Problem Set 3  
Econ 100B

Problem sets are due to your GSI in Section on Wednesday April 27 or Thursday April 28. Do not leave problem sets in the GSI’s mailbox. Problem sets that are a day late lose half the credit; see the course syllabus for other details.

As always, your grade will be determined largely by the explanation you provide. Also, please label your graphs clearly, indicating the direction in which curves are shifting.

Part I. (3 points) Explain whether the following statements are true, false or uncertain.

1. (1 point) If investment does not depend on the interest rate, the IS curve is vertical.

2. (1 point) If credit card fraud goes up, interest rates will go up unless the Fed increases the money supply.
3. (1 point) Shocks to the IS curve will not affect income very much if money demand is not very sensitive to interest rates.

Part II. (3 points)

Consider the economy of Autarkia, an island that does not trade with any other country. Autarkical consumption is given by $C = 200 + 0.75(Y-T)$ while the investment function is $I = 200 - 25r$. Both government purchases and taxes equal 100.

a. (1/2 point) Graph the IS curve for this economy for $r$ ranging from 1 to 8.
Suppose the money demand curve is given by \((M/P)^d = Y - 100\ r\). The money supply \(M\) is 1,000 and the price level \(P\) is 2.

b. \((1/2\ point)\) Graph the LM curve for \(r\) ranging from 0 to 8.

c. \((1/2\ point)\) What is the equilibrium level of income and the equilibrium real interest rate?

d. \((1/2\ point)\) Suppose government purchases rise to 150. What happens to the equilibrium interest rate and the level of income.
e. (1 point) Calculate what would happen to income if the price level was: (a) 1; (b) 4, and (c) 8. Assume government expenditures equal 100 here. Graph these combinations of P and Y along with the pair obtained for P=2 above. What curve is this?
Part III. (4 points)

Assume that households become pessimistic about the future; perhaps the “new economy” isn’t all they thought it was going to be. Use the IS-LM framework to answer the following:

a. (1 ½ points) What would happen to equilibrium income and interest rates? Describe the process through which equilibrium is attained. (Recall that the underlying assumption is no change in the money supply.)

b. (1 ½ points) Assume, instead, that the Fed was to follow a policy of keeping interest rates unchanged. What would happen to equilibrium income and interest rates? Compare your answer to a above.
(1 point) Based on your analysis, does this appear to be a good policy or would you rather have the Fed follow another policy? Explain.