Chapter 8: Data Exploration Problems

1. How well does the stock market anticipate the behavior of the economy? Plot since 1950 the percent change from a year ago of the Dow Jones Industrial Average (FRED code: DJIA). Is the index a reliable predictor of business cycle downturns (depicted in the graph by vertical, shaded bars)? *(LO5)*

   Hint: At the FRED Web site, click on "Data Tools" and then "Create Your Own Graphs." In the "Add Data Series" box, input the code for Dow Jones Industrial Average (DJIA). Change the "Frequency" to monthly, set the start date in the "Observation Date Range" to January 1950, and change the "Units" to "Percent Change from Year Ago."

2. Why might the stocks of small firms outperform large firms over long periods of time? Will this hold over short periods of time, too? Plot since 1979 the stock indexes for small firms (FRED code: WILLSMLCAP) and large firms (FRED code: WILLLRGCAP) using annual data scaled to a common base year of 1979=100. *(LO3)*

   Hint: At the FRED Web site, click on "Data Tools" and then "Create Your Own Graphs." In the "Add Data Series" box, input the code for the Wilshire U.S. Small Cap Total Market Index (FRED code: WILLSMLCAP) and select "Annual" from the Frequency dropdown box. At the Units box, select "Index (Scale value to 100 for chosen period)." At "Enter an Observation Date" type "1979-01-01" to start the scale at 100 in 1979. Next, at "Add Data Series," add the Wilshire U.S. Large Cap Total Market Index (FRED code: WILLLRGCAP), specify the frequency as annual, and then "Redraw Graph." Note that both indexes start at the same value of 100 in 1979.

3. Compare and contrast the evolution of two leading stock indexes. Plot since 1960 on a quarterly basis the Dow Jones Industrial Average (FRED code: DJIA) and the S&P 500 (FRED code: SP500) scaled to a common base quarter of 1960 Q1=100. *(LO2)*

4. The Dow Jones Industrial Average (FRED code: DJIA) is a price-weighted index of 30 stocks and the S&P 500 index (FRED code: SP500) is a value-weighted average of 500 stocks. Find out which is more volatile. Plot on a quarterly basis since 1970 the percent change from a year ago of each index. Download the data to a spreadsheet and compute the standard deviation for each series over the period. *(LO3)*

   Hint: At the FRED Web site, click on "Data Tools" and then "Create Your Own Graphs." In the "Add Data Series" box, input the code for the Dow (FRED code: DJIA). Next, set the start date to January 1970 in the "Observation Date Range" box, select "Quarterly" in the Frequency box, choose "Percent Change from Year Ago" in the Units box, and click "Redraw Graph." Next, at "Add Data Series," repeat

these procedures for the S&P500 (FRED code: SP500). Then, download the data to a spreadsheet.

5. Have stock dividends become a more important source of income to U.S. households? Using FRED, plot since 1959 the share of dividend income (FRED code: B703RC1Q027SBEA) in personal disposable income (FRED code: DSPI). Can you explain the 50-year trend? *(LO5)*

   *Hint: At the FRED Web site, click on "Data Tools" and then "Create Your Own Graphs." In the "Add Data Series" box, input the code for personal dividend income (FRED code: B703RC1Q027SBEA). Change the start observation to January 1959 at the "Observation Date Range" box. Go to the "Add Data Series" box again, click on the "Line 1" button, and then input the code for disposable personal income (FRED code: DSPI). At the Formula box, input "(a / b)*100" (without the quotes) and then select "Redraw Graph."*