14.02 Principles of Macroeconomics
Spring 06
Quiz 1
Wednesday March 8, 2006

7:30 pm - 9:00 pm

Please answer the following questions. Write your answers directly on the quiz. There are 6 True/False/Uncertain questions, followed by 2 short questions and 1 long question. The quiz is for a total of 100 points. There is a blank page at the end of the quiz to be used for scratch paper. Good luck!

NAME: _____

MIT ID NUMBER: _____

TA: _____

CLASS TIME: _____

EMAIL: _____

(Table is for corrector use only.)

	1	2	3	4	Total
I. T/F/U					
II. SQ 1					
II. SQ 2					
III. LQ 1					
Total					

I. Answer each as True, False, or Uncertain, and explain your choice. (30 points. Each question counts for 5 points.)

1. After Hurricane Katrina the Government spent $500 million rebuilding New Orleans and $100 million in transfers to displaced individuals. The direct effect of these policies was an increase in GDP of $600 million.

2. If a country produces all the oil that it consumes, an increase in the price of oil will lead to an equal increase in CPI and GDP inflation.

3. If nominal GDP is higher than real GDP in a given year, the economy is undergoing inflation in that year.

4. Fiscal policy is more effective in changing GDP if investment is more sensitive to a change in the interest rate.

5. The nominal demand for money only depends on the nominal interest rate and the quantity of final goods produced in the economy.

6. John was fired from his job last year, and gave up looking for a job three weeks ago. He is now officially unemployed.

II. Short Questions (40 points)

1. The Goods Market (25 points)

   Consider the IS model:

   Extend the consumption function to be:

$$C = c_0 + c_1 (Y - T) + c_2 (Y^e - T^e),$$

   where C is annual consumption, Y is current annual income, Y^e is expected future annual income (think of it as the annual income that people expect to receive on average in the future), T is current annual taxes and T^e expected future annual taxes. Assume $c_1 + c_2 < 1$.

   a. Is this new specification an improvement upon the specification we used in class? (3 points)

   b. Is the restriction on $c_1 + c_2$ reasonable? (Hint: Suppose your current and expected future annual income both go up by 1 unit. By how much will you increase consumption?) (5 points)

   c. Assume $I = \bar{I}$, and G given. Also, take T^e, Y^e as given. Write down the equilibrium condition. (3 points)

d. Show, algebraically and graphically, the effects of an increase in Y^e on Y. Explain in words. (9 points)

e. "Optimism is self fulfilling. If people are more optimistic about the future, then things will improve today." Do you agree? Why? (5 points)

2. The "liquidity trap." (15 points)

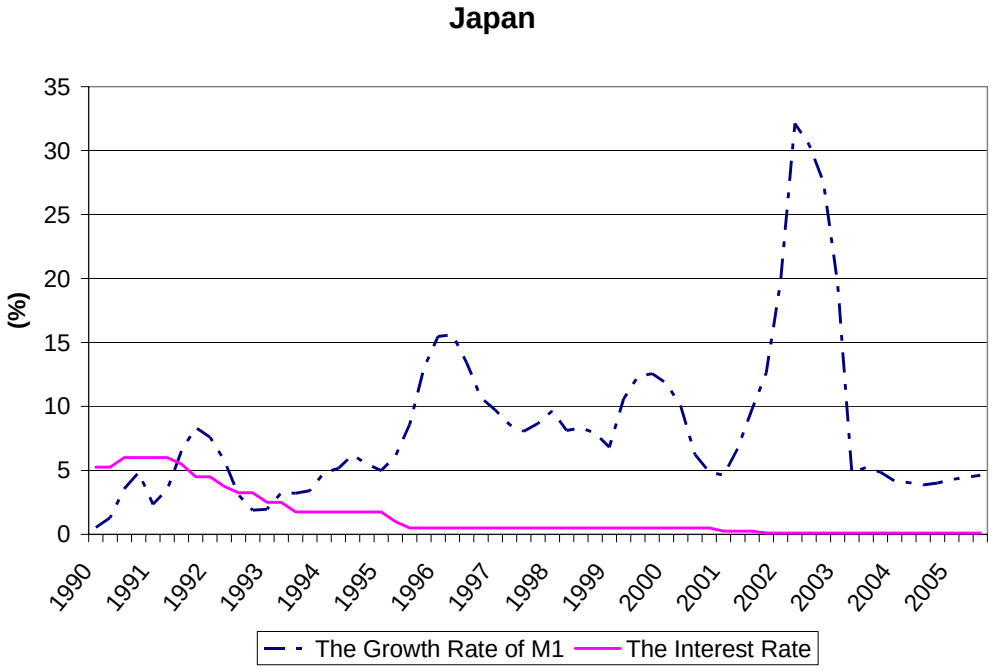
Consider an economy where money demand is given by

$$M^d = a\frac{\$Y}{i}$$

a. What happens to the demand for money as the interest rate goes to zero? Is it a reasonable assumption? (5 points)

b. "All the central bank can do by increasing the money supply is to decrease the interest rate very close to zero, but no further." Do you agree or disagree? (5 points)

c. Look at the figure below, which plots the interest rate and the rate of money growth in Japan. Discuss the following proposition: "Monetary policy has been used to decrease the interest rate to zero in Japan. If this is not sufficient to increase demand and output, there is nothing more monetary policy can do" (5 points)



III. Long Question (30 points)

Consider the following economy:

$$\begin{aligned} C &= c_0 + c_1 (Y - T) \\ I &= b_0 + b_1 Y - b_2 i \\ \frac{M^d}{P} &= Y(d_0 - d_1 i) \end{aligned}$$

c_0, c_1, b_0, b_1, b_2, d_0, d_1 are positive constants, and $c_1 + b_1 < 1$. The price level is given. So are G and T.

The central bank chooses the money stock M so as to achieve a given interest rate i_0 (in other words, the money stock is endogenous).

Note: For all questions, assume that the central bank maintains the interest rate equal to i_0.

a. Determine equilibrium Y, C and I. Determine in turn the level of the money stock, M. (6 points)

b. Suppose the government wants to increase output by ΔY. It wants to do so by increasing government spending G. Derive the required change in G, ΔG. Derive the change in the budget deficit. (6 points)

c. Suppose again the government wants to increase output by ΔY. It now wants to do so by decreasing taxes T. Derive the required change in T, ΔT. Derive the change in the government deficit. Explain the different implications of this policy from the previous one for the budget deficit. (6 points)

d. Suppose again the government wants to increase output by ΔY. It now wants to do while maintaining budget balance, i.e. $\Delta G = \Delta T$. Derive the required change in spending (and in taxes). Compare ΔG in this case to ΔG in question (b). Explain the difference in words. (6 points)

e. Suppose again the government wants to increase output by ΔY. It now wants to do so without increasing consumption. Derive the combination of changes in taxes ΔT, and changes in spending, ΔG, which leads to an increase in output with no change in consumption. What happens to investment? (6 points)