shares of stock that are sold short and have not been repurchased to close out the position. High levels of short interest indicate that numerous sellers have sold the stock short and are expecting a downturn in the share price. The SI Screen displays monthly short interest information for a selected equity security that trades on the American Stock Exchange (AMEX), National Association of Securities Dealers Automated Quotation System (NASDAQ), New York Stock Exchange (NYSE), or Toronto Stock Exchange (TSE). Use the SI screen for several stocks of interest to determine whether or not there is a bullish or bearish sentiment regarding the stocks.

### **Intermediary Securities, Investment Funds, and Markets**

1. Use the Bloomberg fund search screen, FSRC, to search for the following types of debt-type funds and ETFs:
  - a. Fund Type: Open-End; Classification (Asset Class Focus): Debt; Management Style: Total Return; Analytic criterion: Input total return for one year of greater than X% (e.g., 10% or 20%).

- b. Fund Type: Open-End; Classification (Asset Class Focus): Debt; Management Style: Principal Preservation; Management Style: Maturity band Focus (e.g., Long Term (> 10 years)); Management Style: Ratings Focus (e.g., Investment Grade); Analytic criterion: Input total return for one year of greater than X% (e.g., 4% or 10%).
- c. Fund Type: Exchange-Traded Product; Classification (Asset Class Focus): Debt; Management Style: Ratings Focus (e.g., Speculative/High Yield).
- d. Fund Type: Exchange-Traded Product; Classification (Asset Class Focus): Debt; Management Style: Ratings Focus (e.g., Investment Grade); Management Style: Maturity band Focus (e.g., Intermediate or Intermediate/Long).
- e. Fund Type: Fund of Funds; Classification (Asset Class Focus): Debt; Analytic criterion: input total return for one year of greater than X% (e.g., 10%)

Select one of the funds from each of your searches and study it using the functions on the fund's menus screen (Fund Ticker <Equity> <Enter>. Functions to include: DES, historical fund analysis (HFA), fund holdings (MHD), relative valuation (RV), and price graph (GP).

2. Use the Bloomberg fund search screen, FSRC, to search for different types of government, government/corporate, and global debt funds. That is: Fund Type: Open-end, Exchange-Traded Fund, or Closed-End Fund; Classification, Bloomberg Objective, Debt: select type; Analytic criterion: input total return for one year of greater than X% (e.g., 10%). Searches to consider:
  - Government/Agency—Long Term
  - Government/Agency—Intermediate Term
  - Government/Corporate
  - International Debt
  - Global Debt

Select one of the funds from your searches and study it using the functions on the fund's menus screen (Fund Ticker <Equity> <Enter>. Functions to include: DES, historical fund analysis (HFA), relative valuation (RV), and price graph (GP).

3. Use the Bloomberg fund search screen, FSRC, to search for different types of money market funds. Money market funds can be screened by going to "Classifications" tab, selecting "Money Market" from "Bloomberg Objective" tab. That is: Fund Type: Hedge Fund; Classification (Bloomberg Objective, Money Market). Searches to consider:
  - Tax-Exempt-State
  - Taxable Global
  - Taxable Govt/Agency
  - Taxable Treasury/Repo

Select some of the funds from your searches and study them using the functions on the fund's menus screen (Fund Ticker <Equity> <Enter>. Functions to include: DES, total return (TR), and price graph (GP).

4. Use the Bloomberg fund search screen, FSRC, to search for different types of municipal mutual funds by state. Funds can be screened by state by going to "Classifications" tab, selecting "Debt" from "Bloomberg Objective" tab, and then selecting state. That is: Fund Type: Hedge Fund; Classification (Bloomberg Objective, Debt): select state. Select some of the funds from your searches and study them using the functions on the fund's menus screen (Fund Ticker <Equity> <Enter>. Functions to include: DES, historical fund analysis (HFA), relative valuation (RV), and price graph (GP).
5. Bloomberg's REIT screen provides a menu for searching for real estate investment trusts by regions: U.S., Europe, Asia, Australia, Canada, and other. Using the screens, search and select some REITs from different

regions. Study the REITs using the functions on the REIT's menu screen (Ticker <Equity> <Enter>). Functions to include: DES, total return (COMP), relative valuation (RV), holders (HDS), and price graph (GP).

6. Go to the FUND screen to find news and information on mutual funds, hedge funds, and ETFs: FUND <Enter>, use the "News and Research" links.
7. The hedge fund industry is a leader in creating new investment product. To keep current, go to the BRIEF screen to access the Bloomberg newsletter: "Hedge Fund."
8. Many investment funds, ETFs, and hedge funds are constructed to replicate a specific sector or index. Suppose you were considering constructing a fund or ETF based on an index or style. As a first step, select several indexes you think would make a good fund\ and study their description and holdings screens. In searching for indexes, you may want to use the following Bloomberg screens: WEI, <Enter>, SPX <Enter>, RUSS <Enter>, BI <Enter>, and EQS <Enter> (and then select an Index from "Indices" tab).
9. Use the Bloomberg money market screen, MSCH, to search for different types of money market securities:
  - Program Type: Commercial Paper
  - Program Type: Bankers Acceptance
  - Program Type: Negotiable CD
10. Use the Bloomberg BTMM screen to find current money market rates.
11. Use the Bloomberg BBAM screen to find current and past LIBORs.
12. Select a commercial or investment bank (e.g., Bank of America (BAC), Well Fargo (WFC), U.S. Bank (USB), or Goldman Sachs) and study some of its debt offerings (e.g., commercial paper, bank notes, or MTN) by going to the debt's menu screen: Ticker <Corp> <Enter>, Select bond and then select DES on the bond's menu screen.
13. Use the Bloomberg loan search screen, LSRC, to search for the following loans:
  - Leveraged loans by use of proceeds or industry: LSRC <Enter>; Type: Leveraged loans; Use of Proceeds: Select from Acquisition, Aircraft Financing, Development/Construction, or others that are listed; alternatively select from the "Industry" tab.
  - Syndicated loan: LSRC <Enter>; Agent/Participant: Search: Bank (e.g., Wells Fargo); Role: Syndicate Agent.
14. Bloomberg's LOAN, LONZ, and PREL screens can be used to search and analyze loans by categories. Study the functionality of the screens by searching for the following types of loans and information:
  - Syndicated Loans: LOAN <Corp> <Enter>
  - Corporate Loan: Ticker (IBM) LOAN <Corp> <Enter>
  - Syndicated Loans in Euros: Eur LOAN <Corp> <Enter>
  - Loans in different regions and countries: PREL <Enter>; Select from the dropdown tabs loans, country (e.g., North America), and currency (e.g., USD):
  - News on loans: On the LONZ Screen, click TLOA to access top loan news.
  - Newsletter on leveraged finance: BRIEF <Enter>, Click "Leveraged Finance"

## References

- Johnson, R. Stafford, 2014. *Equity Markets and Portfolio Analysis*, Wiley/Bloomberg Press.  
Johnson, R. Stafford, 2013. *Debt Markets and Analysis*, Wiley/Bloomberg Press.