Economics 1102-25
Homework 4
Due Date: April 04, 2005
Total Points = 100

All answers need to be typed except calculations and graphs.
Show all your work for full credit.
Graphs need to be correctly labeled for full credit.
No late Assignments are accepted

Question 1: Money and Banking (8 points)

a) List one reason why a bank would loan out all its cash reserves(up to the legal limit) **(4 points)**

b) List one reason why a bank might keep more cash reserves than it is required to do so by law? **(4 points)**

Question 2: Money Multiplier (12 points)

Suppose the required reserve ratio is 25%.

a) Calculate the (oversimplified) money multiplier. **(4 points)**
b) Suppose Chad makes $30 million cash deposit at his bank. After this deposit, how much would his bank loan out if it only wants to hold the required reserves? **(4 points)**

Hint: I am asking for the initial change in loans right after Chad's deposit, not the overall change.

c) Suppose all banks hold as cash reserves only what they are required to by law, and suppose all borrowers place their entire loan in a bank. Calculate the resulting change in the money supply. **(4 points)**

Question 3: Change in Ms (30 points)

a) Suppose Robert deposits $20000 cash in bank J, and as a result, total deposits in the economy increase by $40000. If the assumptions behind the oversimplified money multiplier are true in this economy, what is the required reserve ratio? **(6 points)**

b) Calculate the change in the money supply caused by Robert's deposit. **(6 points)**

c) Now suppose **instead** that the economy's central bank purchases $20000 worth of government bonds from bank J. As a result of this action, by how much does the economy's money supply change? **(6 points)**

d) Are your answers to b) and c) the same or different? Briefly explain why? **(6 points)**

e) If the assumptions behind the oversimplified money multiplier are not true, do you think the change in the money supply would be larger or smaller than your answer to c)? Briefly explain why. **(6 points)**

Question 4: Money Demand /Supply Graph **(8 points)**

a.) Suppose that the CPI decreases. Show, on a relevant graph, how this should affect the general interest rate in the economy. **(4 points)**

b.) Suppose instead that equilibrium real GDP increases. Show, on a relevant graph, how this should affect the general interest rate in the economy. **(4 points)**

Question 5: Open Market Operations **(42 points)**

Suppose that the Fed buys $20 million in Treasury bonds from Bank A.

Suppose the Required Reserve Ratio = 5%

a.) After the sale of $20 millions in Treasury bonds to the Fed, by how much will Bank A's cash reserves **initially** change(before making any loans)? Specify if they increase or decreases. **(7 points)**

b.) Assuming that Bank A always wants to keep excess reserves = 0, what will be the total change in the money supply caused by the Fed's action? **(7 points)**

c) Show the effect of the Fed's open market purchase on a money supply/ money demand graph.(Do not worry about the scale) **(7 points)**

d) According to your graph from c.), will interest rates increase, decrease, or stay the same? **(7 points)**

e) Use an income and expenditure graph to show how the change in interest rates you mentioned in d) would affect equilibrium GDP (on the demand side). State which component of spending will be affected. **(7 points). You do not need to state the exact shift. Just show a general diagram.**

f) Show, on an AS/AD graph (Aggregate Supply / Demand), how the Fed's action affects the overall equilibrium level of real GDP and the price level. **(7 points)**