Economics 137 – Midterm Examination

Directions: Answer all questions – points for each question are given in parentheses. To receive credit, you must provide explanations for your answers.

1. (12) What are the major liabilities and assets of the Federal Reserve System? Describe each briefly and explain their relevance to the money supply process.

2. (20) The current yield on a 3-year bond is 12% and the yield on a 1-year bond is 8%. Two years from now, investors believe that the 1-year yield will be 15%. According to the expectations hypothesis, what must the current 2-year yield be?

3. (20) A common model of expectations formation is that of adaptive expectations. Let \( x_t \) denote a random variable and \( x_{t+1}^e \) denote the forecast of \( x_{t+1} \) made in period \( t \). Then adaptive expectations is defined by the expression: 
\[
x_{t+1} = x_t^e + \lambda (x_t - x_t^e)
\]
where \( 0 < \lambda < 1 \).

   a. Give an intuitive explanation for this expression (Hint: What would be the implication if \( \lambda = 0 \) or \( \lambda = 1 \).)

   b. Suppose in the current and all previous periods, both \( x_t \) and its forecast were both equal to 5. Next period, however, \( x_{t+1} = 10 \) and remains at this level forever. Prove that adaptive expectations are not rational. Assume that \( \lambda = 0.5 \). (Hint – what is the nature of the forecast errors?)

4. (10) True or False: Portfolio decisions by the non-banking public and the banking sector have important implications for the Fed’s ability to control the money supply.

5. (20) Relate Marvin Goodfriend’s description of “Go-Stop” monetary policy with Christina Romer’s characterization of post-War World II business cycles.

6. The following questions are based upon Robert Lucas’s imperfect information model:
   a. (10) What three factors influence demand in each market?

   b. (20) Give an intuitive explanation for the signal extraction problem. What are the implications for the slope of the aggregate supply curve?

7. (15) The Federal Reserve System dramatically changed operating procedures in 1979. What was the nature of this change and what events motivated it?