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Discussion Session 8 (Chapter 18-20)

PART A: TRUE/FALSE/UNCERTAIN (Explain it.)

- a. Consider the Mundell-Flemming model of a small open economy. If the government increases taxes, the exchange rate will depreciate. (Assume taxes are lump-sum, not proportional.) In order to bring the exchange rate down to its original level, the Central Bank should expand the money supply.

False. In the M-F model, if the government raises taxes, the exchange rate weakens, but the CB can bring it back to its original level by increasing the money supply to attract foreign investment.

- b. In an open economy, fiscal policy is more effective than (or at least as effective as) monetary policy (in terms of changing output).

False. In an open economy with a floating exchange rate, monetary policy works better than fiscal policy for boosting output because it weakens the currency, which increases exports, while fiscal policy often leads to a stronger currency that offsets its benefits.

PART B - ESSAY TYPE QUESTIONS.

Q 1. Using the definition of the real exchange, you can show that

$$\frac{(\varepsilon_t - \varepsilon_{t-1})}{\varepsilon_{t-1}} = \frac{(E_t - E_{t-1})}{E_{t-1}} + \pi_t - \pi_t^*$$

In words, the percentage real appreciation equals the percentage nominal appreciation plus the difference between domestic and foreign inflation.

- a. If domestic inflation is higher than foreign inflation, but the domestic country has a fixed exchange rate, what happens to the real exchange rate over time? Assume that the Marshall-Lerner condition holds. What happens to the trade balance over time? Explain in words.

If domestic inflation is higher than foreign inflation and the exchange rate is fixed, the real exchange rate will appreciate over time (goods become more expensive relative to foreign goods). If the Marshall-Lerner condition holds, this appreciation will make trade deficits more than trade surplus which affects trade balance negatively. Since exports become less competitive, and imports become relatively cheaper.

- b. Suppose the real exchange rate is constant—say, at the level required for net exports (or the current account) to equal zero. In this case, if domestic inflation is higher than foreign inflation, what must happen over time to maintain a trade balance of zero?

While domestic inflation is higher than foreign inflation under fixed exchange rate the currency must gradually depreciate to keep the trade balance balanced.

Q 2.

- i. Consider an economy with a trade deficit ($NX < 0$) and with output equal to its natural level. Suppose that, even though output may deviate from its natural level in the short run, it returns to its natural level in the medium run. Assume that the natural level is unaffected by the real exchange rate. What must happen to the real exchange rate over the medium run to eliminate the trade deficit (i.e., to increase NX to 0)?

To eliminate the trade deficit in the medium run, the real exchange rate must depreciate. This makes domestic goods relatively cheaper. Output does not affect the real exchange rate since its natural level. A weaker currency make export cheaper and boost NX and then equals zero.

- ii. Now write down the national income identity. Assume again that output returns to its natural level in the medium run. If NX increases to 0, what must happen to domestic demand ($C + I + G$) in the medium run? What government policies are available to reduce domestic demand in the medium run? Identify which components of domestic demand each of these policies affect.

The national income identity : $Y = C + I + G + NX$

To balance the increase in net export and keep output stable, the government can reduce domestic demand by raising interest rate or cutting government spending and taxes. Government should implement contractionary polices.

Q 3. Consider the following model of an open economy.

$$C=400+0.5Y-T$$

$$I=700-3000i$$

$$G=200$$

$$T=100$$

$$NX=1000+0.2Y^*-0.2Y-20E$$

$$MP=200-300i+0.5Y$$

$$M_s=1600$$

$$P=1$$

$$Y^*=800$$

$$i^*=0.1$$

$$P^*=1$$

Where I and i^* are the domestic and foreign nominal interest rates, E is the real exchange rate, Y^* is the foreign output level and other variables have the usual meanings. There is no inflation in this economy. Uncovered interest rate parity is held and expected exchange rate equals to the current exchange rate. Assume that this economy operates under fixed exchange rate system.

- a. Calculate the equilibrium output(Y), interest rate(i), investment(I), nominal exchange rate(E), and trade balance.

$$MP=MS/P \quad MS/1 \quad \text{At equilibrium } MS=MP$$

$$1600=200-300(0.1)+0.5Y$$

$$Y=2860$$

$$C=400+0.5(Y-T)$$

$$C=400+0.5(2860-100)$$

$$C=1780$$

$$I=700-3000i=700-3000(0.1)=700-300=400$$

$$2860=1780+400+200+NX$$

$$NX=480$$

$$NX=1000+0.2Y^*-0.2Y-20E$$

$$NX=1000+0.2(800)-0.2(2860)-20E$$

$$NX=1000+160-572-20E$$

$$480=588-20E$$

$$E=5,4$$

- b. If the government expenditures increase to 300. What should the central bank do in order to keep up with the fixed exchange rate regime? Calculate the exact amount of the change.

$$Y=400+0.5(Y-100)+700+3000i+200+1000+0.2(800)-0.2Y-20(5,4)$$

$$Y=400-50+0.5(2760)+700+300+200+1000+160-0.2(2860)-20(5,4)$$

$$Y=350+1380+1000+1000+200+160-1430-108$$

$$Y=(300+0.5Y)+400+300+(1140-0.2Y)$$

$$Y=(300+0.5Y)+400+300+(1140-0.2Y) \quad Y=1740+0.3Y$$

$$Y=3000$$

$$\text{New market eqm: } MP=200-300i+0.5Y=1670$$

Ms increase by 70

- c. If the Central Bank of the country thinks that they have to keep $NX=0$ while keeping the initial output level at 5000, what kind of a policy mix should it use?

$$Y^*=800 \quad Y=5000 \quad NX=0 \quad 0=1000-0.2(5000)-20E \quad 20E=-160 \quad E=8$$

$$Y=C+I+G+NX \quad 5000=C+I+G+0 \quad C=400+0.5(Y-T) \quad I=700-3000i \quad i=0.1 \quad 5000=2850+400+G+0$$

$$5000=3250+G \quad G=1750$$

increase gov spending to 1750 to keep output at 5000

PART C: MULTIPLE CHOICE

Q 1. Other things equal, if exchange rates are flexible, and if U.S. consumers increase their demand for Japanese goods at the same time that Japanese consumers increase their demand for U.S. goods, then we would expect the dollar to

- A) appreciate relative to the yen.
- B) depreciates relative to the yen.
- C) remain unchanged in value relative to the yen.
- D) appreciate, depreciate, or remain unchanged in value relative to the yen impossible to determine without more information.

Q 2. Suppose that, in Year 1, the price of the U.K. pound is $\$1.44 = \pounds 1$. In year 2, the price is $\$1.48 = \pounds 1$. An economist would validly conclude that, from Year 1 to Year 2, the U.K. pound _____ relative to the U.S. dollar and, simultaneously, the U.S. dollar _____ relative to the U.K. pound.

- A) appreciated; appreciated
- B) appreciated; depreciated**
- C) depreciated; appreciated
- D) depreciated; depreciated

Q 3. For this question, assume there is perfect competition in the product market. Given this assumption, we know that m (in the price setting equation $P = (1+m)W$) will be equal to:

- A. W .
- B. P .
- C. 1 .
- D. W/P .
- E. 0 .**

Q 4. The data suggest that in the European Union countries, the natural rate of unemployment

- A) has steadily declined over the past two decades.**
- B) has become less "natural," since it is now almost entirely determined by the policies of a few large corporations.
- C) is no longer a relevant concept.
- D) will soon exceed the percentage of the labor force that is working

Q 5. For this question, assume that there is a simultaneous tax cut and monetary contraction. In a flexible exchange rate regime, we know with certainty that:

- A) the exchange rate would decrease, and output would increase.
- B) the exchange rate and output would both increase.
- C) the exchange rate would increase, and output would decrease.
- D) the exchange rate would increase.**
- E) none of the above