

Sources of Information for Financial Analysis

Objective: The purpose of this assignment is to acquaint you with the major sources of economic and financial information with an emphasis on using the NYU Intranet as well as the Internet. A secondary goal of this assignment is to help you to understand the relationships between interest rates, inflation, economic growth, expectations, and stock market movements. A final objective is to reinforce valuation concepts such as the cost of equity, the cost of debt, off-balance sheet items and where this data can be obtained.

All work should be done using Excel. Please turn in a hard copy of your work together with a disk with your name on the disk. This is an **individual** assignment.

1. Macroeconomic factors and the stock market: Go to the Federal Reserve website at <http://www.federalreserve.gov/releases/#monthly>. From the *Monthly Releases* section, download monthly data on

- 3-month Treasury bill (Secondary market)
- Moody's seasoned Aaa Corporate Bonds
- Moody's seasoned Baa Corporate Bonds

You will need to parse the data in Excel. I will show you how to do this in class. Next, go to the St. Louis Fed website <http://research.stlouisfed.org/fred/fredfile.html>. Go to the Economic Data-Fred webpage, click on "Index of All Data Series" and download monthly data on

- NAPM Purchasing Managers Index, SA (proxy for business expectations) (NAPM)
- S&P 500 Composite Total Returns (TRSP500)

Please note that updates to the data you downloaded are available for the last 12 months as well on the same webpage towards the bottom of the webpage. **Be sure that you also download any available updates.**

Next, go to the website <http://www.freelunch.com> and register for a free account. Once you have obtained your password, log on to the site and download the following data¹:

- Money Stock; M3, (Seasonally Adjusted (SA) Billions \$)
- S&P Price-Earnings Ratio

¹You will see 3 choices: Chart, Table, and United States. Choose the "Table" option to download the data in a spreadsheet format.

Data analysis:

- a. Correlation matrix: Using the Data Analysis² subroutine in the Tools directory in Excel, calculate a correlation matrix. Discuss which measures of economic activity are highly correlated either with the S&P500 returns and/or the S&P Price-Earnings ratio.
- b. Transforming variables: Construct a twelve-month moving average of the returns on the S&P500 using the AVERAGE function in Excel. You will first have to transform the S&P500 index into a return series prior to calculating the 12-month moving average. In addition to this, calculate a 3-month moving average of the change in the money supply where the money supply is proxied by M3. Finally, calculate the spread between Aaa and Baa by subtracting the Baa bond yield from the Aaa bond yield.
- c. Relationship between changes in the money supply and stock returns: Plot the 3-month moving average of the change in the money supply against the twelve-month moving average of the returns on the S&P500 using a Lines on 2 Axes graph option located in Custom Type graphs. How is the change in the money supply related to returns in the stock market?
- d. Relationship between short term interest rates and market P/E ratio: Plot short term interest rates as proxied by the 3-month Treasury bill against the P/E ratio of the market using a Lines on 2 Axes graph option located in Custom Type graphs. Does this relationship make economic sense? Please explain. Note: Researchers use ST interest rates as a proxy for inflation expectations.
- e. Relationship between bond spreads and stock returns: Plot the spread between Aaa and Baa against the twelve-month moving average of the returns on the S&P500 in your excel spreadsheet. What is the relationship between these two variables? Does this relationship make economic sense? Please explain.
- f. Relationship between expectations and stock returns: In efficient markets, stock returns should reflect all available information including expectations of businessmen and consumers. Plot the NAPM index³, a proxy for expectations of production managers against the 12-month moving average of the returns on the S&P500 using a Lines on 2 Axes graph option located in Custom Type graphs. What is the relationship between businessmen's expectations and stock returns? Do expectations lead stock returns or do stock returns lead expectations?

²If you do not see the Data Analysis subroutine, pull down the Tools → Add-Ins→ select Analysis ToolPak option.

³National Association of Purchasing Managers (NAPM): A measure of the health of the manufacturing sector, and more generally the overall economy, by surveying purchasing managers for data about new orders, production, employment, deliveries, and inventory, in descending order of importance. 50% marks the breakeven line between an expanding and contracting manufacturing sector.

2. Financial statements: Log on to the NYU Intranet and select the Global Access link (http://www.nyu.edu/library/bobst/vbl/candf_info.html). Global Access is part of the FactSet database that all major Wall Street firms use. We will obtain information on Pepsi, whose ticker is PEP. Once you have accessed the page for Pepsi, go to the section of the page labeled “Spreadsheet Financials” and download the files “U.S. 10-Q History (10-Year)”, and “U.S. 10-K History (10-Year)”. Once you have downloaded both files, open up Pepsi’s 10Q spreadsheet and calculate the tax rate for the last twelve months (LTM). The tax rate is calculated by taking taxes paid divided by taxable income. Next, open up Pepsi’s 10K spreadsheet and calculate the historical tax rate for each year for which there is data available in the 10K spreadsheet.

3. Bond ratings and cost of debt: Using the Bloomberg⁴ machine, obtain the current bond rating for Pepsi Co (ticker symbol: PEP) and obtain a printed copy of all of Pepsi’s bonds and their ratings which are outstanding. You will submit this copy with your assignment as evidence that you have visited this section of Bloomberg. A short handout on how to use Bloomberg is available on my website. Next, go to <http://www.bondsonline.com/> to obtain the yield on a 10 year Treasury and also the default spread associated with a 10 year bond for Pepsi’s current bond rating. Please submit a printed copy of these Internet pages. Finally, calculate the pre-tax and after-tax cost of debt using information for the last twelve months (LTM) on taxable income and taxes paid from Pepsi’s 10Q.

4. Beta and the cost of equity: Using the Bloomberg machine, obtain the current beta for Pepsi and Pepsi’s competitors (Coke (KO), Cadbury Schweppes (CSG), Cott (COT), Hansen Natural (HANS), National Beverage (FIZ), and Starbucks (SBUX)). Print out a copy of the page containing the beta for each stock and submit this with your assignment as evidence that you have used the Bloomberg machine. Next, download the 10Qs (“U.S. 10-Q History (10-Year)”) for each company from Global Access and from the balance sheet of each company, obtain the total shares outstanding and also the total amount of debt outstanding for the last twelve months. Total debt should include short term and long-term debt. For purposes of this exercise, we will not include the present value of operating leases. Using either <http://biz.yahoo.com> , <http://www.marketguide.com>, <http://www.wsrn.com>, or your favorite stock quote website, obtain the current price per share for Pepsi (PEP), Coke (KO), Cadbury Schweppes (CSG), Cott (COT), Hansen Natural (HANS), National Beverage (FIZ), and Starbucks (SBUX). Next, calculate the market capitalization for each stock. The market capitalization is equal to the price per share multiplied by the number of shares outstanding. Some of the websites that I have cited give the market capitalization for each stock. Finally, given the beta, debts, and market value of equity for Pepsi’s competitors, calculate Pepsi’s built-up beta. Use the LTM marginal tax rate that you calculated earlier for Pepsi in deriving Pepsi’s imputed beta. Be sure to show your work in an Excel spreadsheet.

⁴NYU has one Bloomberg terminal available for undergraduates in LC-16. There is another terminal located on the 6th floor in Bobst Library on the 6th floor. You will not be able to use the Bloomberg machines available for Stern graduate students.

5. Operating Leases: Access the 2002 10K (March 20, 2002) for Pepsi using either <http://www.wsrn.com> or Lexis-Nexis (part of NYU's Virtual Business Library) to access the SEC filings (Edgar-Online). Search through the 10K and input the schedule of future minimum annual rentals on non-cancelable operating leases, in effect as of December 29, 2001 in a spreadsheet.

6. Executive Compensation: Access the most recent Proxy Statement (DEF 14A) for Pepsi and print it out. From the most recent proxy statement, what is the number of shares of common stock that all directors and executive officers as a group own in Pepsi? What percentage of Pepsi's CEO pay does straight salary constitute? How does this compare to the CEO of Coke in terms of the proportion of his pay that is straight salary? Prepare a pie chart of the percentage breakdown of the salary components for Pepsi's CEO and provide another pie chart showing the same breakdown for Coke's CEO. Are the percentage allocations comparable? Please discuss.

7. Investment Banking Reports: To compete for an institutional investor's business, investment banks provide recommendations on the outlook for a stock or bond. You can access these analysts' reports from [Investext](http://www.nyu.edu/library/bobst/vbl/candf_info.html), which is a part of NYU's Virtual Business Library (http://www.nyu.edu/library/bobst/vbl/candf_info.html). Using Investext, download 3 analysts' reports on Pepsi within a month of each other. In a spreadsheet, put the name of the firm in one column, the date of analysis in the 2nd column, the expected earnings per share for 2003 year end in another column, the analyst's recommendation in the 4th column, the expected revenues in the 5th column, and the target price of the stock 12 months from the date of analysis in the last column. Please turn in your 3 analysts reports with the assignment. Put these reports in an appendix.