Note on Tracking Financial Data

One objective of Econ 135 is to help you to become familiar with financial markets. Finding and tracking financial data is the first step. This note is intended to help you find the relevant data. Following financial data and financial news should also help you understand monetary theory, because daily market action often provides great examples of how the theory applies in practice.

A key distinction is between current quotes and closing quotes. The most current data are best for ongoing “casual” tracking of market developments. Closing quotes are preferable for systematic analysis, and hence required for your calculations. Caution: many “free” online sources provide only current data.

Here are the financial instruments to monitor:

1. **Ten-year Treasury Note**: Keep track of the yield and the price. This is the most liquid Treasury bond, and therefore widely viewed as representative for the bond market. The yield on the 10-year note is a standard measure of “the” long-term interest rate. (Aside: The term “note” is used for Treasury securities up to 10 years original maturity; means the same as “bond” and so often appears under bond quotes.)

   **Closing quotes**: At WSJ.com go to Markets Data Center, click on the “Bonds, Rates & Credit Markets” tab, find the box “Complete Bonds, Rates & Credit Markets Data”, click on “Treasury Quotes.” Scroll down to about the middle of the page. Look for the maturity dates about 10 years ahead. Select the security closest to, but no more than, 10 years. (For the financial calculations assignment, this should be the same security as in the class example; check for matching maturity and coupon rate.) There are two price quotes, bid and ask. Use the bid price for your calculations.

   **Current quotes**: At Bloomberg.com look under marketdata > rates&bonds > Notes/Bonds for “10-year”; provides yield and price. Or, look on the WSJ Markets Data Center main page under “10-year Note”; this provides the yield only.

2. **Ten-year Treasury Inflation-Protected Security (TIPS)**. Keep track of the yield and the price. The yield on the 10-year TIPS provides a real interest rate measure that’s instructive in comparison to the nominal yield on the regular 10-year note.

   **Closing quotes**: At WSJ.com go to Markets Data Center, click on “Bonds, Rates & Credit Markets” page, find the box “Complete Bonds, Rates & Credit Markets Data”, click on “TIPS.” Scroll down to about the middle of the page. Look for the maturity dates about 10 years ahead. Select the security closest to, but no more than, 10 years. (For the financial calculations assignment, this should be the same security as in the class example; check for matching maturity and coupon rate.) There are two price quotes, bid and ask. Use the bid price for your calculations.

   **Current quotes**: At Bloomberg.com look under marketdata > rates&bonds > Inflation Indexed Treasury for “10-year;” provides yield and price. (Caution: This is not the “10-year” number under Notes/Bonds.)

**Hints**: Some publications use the acronym TIIS for Treasury inflation-indexed security. Some use the term Treasury bond to refer to Treasury bonds and notes. Disregard such semantics—the key tasks are to
pick the correct maturity (10 years, exactly or rounded down) and to distinguish regular bonds/notes from inflation-protected/indexed bonds/notes.

(3) The S&P500 stock index: Keep track of the index number.
This is an index that tracks the average value of the 500 largest U.S. stocks.
Closing quotes: At WSJ.com go to Markets Data Center, click on the “U.S. Stocks” tab, find the box “Complete U.S. Stock Data”, click on “Stock Indexes: Data Bank,” and find the S&P500.
Current quotes: Widely available online. At WSJ.com, look in the markets data center home page under “Major Stock Indexes.” At Bloomberg.com, look under marketdata > stocks > world indices.

The Yen and the Euro are the most important foreign currencies.
Closing quotes: At WSJ.com go to Markets Data Center, click on the “Currencies” tab, find the box “Complete Currencies Data”, click on “New York Closing.”
Current quotes: At WSJ.com, look in the markets data center home page under “Currencies.” At Bloomberg.com, look under marketdata > currencies.

(6) Three-month Treasury Bill Rate: Keep track of the bill yield.
This is THE benchmark interest rate in the U.S. money market.
Closing quotes: At WSJ.com go to Markets Data Center, click on the “Bonds, Rates & Credit Markets” tab, find the box “Complete Bonds, Rates & Credit Markets Data”, click on “Treasury Quotes.” On the Treasury Quotes page scroll down to T-bills. Look for the bill with maturity closest to but no greater than 91 days (usually in the 85-91 day range). The “Asked Yield” is the most recent closing quote.
Current quotes: At Bloomberg.com look under marketdata > rates&bonds > Bills for “3-month.” At WSJ.com go to Markets Data Center main page, look under “3-Month Bill.”

(7) Fed-Funds Rate: Keep track of the Effective Rate, if you can find it, otherwise the Target Rate.
This is a key overnight interest rate between banks that the Federal Reserve uses to set monetary policy. The market is active throughout the day and not centralized, so different newspapers may give different quotes. Many sources show the Fed’s “Target Rate” that differs from actual market rates. The “Effective Rate” is a measure of the day’s actual market rate.
Sources: At WSJ.com go to Markets Data Center, click on the “Bonds, Rates & Credit Markets” tab, find the box “Complete Bonds, Rates & Credit Markets Data”, click on “Money Rates.” Scroll down to Federal Funds and find the Effective Rate. At Bloomberg.com, the Target Rate is available under marketdata > rates&bonds > key rates. At WSJ.com Markets Data Center, the Target Rate is also shown under “Consumer money rates.”

Special rounding-to-zero option: Because it’s tedious to do calculations with interest rates near zero, you may simplify as follows: Whenever your data source show an annualized interest rate or annualized yield of less than 0.25%, you may round it down to zero, i.e., omit the number.

Hint: If you somehow can’t get access to closing quotes, one alternative is to look up the current quotes
right after the market has closed and before markets open the next day.

You may notice that the list focuses on interest rates and exchange rates. Both are closely related to monetary policy. If you are interested in the stock market, you may track additional securities or indicator on your own—and if you notice developments that seem interesting or puzzling, you are invited to mention this in class.

Let’s hope we see a lot of action this quarter that will give us current examples of how monetary policy interacts with financial markets!

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Special Situation: Tracking the bond market when there is a Treasury Auction

Several times a year, the U.S. Treasury auctions new Treasury bonds and notes. This includes new issues of 10-year notes and 10-year TIPS, the securities you are tracking. Keep this note for your records and read the paragraphs below when you notice that a new 10-year note or TIPS was issued.

Treasury auctions are a good learning opportunity because they give us a chance to observe a **Primary Market** for a Treasury security. The primary market is organized as an auction and works as follows. Several months in advance, the Treasury announces an Auction Calendar, which is a list of securities they will auction off (maturities and approximate volume) and auction dates.¹ About a week before each auction, the Treasury announces more specific information, detailed enough that dealer can submit sealed “competitive bids” by the auction deadline. A competitive bid states one or more yields numbers together with the volume (face value) that the buyer is willing to buy if the security carries at least the stated yield. In addition, anyone can make a non-competitive bid, stating a volume demanded at the market-clearing yield. At the appointed auction time, the Treasury opens the bids and ranks them by yield, highest to lowest. The lowest yield sufficient to sell the desired volume is the market-clearing yield. By convention, the new bond will carry a coupon rate equal to the auction yield rounded down to the next 1/8 of a percent.² Winning bidders pay an auction price equal to the present value of the bond at the market-clearing yield. Because the coupon rate is equal to or slightly below the yield, the auction price is equal to or below the par value. Within minutes, the new bond starts trading on the Secondary Market.³

Treasury auctions create problems for tracking the bond market, because most online sources (including bloomberg.com) provide price and yield quotes only for the most recently issued securities of each type—the “on the run” issue—but not the previously issued ones. The on the run issue is also the most common benchmark for “the bond market” and therefore most relevant for economists to track.

For example, suppose you want to track the 10-year bond return from August 1-15. New 10-year notes are typically auctioned in February, May, August, and September. So on August 1, the on-the-run 10-year

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³ There is also a forward market for the new security before the auction, called the “when issued” market; you are not responsible for knowing its operation.
security is the Treasury note issued in May. Now suppose a new 10-year Treasury note is auctioned on August 10. This note becomes the new on-the-run 10-year issue. There are several correct ways to deal with this new security when computing total returns, and some pitfalls.

For example calculations, suppose the May note trades at 102 on Aug.1, rises to 103 on Aug.10, and trades at 104 on Aug.15. Suppose the August note is issued at par and trades at 101 on Aug.15.

One correct approach is to keep track of the price and yield of the original note. Compute the capital gain for August 1-15 from the Aug.1 and Aug.15 price of this note. To get the Aug.15 value, you will have to consult the WSJ or similar source that has a listing of prices and returns on all Treasury issues, not just the on-the-run issues. In the example, the May note rises from 102 to 104. The capital gain is (104 - 102)/102 = 1.96%. (Use this approach for the financial calculations assignment.)

A second correct approach is to record prices and yields of new and old securities at some intermediate date. (In the example: Aug.10 closing quotes would work). Then compute the total return on the old note from start to intermediate date; compute the total return on the new note from intermediate to the ending date; add them. This would produce the total return on an investment strategy of always holding the on-the-run 10-year note. In the example, the capital gain on the May note from Aug.1 to Aug.10 is (103-102)/102 = 0.98%. The capital gain on the August note from Aug.10 to Aug.15 is (101 - 100)/100 = 1.00%. Adding up, one may conclude that the trading strategy of holding on-the-run bonds has earned a capital gain of about 1.98%. To compute total results, you would similarly add up the current yields.

The various correct approaches usually produce very similar return numbers, but not always.

Finally a negative example: It would be wrong to used the price of the May note for Aug.1 and the price of the newly-issued August note for Aug.15. To compute a valid capital gain, you need two prices for the same security. In the example, you cannot combine the Aug.1 quote of 102 for the May note and Aug.15 quote of 101 for the August note and conclude (falsely!) that the bond market went down. The point of this note is to help you avoid such mistakes.