14.02 Principles of Macroeconomics
Spring 05
Quiz 3
Thursday May 19, 2005

9 am - 10:30 am

Please answer the following questions. Write your answers directly on the quiz. There are 6 True/False questions, followed by 2 long questions. 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 and have a great summer!

NAME: _____

MIT ID NUMBER: _____

TA: _____

CLASS TIME: _____

EMAIL: _____

(Table is for corrector use only.)

	1	2	3	4	5	6	Total
I. T/F							
II. LQ 1							
II. LQ 2							
III. LQ 3							
Total							

I. True/ False (30 points)

Answer each as TRUE or FALSE (note - there is no uncertain option), providing a few sentences of explanation for your choice. Each question counts for 5 points.

1. A decrease in government spending and a real depreciation is the right policy mix to improve the trade balance without changing the level of domestic output.

2. It is possible to have a real exchange rate appreciation and a nominal exchange rate depreciation at the same time.

3. In an open economy with fixed exchange rates, the aggregate demand curve is downward sloping since an increase in prices reduces the real money stock, which reduces the interest rate, therefore investment, and therefore output.

4. In an open economy with flexible exchange rates, the announcement today of contractionary monetary policy to be enacted in the future leads to an appreciation of the current nominal exchange rate (assume that this announcement is credible).

5. In an open economy with fixed exchange rates, if the financial markets expect a devaluation in the near future, then, in order to maintain the exchange rate today, the central bank has to decrease the domestic nominal interest rate.

6. Booms are always associated with decreases in the trade balance because of increases in domestic demand and prices.

II. Goods Market in the open economy (35 points)

Consider the following economy. The exchange rate is fixed and equal to one. Consumption, investment, government spending, taxes imports and exports are given by:

$$C = 10 + 0.8(Y - T); \quad I = 10, \quad G = \bar{G}; \quad T = 10; \quad IM = 0.3Y; \quad X = 0.3Y^*$$

1. Write down the equilibrium condition for the goods market, and derive output Y and net exports $NX = X - IM$ as functions of $\bar{G}$ and Y^*. What is the multiplier in this economy? (5 points)

2. Consider an increase in $\bar{G}$ by $\Delta\bar{G} = 1$. Derive the effects on output Y and on net exports NX. Explain in words. (5 points)

3. Assume that the foreign economy is the mirror image of the domestic economy, so:

$$C^* = 10 + 0.8(Y^* - T^*); \quad I^* = 10, \quad G^* = \bar{G}^*; \quad T^* = 10; \quad IM^* = 0.3Y^*; \quad X^* = 0.3Y$$

Write down the equilibrium condition for the goods market in the foreign economy, and derive foreign output Y^* as a function of $\bar{G}^*$ and Y. (5 points)

4. Using the equations giving Y as a function of $\bar{G}$ and Y^*, and Y^* as a function of $\bar{G}^*$ and Y, solve for domestic and foreign output as functions of $\bar{G}$ and $\bar{G}^*$ (i.e solve the system of two equations). (5 points)

5. Consider again an increase in $\bar{G}$ by $\Delta\bar{G} = 1$. Derive the effects on domestic output, Y and foreign output, Y^*, and on net exports, NX. (5 points)

6. Compare the effects of $\bar{G}$ on Y and NX in part 2 and part 5. Explain why they differ. (10 points)

III. AS-AD in the open economy with fixed exchange rates (35 points)

Consider the following economy:

$$\text{IS}: \quad Y = C(Y) + I(Y, i) + G + NX\left(Y, Y^*, \frac{EP}{P^*}\right)$$

$$\text{LM}: \qquad\qquad \frac{M}{P} = YL(i)$$

$$\text{IP}: \quad (1 + i) = (1 + i^*)\frac{E}{E^e}$$

Assume throughout that this economy operates under a fixed exchange rate, so $E = E^e = \bar{E}$.

1. Show that the IS and IP relation imply a negative relation between Y and P, given $G, \bar{E}, Y^*, P^*$. Call this the aggregate demand relation (AD). Explain how it differs from the AD relation derived in the closed economy. (6 points)

Suppose the aggregate supply relation is given by the same relation as in the closed economy:

$$P = P^e(1 + \mu)F(1 - \frac{Y}{L}, z)$$

2. Draw the AD and AS curves in the P, Y space. (5 points)

3. Assume that initially $P = P^e$ and $Y = Y_n$ (where Y_n is the natural level of output). Starting from this equilibrium, consider an increase in G. Characterize the short run effects on output, the price level, the real exchange rate, and net exports. (7 points)

4. Characterize the medium run effects of the increase in G on output, the price level, the real exchange rate, and net exports. (7 points)

5. "In the medium run, budget deficits lead, one for one, to trade deficits." Discuss. (one or two paragraphs) (5 points)

6. "In the medium run, budget deficits have no effect on investment. Fears that deficits will lead to low capital accumulation and lower output in the future are simply unfounded." (one or two paragraphs) Discuss (5 points)

Scratch Paper