

1. (35%) Consider an open market economy operating below full employment:
  - a) Explain how an increase in the government budget deficit through increased government spending or reduced taxes would affect aggregate demand (i.e., GDP or  $Y$ ), and explain how this would also affect the price of foreign exchange ( $E$ ) and the current account balance (net exports  $NX$ ) using the AA-DD model. Use the E-R-M graph to show how the increase in GDP would affect the interest rate ( $R$ ).
  - b) How would your answer to (a) be different if the increase in the budget deficit was considered by foreign currency traders to be permanent? Show this on a new AA-DD diagram.
  - c) How would your answer to (a) be different if the central bank was unilaterally committed to a fixed exchange rate? Show this on a new AA-DD diagram. How would this affect the balance of payments and the central bank's balance sheet?
  - d) Explain how an open market purchase of bonds by the central bank would affect  $Y$ , and explain how this would also affect  $E$  and  $NX$  using the AA-DD model for an economy operating below full employment. Use the E-R-M graph to show how the increase in  $Y$  would affect  $R$ .
  - e) How would your answer to (d) be different if the increase in the open market operation was considered by foreign currency traders to be permanent? Show this on a new AA-DD diagram.
  - f) How would your answer to (d) be different if the central bank was unilaterally committed to a fixed exchange rate? Show this on a new AA-DD diagram. How would this affect the balance of payments and the central bank's balance sheet?
  - g) Assume instead that the economy is operating at full-employment. Using the AD-AS diagram, explain which of the above six alternatives (a, b, c, d, e, and f) would be most inflationary, and which would be the least.
  
2. (20%) Consider two large economies that depend on trade with each other. The Home country is below full employment and the Foreign country is not. Relying on your answers in (1) above, use an HH-FF diagram to explain the following scenarios. What happens to aggregate demand in each country, the balance of payments or the exchange rate between them, and inflation in each?
  - a) Suppose the Home country decides to use monetary policy to stimulate its economy. Under a system like the Gold Standard, the Home central bank takes responsibility for maintaining a fixed exchange rate.
  - b) Suppose in (a) that instead that the countries are under a system like Bretton Woods, in which the Foreign central bank takes responsibility for maintaining a fixed exchange rate.
  - c) Suppose that both central banks are committed to a bilateral fixed exchange rate, as in the European Union before monetary union. Foreign now decides to engage in expansionary fiscal policy combined with tight monetary policy.
  - d) Suppose that the exchange rate is floating. Home decides to stimulate its economy with fiscal policy, while Foreign engages in expansionary monetary policy.

**3. (15%)** Consider a small economy that has unilaterally pegged its currency against that of a large trading partner, and its currency is currently considered undervalued (i.e., it has pegged E above the market-clearing rate).

- a) What are the advantages and disadvantages of having E pegged too high? Assume the economy is operating well below full employment and the exchange rate is credible. What are the effects of this undervaluation on the balance of payments, the money supply, the trade balance, output, and money demand? How might this undervaluation provide a form of implicit insurance for foreign investors?
- b) Once the economy reaches full employment, how would the undervalued exchange rate affect the small country's price level and the real effective exchange rate? Show this on the AD-AS diagram.
- c) Suppose that the small economy is pressured by its large trading partner to revalue its nominal exchange rate, so that the official rate for E falls, and the revaluation is one-time and credible. Using the AA-DD model with the E-R-M diagram, explain how this revaluation would affect the balance of payments, the money supply, the trade balance, output, and money demand?

**4. (15%)** Consider a different small economy that has unilaterally pegged its currency against that of a large trading partner. Suppose that investors currently notice that the current account deficit is rising and financial inflows are slowing, so they begin to expect that the country's central bank may have to devalue the currency in spite of its protests to the contrary.

- a) Explain how and why speculators could attack the currency, and why this attack has little downside risk.
- b) Use the E-R-M graph and the AA-DD model to explain the effects of the expectation of a future devaluation on the balance of payments, foreign exchange reserves, money supply, and interest rates. If domestic private investment is sensitive to interest rates, what will happen to the economy?
- c) Compare the effects of alternative responses: (i) the central bank is proactive in defending the currency, and wants to ensure that it does not run out of foreign currency reserves, (ii) the central bank is passive in defending the currency, but does not sterilize its foreign exchange transactions, (iii) the central bank sterilizes its foreign exchange transactions, and is unwilling to allow a recession.

**5. (15%) Shorter Essay Questions.** Answer three of the following four questions (5% each)

- A. What is the J-curve? Is it more likely to apply in the short run or the long run? Is it more likely when trade is balanced, in surplus, or in deficit?
- B. How did the Bretton Woods system differ from the gold standard? What unique advantage did it offer the United States?
- C. If unexpected shocks to economies tend to be fiscal in nature (e.g., a sudden drop in investment spending), which type of exchange rate regime – fixed or floating – would lead to greater gains from international asset diversification?
- D. What is the trilemma? Explain.