Chapter 10: Data Exploration Problems

1. Exchange rates can exhibit sudden changes as well as long-run patterns. *(LO1)*
   a. Plot the U.S. dollar-Australian dollar exchange rate (FRED code: EXUSAL) without recession bars and identify long-run swings and short-term spikes. Which currency is appreciating when the plotted exchange rate falls?

   Hint: At the FRED Web site, go to "Data Tools," and then "Create Your Own Graphs." On the "Graph" line, select "Off" at the "Recession Bars" dropdown box. Then select "Add Data Series" and input the code for the U.S. dollar-Australian dollar exchange rate (FRED code: EXUSAL).

   b. Repeat the exercise for the Japanese yen-U.S. dollar exchange rate (FRED code: EXJPUS).

   Hint: Follow the same procedure as in part (a).

2. Plot since 1999 without recession bars the *real* exchange rate between U.S. goods and euro-area goods according to equation (2) in the text. Use the consumer price index (divided by 1.95 to set a common base year of 2005 = 100 for the U.S. and euro-area indexes) for the price of U.S. goods (FRED code: CPIAUCSL), use the harmonized index of consumer prices for the price of euro-area goods (FRED code: CP0000EZ17M086NEST), and use the U.S. dollar-euro exchange rate (FRED code: EXUSEU). Why might this measure of the real exchange rate be persistently below unity since 2003? *(LO1)*

   Hint: At the FRED Web site, turn off the recession bars as in Data Exploration question 1. At the "Add Data Series" box, type in the code for the U.S. consumer price index. Next, select "Add Data Series" and then choose the "Line 1" button and type in the code for the euro-area index of consumer prices. At the Formula box, type in "((a/1.95)/b)" (without the quotes) and then "Redraw Graph." Go back to "Add Data Series," select the "Line 1" button again and then type in the exchange rate code. In the Formula box, divide the prior formula by "c" so that the final formula is "((a/1.95)/b)/c" (without quotes). Finally, set the "Observation Date Range" to begin at 1999-01-01 and then select "Redraw Graph."

3. Write in algebraic form a calculation of U.K. pounds per euro that uses U.S. dollars per U.K pound (FRED code: EXUSUK) and U.S. dollars per euro (FRED code: EXUSEU). Then plot since 1999 the exchange rate of U.K. pounds per euro using these two U.S. dollar exchange rates. *(LO1)*

   Hint: Before going to the FRED Web site, write out the units of the U.S. dollar per euro exchange rate divided by the U.S. dollar per pound exchange rate to see that the ratio is in units of British pounds per euro. At the FRED Web site, go to "Data

Tools" and then "Create Your Own Graph." Turn off the recession bars using the procedure described in Data Exploration question 1. In the "Add Data Series" box, type in the code for the U.S. dollar-euro exchange rate (FRED code: EXUSEU). Select "Add Data Series" again, choose the "Line 1" button, and then type in the code for the U.S. dollar-pound exchange rate (FRED code: EXUSUK). Type in "a/b" (without the quotes) at the Formula box and then set 1999-01-01 as the initial date for the "Observation Date Range." Select "Redraw Graph."

4. Examine an episode of large-scale intervention by the Bank of Japan (BoJ) in the yen-dollar foreign exchange market. Plot between January 2003 and January 2005 a measure of BoJ intervention (FRED code: JPINTDUSDJPY). Do positive values of this intervention indicator reflect purchases or sales of yen by the BoJ? What was the BoJ's policy objective? To investigate whether the intervention of 2003-2004 was effective, add the U.S. dollar-Japanese yen exchange rate (FRED code: EXJPUS) to the chart, but scaled on the right axis. *(LO5)*

   Hint: At the FRED Web site, go to "Data Tools" and then "Create Your Own Graphs." Turn off the recession bars as in Data Exploration question 1. Next, input the code for the intervention series (FRED code: JPINTDUSDJPY) at the "Add Data Series" box. Again, at the "Add Data Series" box, input the code for the U.S. dollar-Japanese yen exchange rate (FRED code: EXJPUS), set the start and end dates at January 2003 and January 2005 in the "Observation Date Range" boxes, and select "Copy to All Lines." At the Scale" dropdown box, select "Right," and then "Redraw Graph."