

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.

- i. The current equilibrium real output and price level, labeled Y_1 and PL_1 , respectively
- ii. 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.

- i. Identify a specific open-market operation that the central bank of Micanapy would implement to close the inflationary gap in the short run.
- ii. 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?

- i. International financial capital flows into Micanapy. Explain.
- ii. The price of previously issued bonds in Micanapy
- iii. 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.

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 the United States economy is in short-run macroeconomic equilibrium at an output level greater than potential 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 as Y_1 and PL_1 , respectively
 - (ii) The full-employment output, labeled as Y_F
- (b) Assume government spending increases by \$100 billion. On your graph in part (a), show the short-run effect of the change in government spending on the equilibrium real output and price level. Label the new equilibrium output as Y_2 and the new equilibrium price level as PL_2 .
- (c) Assume the marginal propensity to consume is 0.8. As a result of the increase in government spending, what is the numerical value of the maximum change in each of the following in the short run?
- (i) Real output
 - (ii) Household savings
- (d) Draw a correctly labeled graph of the money market and show the effect of the change in real output identified in part (c)(i) on the equilibrium nominal interest rate.
- (e) Based on the change in the nominal interest rate shown in part (d), what will happen to the prices of previously issued bonds in the short run?
- (f) The United States and the European Union are trading partners with flexible exchange rates. The currency in the United States is the dollar, and the currency in the European Union is the euro. Assume the inflation rate in the United States increases relative to the inflation rate in the European Union. As a result of the change in the United States inflation rate, what will happen to each of the following in the foreign exchange market?
- (i) The demand for dollars. Explain.
 - (ii) The international value of the dollar
- (g) Suppose the Federal Reserve attempts to keep the value of the dollar constant in the foreign exchange market. Based on the change in the value of the dollar in part (f)(ii), should the Federal Reserve buy or sell each of the following?
- (i) The euro
 - (ii) The dollar

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.

2. Assume that an economy is in long-run equilibrium. Assume that consumers wish to hold less money because they use credit cards more frequently to purchase goods and services than cash.
- (a) Draw a correctly labeled graph of the money market and show the effect of the reduced holdings of money on the equilibrium nominal interest rate in the short run.
- (b) Based on the change in the interest rate in part (a), what will happen to each of the following in the short run?
- (i) Prices of previously issued bonds
 - (ii) The price level and real income. Explain.
- (c) With a constant money supply, based on your answer to part b(ii), will the velocity of money increase, decrease, or remain the same, or is the change indeterminate?
- (d) If the central bank wishes to reverse the change in the interest rate identified in part (a), what open market operation would it use?

MACROECONOMICS**Section II****Total Time—60 minutes****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 that the United States economy is currently in a short-run equilibrium with the actual unemployment rate above the natural rate of unemployment.
 - (a) Draw a single correctly labeled graph with both the long-run Phillips curve and short-run Phillips curve. Label the current short-run equilibrium point P.
 - (b) Assuming no policy actions are taken, will the short-run Phillips curve shift to the right (upward), shift to the left (downward), or remain the same in the long run? Explain.
 - (c) If the Federal Reserve Bank wants to lower unemployment, what expansionary open-market operation should it use?
 - (d) How will the open-market operation you identified in part (c) affect each of the following?
 - (i) Federal funds rate. Explain.
 - (ii) Real interest rate in the short run.
 - (e) Given your answer in part (d)(ii), what is the effect on real gross domestic product (GDP) in the short run? Explain.
 - (f) Japan and the United States are major trading partners. Indicate how the change in real GDP you identified in part (e) will affect the demand for the Japanese yen in the foreign exchange market.
 - (g) Draw a correctly labeled graph of the foreign exchange market for the Japanese yen, showing the effect of the change in demand identified in part (f) on the value of the Japanese yen relative to the United States dollar.