Homework 1
Monetary Theory and Policy: ECO 403
Due: Wednesday, February 11, 2009

Question 1.

Give five sources of funds for a bank to make loans. For each, what are the costs of obtaining these funds?

Question 2.

Give two advantages of using mackeral as currency in jails.

Question 3.

Explain how to *increase* the money supply by changing the discount rate and via the TAF. Which is least precise?

Question 4.

Recently the FED has started paying interest on bank reserves held at the FED. Give one advantage and one disadvantage of this policy.

Question 5.

Suppose the country Dave Kelly's Republic (DKR) has an inflation rate of 30%, a nominal mortgage rate of 35%, and a required reserve ratio equal to 0.2. Assume banks hold no excess reserves.

a. What is the average real interest rate the bank earns on it's checking deposits?

b. What possible problem could result in a country with simultaneously a high required reserve ratio and high inflation? Explain.

Question 6 (requires class notes from Monday).

Consider the following monetary situation:

- Currency to deposit ratio is $\frac{1}{2}$.
- The required reserve ratio is $\frac{1}{4}$.
- The excess reserve ratio is $e(R) = \frac{1}{2} - 2R$.
- The FED Funds rate is 12.5% or $R = \frac{1}{8}$.
- The Money supply is $900 billion.

a. What is the money multiplier?

b. Calculate the quantity of high powered money in the economy.

c. Calculate the total currency held by the public, total bank reserves, and total checking deposits?

d. How many dollars worth of tbills would the FED have to buy/sell in order to increase the money supply to \$1200 billion? Would the FED buy or sell tbills?

Now suppose a banking crises causes banks to hold substantially more excess reserves. Specifically, suppose excess reserves is now $e(R) = \frac{5}{2} - 2R$.

e. Repeat (a) and (c), using the original quantity of high powered money you found in (b).

f. What is the new money supply?

g. Suppose the FED desires to return the money supply to \$900. Which policy tool should the FED use: (1) change the FED funds rate, (2) auction off dollars via the TAF, or (3) conduct open market operations? Explain.

h. Calculate the exact change in your tool required to return the money supply to \$900.

Question 7 (requires class notes from Monday).

Suppose banks borrow from the FED to satisfy their reserve requirements according to:

$$BRF = 5(R - d)TR \tag{1}$$

Here BRF is borrowed reserves from the FED, R is the bank lending rate, d is the discount rate, and TR are total reserves.

a. If NON-borrowed reserves are \$81 billion, the lending rate is 0.12, and the discount rate is 0.1, what are borrowed reserves and total reserves?

b. If total checking deposits are \$810 billion and the required reserve ratio is 0.1, what are total excess reserves?

c. If the money multiplier is equal to 2, what is the change in the money supply that results when the FED lowers the discount rate from 0.1 to 0.08? Assume TOTAL reserves and the lending rate do not change.