Problem Set 2
Macroeconomics, Spring 2015
April 2, 2015

Do the following problems in the textbook. The number in the parenthesis corresponds to the problem number in the textbook. The problem set is due on April 9, 2015 in the class time.

1 Monetary System and Inflation

1. (Problem 4-2) Explain how each of the following events affects the monetary base, the money multiplier, and the money supply.

   (a) The Federal Reserve buys bonds in an open market operation.
   (b) The Fed increases the interest rate it pays banks for holding reserves.
   (c) The Fed reduces its lending to banks through its Term Auction Facility.
   (d) Rumors about a computer virus attack on ATMs increase the amount of money people hold as currency rather than demand deposits.
   (e) The Fed flies a helicopter over 5th Avenue in New York City and drops newly printed $100 bills.

2. (Problem 5-1) In the country of Wiknam, the velocity of money is constant. Real GDP grows by 5 percent per year, the money stock grows by 14 percent per year, and the nominal interest rate is 11 percent. What is the real interest rate?

3. (Problem 5-8) Some economic historians have noted that during the period of the gold standard, gold discoveries were most likely to occur after a long deflation. (The discoveries of 1896 are an example.) Why might this be true?

4. Compare two versions of the Cagan model: (1) the one discussed in the lecture \( L(m) = Ze^{-bm} \) and (2) a model that is identical except that \( L(m) = Zm^{-b} \), where \( 0 < b < 1 \).

   (a) For each model, graph steady-state level of seignorage against inflation (show the general shape, and quantitative accuracy is not necessary.)
(b) Suppose that the real budget deficit is $D$, so the government needs real seignorage of $D$. Using the graphs in the previous question, discuss how many different inflation rates will produce such level of seignorage. (Note: the answer may be different for the different levels of $D$)

2 Open Economy

1. (Problem 6-9) The president is considering placing a tariff on the import of Japanese luxury cars. Using the model presented in this chapter, discuss the economics and politics of such a policy. In particular, how would the policy affect the U.S. trade deficit? How would it affect the exchange rate? Who would be hurt by such a policy? Who would benefit?

2. (Problem 6-1 after Appendix) If a war broke out abroad, it would affect the U.S. economy in many ways. Use the model of the large open economy to examine each of the following effects of such a war. What happens in the United States to saving, investment, the trade balance, the interest rate, and the exchange rate? (To keep things simple, consider each of the following effects separately.)

(a) The U.S. government, fearing it may need to enter the war, increases its purchases of military equipment.

(b) Other countries raise their demand for high-tech weapons, a major export of the United States.

(c) The war makes U.S. firms uncertain about the future, and the firms delay some investment projects.

(d) The war makes U.S. consumers uncertain about the future, and the consumers save more in response.

(e) Americans become apprehensive about traveling abroad, so more of them spend their vacations in the United States.

(f) Foreign investors seek a safe haven for their portfolios in the United States.