

## Chapter 9: Data Exploration Problems

1. Central banks occasionally engage in “liquidity swaps” with each other. Plot and interpret the Fed’s provision of dollar liquidity swaps (FRED code: SWPT) to other central banks since 2007. To facilitate your interpretation, view the FRED “Notes” about this data series. (LO4)

*Hint: At the FRED Web site, enter the code for Fed liquidity swaps (FRED code: SWPT) in the search box at the top right of the page. Using the plot and the description below it in the “Notes” section, explain briefly the observed pattern of liquidity swaps.*

2. Define the swap rate and then plot the five-year swap rate (MSWP5). Describe a transaction involving the swap rate and the actions of the participating parties. (LO4)

*Hint: At the FRED Web site, select “Data Tools,” and then “Create Your Own Graphs.” At the search box, type in the swap rate code (FRED code: MSWP5).*

3. The swap spread is the difference between the swap rate and the yield on the equivalent-maturity Treasury bond. Explain why a widening swap spread may be a signal of deteriorating economic conditions. Plot since 2000 the difference between the five-year swap rate (FRED code: MSWP5) and the five-year Treasury yield (FRED code: GS5). Interpret the evolution of this five-year swap spread since July 2007. (LO4)

*Hint: At the FRED Web site, select “Data Tools” and then “Create Your Own Graphs.” In the “Add Data Series” box, type in the code for the swap rate (FRED code: MSWP5). Choose “Add Data Series” again, select the “Line 1” button, and type in the code for the five-year Treasury bond yield (FRED code: GS5). In the formula box, input “ $a - b$ ” (without the quotes). Set the Observation Date Range to begin at 2000-07-01 and then “Redraw Graph.”*

4. Risk-averse investors care greatly about asset price volatility. Using the FRED “Notes” about the data series, briefly define the VIX volatility index (FRED code: VIXCLS) of the Chicago Board Options Exchange (CBOE). Plot since 2004 the VIX and the percent change from a year ago of the S&P500 stock market index. Interpret the graph. (LO3)

*Hint: At the FRED Web site, input the code for the VIX (FRED code: VIXCLS) in the search box at the top right. A brief definition appears below the plot. Then, select “Edit Graph” and “Add Data Series.” Add the code for the stock index (FRED code: SP500), change the start date to January 2004, and the units to “Percent Change from Year Ago.” Select “Redraw Graph.”*

5. Commercial banks trade *trillions* of dollars of derivative contracts, but what is their *net* exposure in derivatives markets? Plot the difference between what commercial banks are owed (FRED code: DFVACBW027SBOG) and what they owe (FRED code: DNVACBW027SBOG) on their derivative positions. (LO1)

*Hint: At the FRED Web site, select “Data Tools” and the “Create Your Own Graph.” In the search box, enter the code for what banks are owed (FRED code:DFVACBW027SBOG) , then select “Add Data Series,” choose the “Line 1” button, and enter the code for what banks owe (FRED code: DNVACBW027SBOG). At the formula box, type in “a – b (without the quotes) and then “Redraw Graph.”*