MACROECONOMICS

Section II

Planning Time—10 minutes

Writing Time—50 minutes

Directions: You have fifty minutes to answer all three of the following questions. It is suggested that you spend approximately half your time on the first question and divide the remaining time equally between the next two questions. In answering the questions, you should emphasize the line of reasoning that generated your results; it is not enough to list the results of your analysis. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes.

1. Assume that a country's economy is operating below full employment and has a balanced trade, and that the government is running a budget deficit.

   (a) Draw a correctly labeled aggregate demand and aggregate supply graph and show the economy's current output and price level.

   (b) Suppose that the country's government increases spending to achieve full-employment output. On your graph in part (a), show the short-run effect that the increased deficit spending would have on each of the following.

      (i) Aggregate demand

      (ii) Output

      (iii) Price level

   (c) Using a correctly labeled loanable-funds market graph, show the effect of the increase in deficit spending on the real interest rate.

   (d) Given your answer in part (c), explain how the international value of the country's currency will be affected.

   (e) Based on your answer in part (d), respond to each of the following.

      (i) Explain the effects on the country's exports and imports.

      (ii) Identify the effect on the country's trade balance.

   (f) Given the results in the loanable-funds market discussed in part (c), explain how this government deficit spending would influence long-run growth.

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2. (a) Assume that businesses are granted a tax credit on spending for machinery. Using a correctly labeled graph of the loanable funds market, show the effect of the business sector's response on the real interest rate.

   (b) Now assume instead that the tax rate on interest income from household savings is lowered and there is no change in government budget deficit. Using a second correctly labeled graph of the loanable funds market, show the effect of the households' response on the real interest rate.

   (c) Given your answer to part (b), explain what will happen to the country's production possibilities curve in the long run.

3. Assume that the real interest rate in both the United States and the European Union equals 4.5 percent.

   (a) Assume that the real interest rate in the United States falls to 3.75 percent.

      (i) How will the flow of financial capital between the United States and the European Union be affected? Explain.

      (ii) Using a correctly labeled graph of the foreign exchange market for the euro, show how the value of the euro would change relative to the United States dollar in a flexible exchange rate system.

   (b) Explain how the change in the value of the euro in part (a)(ii) would affect the European Union's net exports.

STOP

END OF EXAM

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1. Assume that a country's economy is in equilibrium.

   (a) Using a correctly labeled aggregate demand and aggregate supply graph, show how an increase in the price of oil, an important natural resource, will affect the following in the short run.

   (i) Real output

   (ii) Price level

   ~~(b) Using a correctly labeled graph, show how the increase in the price of oil affects the short-run Phillips curve.~~

   (c) Assume that the central bank of the country responds to the higher price of oil by increasing the money supply.

   (i) Explain the process by which the increase in the money supply will affect the aggregate demand in the short run.

   (ii) Indicate how the increase in the money supply will affect real output and the price level.

   (d) Now assume that instead of using monetary policy in response to the oil price increase, the government reduces business taxes, which results in lower production costs. Using a new correctly labeled graph, show the effect of the reduction in business taxes on the following.

   (i) Real output

   (ii) Price level

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3. The Federal Reserve buys $5,000 in bonds from Clark Consulting Services, which then deposits the money in a checking account at First Generation Bank.

   (a) As a result of the Federal Reserve's action, what is the change in the money supply if the required reserve ratio is 100 percent?

   (b) If the required reserve ratio is reduced to 10 percent, calculate the following.

      (i) The maximum amount this bank could lend from this deposit

      (ii) The maximum increase in the total money supply from the Federal Reserve's purchase of bonds

   (c) If banks keep some of the deposit as excess reserves, how will this influence the change in the money supply that was determined in part (b)(ii)? Explain.

   (d) If the public decides to hold some money in the form of currency rather than in demand deposits, how will this influence the change in the money supply that was determined in part (b)(ii)? Explain.

END OF EXAMINATION

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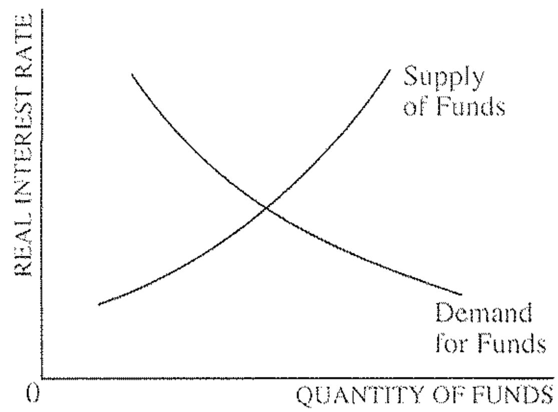

2. The graph above shows the loanable funds market for a country.

   (a) Assume that now the country's government increases deficit spending. Explain how the increase in deficit spending will affect the real interest rate.

   (b) Indicate how the real interest rate change you identified in part (a) will affect investment in plant and equipment.

   (c) Explain how the real interest rate change you identified in part (a) will affect long-term economic growth.

   (d) Explain how the real interest rate change you identified in part (a) will affect each of the following in the foreign exchange market.

   (i) The demand for the country's currency

   (ii) The value of the country's currency

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2. The central bank of the country of Sewell sells bonds on the open market.

   (a) Assume that banks in Sewell have no excess reserves. What is the effect of the central bank's action on the amount of customer loans that banks in Sewell can make?

   (b) Using a correctly labeled graph of the money market, show the effect of the central bank's action on the nominal interest rate in Sewell.

   (c) What is the effect of the central bank's action on each of the following in Sewell?

      (i) Price level

      (ii) Real interest rate. Explain.

   (d) Given your answer in part (c)(ii), how is the international value of Sewell's currency, the ono, affected? Explain.

3. How does each of the following changes affect the real gross domestic product and price level of an open economy in the short run? Explain each.

   (a) An increase in the price of crude oil, an important natural resource

   (b) A technological change that increases the productivity of labor

   (c) An increase in spending by consumers

   (d) The depreciation of the country's currency in the foreign exchange market

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1. Assume that the United States economy is currently in long-run equilibrium.
   (a) Draw a correctly labeled graph of aggregate demand and aggregate supply and show each of the following.
      (i) The long-run aggregate supply curve
      (ii) The current equilibrium output and price levels, labeled as Y_E and PL_E, respectively
   (b) Assume that the government increases spending on national defense without raising taxes.
      (i) On your graph in part (a), show how the government action affects aggregate demand.
      (ii) How will this government action affect the unemployment rate in the short run? Explain.
   (c) Assume that the economy adjusts to a new long-run equilibrium after the increase in government spending.
      (i) How will the short-run aggregate supply curve in the new long-run equilibrium compare with that in the initial long-run equilibrium in part (a) ? Explain.
      (ii) On your graph in part (a), label the new long-run equilibrium price level as PL_2.
   (d) In order to finance the increase in government spending on national defense from part (b), the government borrows funds from the public. Using a correctly labeled graph of the loanable funds market, show the effect of the government's borrowing on the real interest rate.
   (e) Given the change in the real interest rate in part (d), what is the impact on each of the following?
      (i) Investment
      (ii) Economic growth rate. Explain.

2. A drop in credit card fees causes people to use credit cards more often for transactions and demand less money.
   (a) Using a correctly labeled graph of the money market, show how the nominal interest rate will be affected.
   (b) Given the interest rate change in part (a), what will happen to bond prices in the short run?
   (c) Given the interest rate change in part (a), what will happen to the price level in the short run? Explain.
   (d) Identify an open-market operation the Federal Reserve could use to keep the nominal interest rate constant at the level that existed before the drop in credit card fees. Explain.

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2. In Country Z, the required reserve ratio is 10 percent. Assume that the central bank sells $50 million in government securities on the open market.

   (a) Calculate each of the following.

   (i) The total change in reserves in the banking system

   (ii) The maximum possible change in the money supply

   (b) Using a correctly labeled graph of the money market, show the impact of the central bank's bond sale on the nominal interest rate.

   (c) What is the impact of the central bank's bond sale on the equilibrium price level in the short run?

   (d) As a result of the price level change in part (c), are people with fixed incomes better off, worse off, or unaffected? Explain.

3. Assume that the real interest rates in both Canada and India have been 5 percent. Now the real interest rate in India increases to 8 percent.

   (a) Using a correctly labeled graph of the foreign exchange market for the Canadian dollar, show the effect of the higher real interest rate in India on each of the following.

   (i) Supply of the Canadian dollar. Explain.

   (ii) The value of the Canadian dollar, assuming flexible exchange rates

   (b) Using a correctly labeled graph of the loanable funds market in Canada, show how the increase in the real interest rate in India affects the real interest rate in Canada.

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3. Assume that the reserve requirement is 20 percent and banks hold no excess reserves.

   (a) Assume that Kim deposits $100 of cash from her pocket into her checking account. Calculate each of the following.

      (i) The maximum dollar amount the commercial bank can initially lend

      (ii) The maximum total change in demand deposits in the banking system

      (iii) The maximum change in the money supply

   (b) Assume that the Federal Reserve buys $5 million in government bonds on the open market. As a result of the open market purchase, calculate the maximum increase in the money supply in the banking system.

   (c) Given the increase in the money supply in part (b), what happens to real wages in the short run? Explain.

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1. Assume that a country's economy is operating at less than full employment.
   (a) Draw a correctly labeled graph of aggregate demand and aggregate supply, and show each of the following.
      (i) Long-run aggregate supply curve
      (ii) Current output and price level
   (b) Assume that policy makers take no policy action and that prices and wages are flexible. Explain what will happen to each of the following.
      (i) Short-run aggregate supply
      (ii) Employment
   (c) Now assume that instead of taking no policy action, the government implements a special tax incentive to encourage individuals to increase saving for retirement. Draw a correctly labeled graph of the loanable funds market. Show how the real interest rate is affected.
   (d) Given your answer in part (c), explain how aggregate supply is affected in the long run.

2. Banks play an important role in determining changes in the money supply.
   (a) Assume that a bank receives a cash deposit of $9,000 from a customer. What is the immediate impact of this transaction on the money supply? Explain.
   (b) Suppose that the reserve requirement is 10 percent and banks voluntarily keep an additional 10 percent in reserves. Calculate each of the following.
      (i) The maximum amount by which this bank will increase its loans from the transaction in part (a)
      (ii) The maximum increase in the money supply that will be generated from the transaction in part (a)
   (c) Assume that the government increases spending by $9,000, which is financed by a sale of bonds to the central bank.
      (i) Indicate what will happen to the money supply.
      (ii) Explain what will happen to the money demand.

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