PROBLEM SET 3

DUE AT THE BEGINNING OF LECTURE, APRIL 9

You may work together on the problems, but you should try each question yourself first, and the answers must be written up in your own words. For all questions be sure to explain your answers carefully and to use graphs whenever appropriate.

1. Suppose there is a tax increase.
   a. In the simple IS-MP model with a single real interest rate, does consumption rise, fall, stay the same, or is it impossible to tell? Does investment rise, fall, stay the same, or is it impossible to tell?
   b. In the IS-MP model with an interest rate differential, does consumption rise, fall, stay the same, or is it impossible to tell? Does investment rise, fall, stay the same, or is it impossible to tell?

2. Label each of the following statements as True, False, or Uncertain, and explain your answer briefly:
   a. “In the IS-MP model extended to include an interest rate differential, an increase in confidence in the soundness of the financial system increases output.”
   b. “Introducing an interest rate differential into the IS-MP model makes the AD curve steeper than it otherwise would be.”
   c. “If the fiscal policy multiplier is less than 1, then fiscal policy cannot help to end a recession.”

3. This problem asks you to perform an event study. In the extension of the IS-MP-IA model to include an interest rate differential, a financial crisis is assumed to raise the differential. This problem therefore asks you to investigate whether interest rate differentials (often referred to as interest rate spreads) rose at the time of some of the major events associated with the financial crisis in the fall of 2008.

   Specifically, consider the difference between the interest rates on BAA corporate bonds and on 30-year Treasury bonds. And consider any 3 of the following 4 events, all of which occurred in September 2008: (1) The government takeover of Fannie Mae and Freddie Mac; (2) Lehman Brothers’ announcement that it would file for bankruptcy; (3) The government takeover of AIG; (4) The House of Representatives’ rejection of the initial TARP legislation. (Note: no extra credit for considering all 4 events.)
   a. For each event that you chose, find the day that it occurred. As far as you can tell, did it occur when financial markets were open (which, loosely speaking, corresponds to normal working hours in New York) or when they were closed? Describe how you found this information and how confident you are about it.
   b. For each event, if it occurred when financial markets were open, find the change in the interest rate spread on the day of the event. If financial markets were closed, find the change in the spread on the next day of trading. Did these events lead to noticeable increases in the interest rate spread? Be sure to describe where you found your data.
   c. What was the overall change in the spread from the end of August 2008 to the end of October 2008?
   d. For many economic relationships (for example, between money and output), we would not expect a big effect in a day. Explain why one might or might not expect the worsening of a financial crisis to have a noticeable impact on interest rate spreads in a day.
Pick the best answer to each of questions 4-8. No explanations of your answers are needed.

4. Researchers who are trying to estimate the effects of changes in government purchases on real GDP often focus on military purchases because:
   a. The types of government purchases that policymakers are likely to use to combat a recession are similar in important ways to military purchases.
   b. Wars are often accompanied by price controls, which makes them particularly good times for isolating the effects of changes in government purchases.
   c. Changes in military purchases are caused mainly by geopolitical developments outside the United States, not by other factors affecting U.S. GDP.
   d. It is hard to obtain data on non-military purchases.

5. An “asset price bubble” means:
   a. A large, rapid rise in asset prices.
   b. A rise in asset prices that is reversed.
   c. A rise in asset prices in response to reductions in interest rates.
   d. Asset prices being greater than their “fundamental” values.

6. Suppose a variable, $y$, is determined by a factor we can measure, $x$, and by other factors that we cannot. That is, $y = a + bx + e$, where $a$ and $b$ are parameters and $e$ is the unobserved other factors. Estimates of $b$ from a regression of $y$ on $x$ (estimated by “ordinary least squares”) will tend to overestimate the impact of $x$ on $y$ if:
   a. $x$ and $e$ are negatively correlated (that is, $e$ tends to be low when $x$ is high, and high when $x$ is low).
   b. $x$ and $e$ are uncorrelated (that is, $x$ has no consistent relationship with $e$).
   c. $x$ and $e$ are positively correlated (that is, $e$ tends to be high when $x$ is high, and low when $x$ is low).
   d. $a$ and $x$ are positively correlated.

7. The fact that the bankruptcy of Lehman Brothers nearly caused the failure of institutions that had made loans to Lehman Brothers is an example of:
   a. “Confidence” contagion.
   b. “Coordination” or “Fire sale” contagion.
   c. “Counterparty” contagion.
   d. None of the above.

8. The “borrowing” interest rate, $r^b$, is usually higher than the “saving” interest rate, $r^s$, because:
   a. Financial intermediaries’ information production, liquidity transformation, and diversification provision are costly.
   b. Government regulations limit the interest rates that banks can pay.
   c. The interest rates that foreigners can get on their savings are generally lower than interest rates in the United States.
   d. The inflation rate faced by savers is usually lower than the inflation rate faced by borrowers.