

1. The economy of Micanapy is in short-run equilibrium and is experiencing an inflationary gap.

Part A

Draw a correctly labeled graph of the aggregate demand, short-run aggregate supply, and long-run aggregate supply curves for Micanapy, and show each of the following.

- The current equilibrium real output and price level, labeled Y_1 and PL_1 , respectively
- The full-employment real output, labeled Y_F

Part B

Assume that policymakers take no action to close the inflationary gap. Explain how Micanapy's economy will self-adjust to full employment in the long run.

Part C

Suppose instead that Micanapy's central bank is considering using monetary policy to close the inflationary gap in the short run. The banking system in Micanapy has limited reserves.

- Identify a specific open-market operation that the central bank of Micanapy would implement to close the inflationary gap in the short run.
- Draw a correctly labeled graph of the money market in Micanapy, and show the effect of the open-market operation identified in part C (i) on the nominal interest rate.

Part D

Based solely on the interest rate change shown on your graph in part C (ii), will each of the following increase, decrease, or remain the same in the short run?

- International financial capital flows into Micanapy. Explain.
- The price of previously issued bonds in Micanapy
- Private domestic investment spending in Micanapy

Part E

Based solely on the change in private domestic investment spending identified in part D (iii), will the unemployment rate in Micanapy increase, decrease, or remain the same in the short run? Explain.

3. Lizland is a small island nation, and its currency is the Lizland crown (LIZ). The economy of Lizland is in short-run macroeconomic equilibrium with a 600 million crown recessionary gap.

Part A

Policymakers in Lizland are considering taking action to close the recessionary gap in the short run.

- The central bank of Lizland is considering implementing monetary policy. The banking system of Lizland has ample reserves. Identify a specific monetary policy action the central bank of Lizland would implement to close the recessionary gap in the short run.
- The government of Lizland is also considering changing its spending, and the marginal propensity to consume is 0.75. Calculate the minimum change in government spending and identify the direction of the change required to fully close the 600 million crown recessionary gap in the short run. Show your work.

Part B

Assume that the government of Lizland decides to change its spending as calculated in part A (ii). Based solely on this change, will the price level in Lizland increase, decrease, or remain the same in the short run? Explain.

Part C

The nations of Lizland and Andoh are trading partners with flexible exchange rates. The currency of Andoh is the Andoh note (AND). Draw a correctly labeled graph of the foreign exchange market for the Lizland crown (LIZ). Based solely on the change in the price level in part B, show the change in the international value of the Lizland crown on your graph.

STOP
END OF EXAM

2. The economies of Country L and Country A are currently in short-run equilibrium at output levels below full employment. Both countries intend to use monetary policy to close their output gaps. Country L has a banking system with limited reserves, and Country A has a banking system with ample reserves.
- What open-market operation would Country L implement to move the economy toward full employment in the short run?
 - What specific monetary policy action would Country A implement to move the economy toward full employment in the short run?
 - Draw a correctly labeled graph of the reserve market in Country A, and show the effect of the monetary policy action identified in part B on the policy rate.
 - Assume instead that no policy actions are taken in Country A and that the economy remains in short-run equilibrium at an output level below full employment. Will short-run aggregate supply in Country A increase, decrease, or remain the same as the economy self-adjusts in the long run? Explain.

2. Assume the economy of Jenland is in short-run equilibrium at a real output level above full-employment real output.

- A. The banking system in Jenland has ample reserves. Identify a specific monetary policy action that the central bank of Jenland would implement to return the economy to full employment in the short run.
- B. Draw a correctly labeled graph of the reserve market for Jenland, and show the effect of the central bank's action identified in part A on the policy rate.
- C. Based on the change in the interest rate shown on your graph in part B, will each of the following increase, decrease, or remain the same in Jenland in the short run?
 - i. The price of previously issued bonds
 - ii. The price level. Explain.

1. The economy of Alpha is in short-run equilibrium with a cyclical unemployment rate of 3%, a frictional unemployment rate of 4%, and an actual unemployment rate of 8%.

- (a) Calculate Alpha's natural rate of unemployment. Show your work.
- (b) Draw a correctly labeled graph of the aggregate demand, short-run aggregate supply, and long-run aggregate supply curves for Alpha, and show each of the following.
 - (i) The current equilibrium output and price level, labeled Y_1 and PL_1 , respectively
 - (ii) The full-employment output, labeled Y_F
- (c) Assume that policymakers take no action to close the output gap.
 - (i) Explain how Alpha's economy will adjust to full employment in the long run.
 - (ii) On your graph in part (b), show how Alpha's economy will adjust to full employment in the long run, labeling the new equilibrium price level PL_2 .
- (d) Assume instead that Alpha's central bank is considering using monetary policy to close a recessionary output gap. The banking system in Alpha has ample reserves. Identify a specific monetary policy action the central bank of Alpha would take to close the output gap in the short run.
- (e) Draw a correctly labeled graph of the reserve market in Alpha, and show the effect of the action taken by the central bank identified in part (d) on the policy rate.
- (f) Based on the change in the policy rate shown in part (e), what would happen to each of the following in the short run in Alpha?
 - (i) The price of previously issued bonds
 - (ii) The price level. 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.

1. Assume that the economy of Moneyland is in equilibrium with an actual unemployment rate equal to the natural rate of unemployment.

- (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 that consumer spending in Moneyland decreases from \$110,000 to \$100,000 as a result of a decrease in disposable income in Moneyland from \$135,000 to \$110,000.
 - (i) Calculate the marginal propensity to consume in Moneyland. Show your work.
 - (ii) Show the short-run effect of the decrease in consumer spending in Moneyland on your graph in part (a), labeling the new equilibrium real output and price level Y_2 and PL_2 , respectively.
- (c) Following the decrease in consumer spending, explain how the economy would adjust in the long run in the absence of any policy actions.
- (d) The central bank of Moneyland is concerned about the short-run effects of the decrease in consumer spending on the broader economy and is considering taking action rather than waiting for the long-run adjustment process. Assuming the banking system in Moneyland has ample reserves, identify a specific monetary policy action the central bank of Moneyland would take to increase consumer spending.
- (e) Draw a correctly labeled graph of the reserve market in Moneyland, and show the effect of the monetary policy action identified in part (d) on the policy rate.
- (f) How would the change in the policy rate shown on your graph in part (e) affect each of the following in Moneyland in the short run?
 - (i) The quantity of national savings
 - (ii) Unemployment. 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.

2. The economy of Noralandia is in short-run equilibrium with an actual inflation rate that is currently higher than the expected inflation rate.
- (a) Draw a correctly labeled graph of the short-run and long-run Phillips curves. Label the current short-run equilibrium point as X.
- (b) The banking system in Noralandia has ample reserves. Identify a specific monetary policy action that the central bank of Noralandia would take to bring the inflation rate closer to the expected inflation rate.
- (c) Noralandia has an open economy and a flexible exchange rate. Based solely on the effect of the monetary policy action identified in part (b) on interest rates in Noralandia, will there be an increase, a decrease, or no change in the flow of international financial capital into Noralandia? Explain.
- (d) Based on your answer to part (c), what will happen to the international value of Noralandia's currency? Explain.

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3. Assume that the economy of country Zen is in long-run macroeconomic equilibrium.
- (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) On your graph in part (a), show the short-run effect of an increase in consumer confidence. Label the new equilibrium real output Y_2 and the new equilibrium price level PL_2 .
- (c) Assume that the banking system in Zen has ample reserves. Suppose that the central bank's goal is to maintain a stable price level at PL_1 . Based on the change in the price level shown in part (b), identify one specific monetary policy action the central bank would take to achieve its goal.
- (d) Based on the monetary policy action identified in part (c), will real output increase, decrease, or stay the same in the short 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.

STOP

END OF EXAM

1. Assume the economy of Sweden is in long-run equilibrium and has a surplus in its current account.
- (a) Is the Swedish capital and financial account in deficit, in surplus, or in balance? Explain.
- (b) Draw a correctly labeled graph of short-run aggregate supply, long-run aggregate supply, and aggregate demand curves for Sweden, and show the current equilibrium real output, labeled Y_1 , and the current equilibrium price level, labeled PL_1 .
- (c) Assume the United Kingdom decreases its imports from Sweden. On your graph in part (b), show the new equilibrium real output, labeled Y_2 , and the new equilibrium price level, labeled PL_2 , as a result of this change.
- (d) As a result of the decrease in the United Kingdom's imports from Sweden, would policy makers in Sweden be more concerned about cyclical unemployment or inflationary pressures in the short run? Explain.
- (e) If the Swedish central bank's goal is to return the economy to long-run equilibrium, what open-market operation should it use?
- (f) The currency of the United Kingdom is the pound, and the currency of Sweden is the krona. Draw a correctly labeled graph of the foreign exchange market for the krona, and show the impact of the decrease in the United Kingdom's imports from Sweden on the value of the krona in the foreign exchange market.
- (g) If the Swedish central bank's goal is to reverse the exchange rate change shown in part (f) by changing the interest rate, what open-market operation should it use?
- (h) Explain how the open-market operation identified in part (g) would reverse the change in the exchange rate.

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.

1. Assume Smithland is in short-run equilibrium at a level of output that exceeds the full-employment level of output.
- (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 Smithland's government cuts individual income taxes. On your graph in part (a), show the short-run effect of the tax cut on equilibrium real output, labeling the new short-run equilibrium real output Y_2 .
- (c) Based solely on the change in real output on your graph in part (b), what will happen to each of the following in the short run?
- (i) The natural rate of unemployment
 - (ii) Nominal interest rates. Explain.
- (d) Assume instead the central bank intervenes to correct an inflationary output gap. What open-market operation should the central bank take?
- (e) Draw a correctly labeled graph of the money market, and show the effect of the open-market operation identified in part (d) on the nominal interest rate.
- (f) Based solely on the interest rate change identified in part (e), what will happen to the international value of Smithland's currency in the foreign exchange market? Explain.
- (g) Based solely on the exchange rate change identified in part (f), will Smithland'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.

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 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.

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. 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 operating below full employment.
 - (a) Draw a correctly labeled graph of long-run aggregate supply, short-run aggregate supply, and aggregate demand, and show each of the following.
 - (i) Current equilibrium output and price level, labeled as Y_1 and PL_1
 - (ii) Full-employment output, labeled as Y_f
 - (b) Assume that the Federal Reserve targets a new federal funds rate to reach full employment. Should the Federal Reserve target a higher or lower federal funds rate?
 - (c) Given the Federal Reserve action you identified in part (b), draw a correctly labeled graph of the money market and show the effect on the nominal interest rate.
 - (d) The policy makers pursue a fiscal policy rather than the monetary policy in part (b). Assume that the marginal propensity to consume is 0.8 and the value of the recessionary gap is \$300 billion.
 - (i) If the government changes its spending without changing taxes to eliminate the recessionary gap, calculate the minimum required change in government spending.
 - (ii) If the government changes taxes without changing government spending to eliminate the recessionary gap, will the minimum required change in taxes be greater than, smaller than, or equal to the minimum required change in government spending in part (d)(i) ? Explain.
 - (e) Assume the government lowers income tax rates to eliminate the recessionary gap. Will each of the following increase, decrease, or stay the same?
 - (i) Aggregate demand. Explain.
 - (ii) Long-run aggregate supply. Explain.