

1. Assume that the economy of Barrikos is in short-run equilibrium, with its economic data summarized in the table provided. The government budget is balanced, and the capital and financial account (CFA) balance is zero.

Cyclical unemployment rate	6%
Natural unemployment rate	4%
Structural unemployment rate	1%
Actual inflation rate	3%
Expected inflation rate	5%

- A. What is the numerical value of the actual unemployment rate in Barrikos?
- B. Using the relevant numerical values, draw a correctly labeled graph of the short-run and long-run Phillips curves for Barrikos. Indicate the current short-run equilibrium with a point labeled X. Plot the relevant numerical values on the graph.
- C. Based on your graph in part B, identify one specific fiscal policy action that the government of Barrikos would take to move the economy toward long-run equilibrium.
- D. Assume that the fiscal policy action identified in part C is implemented.
- Will the government budget in Barrikos move into surplus, move into deficit, or remain balanced? Explain.
 - Assume there is no change in inflationary expectations. On your graph in part B, show a possible new short-run equilibrium point, labeled Z, that would result from the fiscal policy action identified in part C.
 - Draw a correctly labeled graph of the loanable funds market, and show the effect of the fiscal policy action identified in part C on the real interest rate.
- E. Barrikos has an open economy and a flexible exchange rate. Based solely on the change in the real interest rate in Barrikos shown on your graph in part D (iii), will Barrikos' capital and financial account (CFA) balance move into surplus, move into deficit, or remain the same? Explain.
- F. Based on the change in Barrikos' capital and financial account (CFA) balance identified in part E, what will happen to the international value of Barrikos' currency? Explain.

3. Assume Malaysia's economy is in a recession and its government currently has a balanced budget.
- Identify a specific fiscal policy action that the government of Malaysia would implement to address the recession.
 - How will the fiscal policy action identified in part (a) affect the real interest rate in Malaysia? Explain.
 - Malaysia and Japan are trading partners with flexible exchange rates. Malaysia's currency is the ringgit (MYR), and Japan's currency is the yen (JPY). Draw a correctly labeled graph of the foreign exchange market for the ringgit relative to the yen. Show the effect of the change in the real interest rate identified in part (b) on the international value of the ringgit.
 - As a result of the change in the value of the ringgit shown in part (c), will Malaysia's imports increase, decrease, or remain the same? Explain.

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

STOP

END OF EXAM

1. Assume the economy of Vanderlandia is in short-run equilibrium with a real GDP of \$500 million. The full-employment level of real GDP is \$550 million.
- (a) Draw a correctly labeled graph of the aggregate demand, short-run aggregate supply, and long-run aggregate supply curves, and show each of the following.
- (i) The current equilibrium real output and price level, labeled Y_1 and PL_1 , respectively
 - (ii) The full-employment output, labeled Y_F
- (b) Assume no policy action is taken to restore full employment.
- (i) Explain how the economy will adjust in the long run.
 - (ii) Following the long-run adjustment process, will the price level in Vanderlandia be greater than, less than, or equal to PL_1 shown on your graph in part (a)?
- (c) Assume instead that policymakers in Vanderlandia are considering changing government spending to restore full employment in the short run and that the marginal propensity to save is 0.2.
- (i) Calculate the minimum change and state the direction of change in government spending required to completely close the output gap in the short run. Show your work.
 - (ii) On your graph in part (a), show the short-run effect of the change in government spending in part (c)(i), labeling the new equilibrium price level PL_2 .
- (d) Draw a correctly labeled graph of the loanable funds market, and show the effect of the change in government spending in part (c)(i) on the equilibrium real interest rate.
- (e) Based on the change in the real interest rate shown on your graph in part (d), what will happen to each of the following?
- (i) The price of previously issued bonds
 - (ii) The rate of economic growth in the long run. Explain.

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

3. The economy of Country Zeta is in long-run equilibrium; however, the government is concerned about the size of the national debt.
- (a) Identify one specific fiscal policy action the government could take to reduce the national debt.
 - (b) Draw a correctly labeled graph of the loanable funds market, and show the effect of the fiscal policy action identified in part (a) on the real interest rate.
 - (c) Based on the change in the real interest rate identified in part (b), what will happen to each of the following?
 - (i) Aggregate demand in the short run. Explain.
 - (ii) Potential real output. Explain.

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

STOP

END OF EXAM

2. Assume a country's economy is currently operating below full employment.
- (a) Identify a fiscal policy action the country's government could implement to restore full employment.
 - (b) Draw a correctly labeled graph of the loanable funds market, and show the effect of the fiscal policy action identified in part (a) on the equilibrium real interest rate.
 - (c) Based solely on the real interest rate change shown in part (b), what will happen to each of the following?
 - (i) Net exports. Explain.
 - (ii) The stock of physical capital. Explain.

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

MACROECONOMICS**Section II****Total Time—1 hour****Reading Period—10 minutes****Writing Period—50 minutes**

Directions: You are advised to spend the first 10 minutes reading all of the questions and planning your answers. You will then have 50 minutes to answer all three of the following questions. You may begin writing your responses before the reading period is over. 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. 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. Use a pen with black or dark blue ink.

1. Assume the economy of Artland is currently operating above full employment.
 - (a) Draw a correctly labeled graph of the short-run aggregate supply, long-run aggregate supply, and aggregate demand curves, and show each of the following.
 - (i) The current equilibrium real output and price level, labeled as Y_1 and PL_1 , respectively
 - (ii) The full-employment output, labeled as Y_f
 - (b) Assume the central bank and the government do not take any policy actions to close the output gap.
 - (i) On your graph in part (a), show how the economy automatically adjusts in the long run and label the new equilibrium price level PL_2 .
 - (ii) Explain the cause of the adjustment shown in part (b)(i).
 - (c) Alternatively, suppose the government wants to close the output gap using fiscal policy.
 - (i) Identify a fiscal policy action the government could implement to close the output gap.
 - (ii) How will the fiscal policy action identified in part (c)(i) affect the following?
 - The unemployment rate
 - The natural rate of unemployment
 - (iii) In closing the output gap, will the automatic adjustment identified in part (b)(i) produce a higher, a lower, or the same price level compared to the fiscal policy identified in part (c)(i) ?
 - (d) Draw a correctly labeled graph of the market for loanable funds. Show the effect of the fiscal policy action identified in part (c)(i) on the equilibrium real interest rate.
 - (e) Given the interest rate change identified in part (d), will the long-run aggregate supply curve shift to the right, shift to the left, or remain the same in the long run? Explain.

MACROECONOMICS**Section II****Total Time—1 hour****Reading Period—10 minutes****Writing Period—50 minutes**

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1. Assume the United States economy is in recession.
 - (a) Draw a correctly labeled graph of the long-run aggregate supply, short-run aggregate supply, and aggregate demand curves, and show each of the following.
 - (i) Current price level, labeled PL_1
 - (ii) Current output, labeled Y_1
 - (b) Now assume the euro zone, a major trading partner of the United States, enters into a recession.
 - (i) What will be the effect on United States exports to the euro zone? Explain.
 - (ii) On your graph in part (a), show the effect of the change identified in part (b)(i) on real output in the United States.
 - (iii) What will be the effect of the change identified in part (b)(ii) on unemployment in the United States?
 - (c) Assume the euro zone recession causes a decrease in the demand for United States dollars in the foreign exchange market.
 - (i) Will the euro appreciate, depreciate, or remain unchanged against the dollar? Explain.
 - (ii) Draw a correctly labeled graph of the foreign exchange market for dollars, and show the effect of the decrease in the demand for dollars on the exchange rate for dollars.
 - (d) Assume the United States implements a combination of expansionary fiscal and monetary policies. In the absence of complete crowding out, what will be the effect of these policies on each of the following?
 - (i) Aggregate demand in the United States
 - (ii) The price level in the United States
 - (iii) Interest rates in the United States. Explain.

2. Country X and Country Y are trading partners, and both produce furnaces and solar panels. The countries can produce the following amounts using equal amounts of resources.

Country X: 6 furnaces or 8 solar panels

Country Y: 6 furnaces or 12 solar panels

- (a) Which country has an absolute advantage in producing solar panels?
- (b) Calculate the opportunity cost of a furnace in Country Y.
- (c) Which country has the comparative advantage in producing furnaces? Explain.
- (d) If the terms of trade were that 2 furnaces are exchanged for 1 solar panel, should Country X produce solar panels domestically or import solar panels from Country Y?

3. Exchange rates and interest rates are important for macroeconomic decision making.

- (a) How does an increase in Japan's government budget deficit affect each of the following?
 - (i) The real interest rate in the short run in Japan. Explain.
 - (ii) Private domestic investment in plant and equipment in Japan
- (b) Draw a correctly labeled graph of the foreign exchange market for the euro, and show the effect of the change in the real interest rate in Japan from part (a)(i) on each of the following.
 - (i) Supply of euros. Explain.
 - (ii) Yen price of the euro
- (c) To reverse the change in the yen price of the euro identified in part (b)(ii), should the European Central Bank buy or sell euros in the foreign exchange market?

STOP

END OF EXAM

MACROECONOMICS

Section II

Planning Time—10 minutes

Writing Time—50 minutes

Directions: You have 10 minutes to read all of the questions in this booklet, to sketch graphs, to make notes, and to plan your answers. You will then have 50 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. Use a pen with black or dark blue ink.

- 1. Assume that the United States economy is currently operating below the full-employment level of real gross domestic product with a balanced budget.
 - (a) Draw a correctly labeled graph of aggregate demand, short-run aggregate supply, and long-run aggregate supply, and show each of the following in the United States.
 - (i) Current output and price level, labeled as Y_1 and PL_1 , respectively
 - (ii) Full-employment output, labeled as Y_f
 - (b) The United States government increases spending on goods and services by \$100 billion, which is financed by borrowing. How will the increase in government spending affect each of the following?
 - (i) Cyclical unemployment
 - (ii) The natural rate of unemployment
 - (c) If the marginal propensity to consume is equal to 0.75, calculate the maximum possible change in real gross domestic product that could result from the \$100 billion increase in government spending.
 - (d) Using a correctly labeled graph of the loanable funds market, show the effect of the \$100 billion increase in government spending on the real interest rate.
 - (e) Based on the real interest rate change in part (d), what is the effect on the long-run economic growth rate? Explain.
 - (f) Now assume that instead of financing the \$100 billion increase in government spending by borrowing, the United States government increases taxes by \$100 billion. With this equal increase in government spending and taxes, will the real gross domestic product increase, decrease, or remain the same? Explain.