Chapter 9
The IS-LM/AD-AS Model: A General Framework for Macroeconomic Analysis

- Multiple Choice Questions

1. The \( FE \) line shows the level of output at which the ____ market is in equilibrium.
   (a) Goods
   (b) Asset
   (c) Labor
   (d) Money
   Answer: C
   Level of difficulty: 1
   Section: 9.1

2. The \( FE \) line is vertical because the level of output at full employment doesn’t depend on the
   (a) real wage rate.
   (b) level of employment.
   (c) marginal product of labor.
   (d) real interest rate.
   Answer: D
   Level of difficulty: 1
   Section: 9.1

3. Which of the following would shift the \( FE \) line to the right?
   (a) An adverse supply shock
   (b) An increase in labor supply
   (c) A decrease in the capital stock
   (d) An increase in the future marginal productivity of capital
   Answer: B
   Level of difficulty: 1
   Section: 9.1

4. Which of the following would shift the \( FE \) line to the left?
   (a) A beneficial supply shock
   (b) An increase in labor supply
   (c) A decrease in the capital stock
   (d) A decrease in the future marginal productivity of capital
   Answer: C
   Level of difficulty: 1
   Section: 9.1
5. The IS curve shows the combinations of output and the real interest rate for which
   (a) the goods market is in equilibrium.
   (b) the labor market is in equilibrium.
   (c) the financial asset market is in equilibrium.
   (d) an increase in output will cause the market-clearing interest rate to be bid up.
   Answer: A
   Level of difficulty: 1
   Section: 9.1

6. An increase in the money supply would cause the FE line to
   (a) shift to the right.
   (b) shift to the left.
   (c) remain unchanged.
   (d) remain unchanged if Ricardian equivalence holds; otherwise, shift to the right.
   Answer: C
   Level of difficulty: 1
   Section: 9.1

7. An adverse supply shock would cause the FE line to
   (a) shift to the right.
   (b) shift to the left.
   (c) remain unchanged.
   (d) remain unchanged if the shock is temporary; shift to the right if the shock is permanent.
   Answer: B
   Level of difficulty: 1
   Section: 9.1

8. Any change that reduces desired saving relative to desired investment (for a given level of output) causes the real interest rate to _____ and shifts the IS curve _____.
   (a) increase; down and to the left
   (b) increase; up and to the right
   (c) decrease; down and to the left
   (d) decrease; up and to the right
   Answer: B
   Level of difficulty: 2
   Section: 9.2

9. A decline in expected future output would cause the IS curve to
   (a) shift up and to the right.
   (b) shift down and to the left.
   (c) remain unchanged.
   (d) shift up and to the right only if people face borrowing constraints.
   Answer: B
   Level of difficulty: 1
   Section: 9.2
10. A decrease in the effective tax rate on capital would cause the IS curve to
   (a) shift up and to the right.
   (b) shift down and to the left.
   (c) remain unchanged.
   (d) remain unchanged if taxes are fully deductible from income; otherwise, shift up and to the right.
   Answer: A
   Level of difficulty: 1
   Section: 9.2

11. An increase in labor supply would cause the IS curve to
   (a) shift up and to the right.
   (b) shift down and to the left.
   (c) remain unchanged.
   (d) shift up and to the right only if people face borrowing constraints.
   Answer: C
   Level of difficulty: 1
   Section: 9.2

12. A temporary decline in productivity would cause the IS curve to
   (a) shift up and to the right.
   (b) shift down and to the left.
   (c) remain unchanged.
   (d) shift up and to the right only if people face borrowing constraints.
   Answer: C
   Level of difficulty: 1
   Section: 9.2

13. A decrease in wealth would cause the IS curve to
   (a) shift up and to the right.
   (b) shift down and to the left.
   (c) remain unchanged.
   (d) shift up and to the right only if people face borrowing constraints.
   Answer: B
   Level of difficulty: 1
   Section: 9.2

14. An increase in the expected future marginal product of capital would cause the IS curve to
   (a) shift up and to the right.
   (b) shift down and to the left.
   (c) remain unchanged.
   (d) remain unchanged if firms face borrowing constraints; otherwise, shift down and to the left.
   Answer: A
   Level of difficulty: 1
   Section: 9.2
15. The *IS* curve would unambiguously shift up and to the right if there were
   (a) an increase in both government purchases and corporate taxes.
   (b) an increase in both government purchases and the expected future marginal product of capital.
   (c) an increase in the expected future marginal product of capital and a decrease in expected future output.
   (d) a decrease in both corporate taxes and the expected future marginal product of capital.
   Answer: B
   Level of difficulty: 2
   Section: 9.2

16. A rise in the price of a bond causes the yield of the bond to
   (a) rise.
   (b) fall.
   (c) remain unchanged.
   (d) rise if it’s a short-term bond, fall if it’s a long-term bond.
   Answer: B
   Level of difficulty: 1
   Section: 9.3

17. A decline in the price of a bond causes the yield of the bond to
   (a) rise.
   (b) fall.
   (c) remain unchanged.
   (d) rise if it’s a short-term bond, fall if it’s a long-term bond.
   Answer: A
   Level of difficulty: 1
   Section: 9.3

18. A change that increases the real money supply relative to real money demand causes
   (a) the *LM* curve to shift down and to the right.
   (b) the *LM* curve to shift up and to the left.
   (c) the *IS* curve to shift down and to the left.
   (d) the *IS* curve to shift up and to the right.
   Answer: A
   Level of difficulty: 1
   Section: 9.3

19. A change that increases real money demand relative to the real money supply causes
   (a) the *LM* curve to shift down and to the right.
   (b) the *LM* curve to shift up and to the left.
   (c) the *IS* curve to shift down and to the left.
   (d) the *IS* curve to shift up and to the right.
   Answer: B
   Level of difficulty: 1
   Section: 9.3
20. You have just read that the Federal Reserve has increased the money supply to avoid a recession. For a given price level, you would expect the $LM$ curve to
(a) shift up and to the left as the real money supply falls.
(b) shift up and to the left as the real money supply rises.
(c) shift down and to the right as the real money supply falls.
(d) shift down and to the right as the real money supply rises.

Answer: D
Level of difficulty: 2
Section: 9.3

21. The Fed has announced that it plans to lower the rate of monetary growth from 10% per year to 2% per year. You would expect this announcement to directly
(a) increase money demand, shifting the $LM$ curve up and to the left.
(b) increase money demand, shifting the $LM$ curve down and to the right.
(c) decrease money demand, shifting the $LM$ curve up and to the left.
(d) decrease money demand, shifting the $LM$ curve down and to the right.

Answer: A
Level of difficulty: 2
Section: 9.3

22. An increase in wealth that doesn’t affect labor supply would cause the $IS$ curve to _____ and the $FE$ line to _____.
(a) shift down and to the left; be unchanged
(b) shift down and to the left; shift left
(c) shift up and to the right; be unchanged
(d) shift up and to the right; shift left

Answer: C
Level of difficulty: 1
Section: 9.4

23. An increase in the effective tax rate on capital would cause the $IS$ curve to _____ and the $LM$ curve to _____.
(a) shift down and to the left; be unchanged
(b) shift down and to the left; shift up and to the left
(c) shift up and to the right; be unchanged
(d) shift up and to the right; shift up and to the left

Answer: A
Level of difficulty: 1
Section: 9.4

24. When all markets in the economy are simultaneously in equilibrium, we say
(a) markets are complete.
(b) markets are perfect.
(c) there is disequilibrium.
(d) there is general equilibrium.

Answer: D
Level of difficulty: 1
Section: 9.4
25. To reach general equilibrium, the price level adjusts to shift the _____ until it intersects with the _____.
   (a) $IS$ curve; $FE$ line and $LM$ curve
   (b) $FE$ line; $LM$ and $IS$ curves
   (c) $LM$ curve; $FE$ line and $IS$ curve
   (d) $ND$ curve; $FE$ line and $NS$ curve
   Answer: C
   Level of difficulty: 1
   Section: 9.4

26. What adjusts to restore general equilibrium after a shock to the economy?
   (a) The $LM$ curve
   (b) The $IS$ curve
   (c) The $FE$ line
   (d) The labor supply curve
   Answer: A
   Level of difficulty: 1
   Section: 9.4

27. The IS-LM model predicts that a temporary beneficial supply shock
   (a) increases output, national saving, and investment, but not the real interest rate.
   (b) increases output, national saving, and the real interest rate, but not investment.
   (c) increases the real interest rate, investment, and output, but not national saving.
   (d) increases output, national saving, investment, and the real interest rate.
   Answer: A
   Level of difficulty: 2
   Section: 9.4

28. A temporary supply shock, such as a bumper crop, would
   (a) shift the $FE$ line to the right and leave the $IS$ curve unchanged.
   (b) shift the $FE$ line to the left and shift the $IS$ curve up and to the right.
   (c) shift the $FE$ line to the left and leave the $IS$ curve unchanged.
   (d) have no effect on the $FE$ line.
   Answer: A
   Level of difficulty: 2
   Section: 9.4

29. A temporary supply shock, such as an increase in oil prices, would
   (a) shift the $IS$ curve down and to the left and leave the $FE$ line unchanged.
   (b) shift the $IS$ curve down and to the left and shift the $FE$ line to the left.
   (c) shift the $IS$ curve up and to the right, but leave the $FE$ line unchanged.
   (d) have no effect on the $IS$ curve.
   Answer: D
   Level of difficulty: 2
   Section: 9.4
30. You have just read that Australia has suffered a drought, destroying its wheat crop for this year. The effect of this adverse supply shock on Australia would probably be
   (a) an increase in prices and an increase in real interest rates.
   (b) an increase in prices, an increase in nominal interest rates, but a decrease in real interest rates.
   (c) a decrease in prices and a decrease in real interest rates.
   (d) a decrease in prices, a decrease in nominal interest rates, but an increase in real interest rates.
   Answer: A
   Level of difficulty: 2
   Section: 9.4

31. A temporary adverse supply shock directly causes
   (a) a shift down and to the left of the IS curve.
   (b) a shift to the left of the FE line.
   (c) a shift down and to the right of the LM curve.
   (d) a shift up and to the right of the IS curve.
   Answer: B
   Level of difficulty: 1
   Section: 9.4

32. After a temporary beneficial supply shock hits the economy, general equilibrium is restored by
   (a) a shift down and to the left of the IS curve.
   (b) a shift to the left of the FE line.
   (c) a shift up and to the left of the LM curve.
   (d) a shift down and to the right of the LM curve.
   Answer: D
   Level of difficulty: 1
   Section: 9.5

33. An adverse supply shock that is permanent shifts which curve in addition to the curves shifted by one that is temporary?
   (a) The LM curve
   (b) The IS curve
   (c) The FE line
   (d) The labor demand curve
   Answer: B
   Level of difficulty: 1
   Section: 9.5

34. Which market adjusts the quickest in response to shocks to the economy?
   (a) The asset market
   (b) The labor market
   (c) The goods market
   (d) The asset, labor, and goods markets adjust at about the same speed to eliminate a disequilibrium in the macroeconomy.
   Answer: A
   Level of difficulty: 1
   Section: 9.5
35. A decrease in money supply causes the real interest rate to _____ and output to _____ in the short run, before prices adjust to restore equilibrium.
   (a) rise; rise
   (b) rise; fall
   (c) fall; rise
   (d) fall; fall
   Answer: B
   Level of difficulty: 2
   Section: 9.5

36. A temporary decrease in government purchases causes the real interest rate to _____ and output to _____ in the short run, before prices adjust to restore equilibrium.
   (a) rise; rise
   (b) rise; fall
   (c) fall; rise
   (d) fall; fall
   Answer: D
   Level of difficulty: 2
   Section: 9.5

37. An increase in expected inflation causes the real interest rate to _____ and output to _____ in the short run, before prices adjust to restore equilibrium.
   (a) rise; rise
   (b) rise; fall
   (c) fall; rise
   (d) fall; fall
   Answer: C
   Level of difficulty: 2
   Section: 9.5

38. Suppose the intersection of the $IS$ and $LM$ curves is to the left of the $FE$ line. A decrease in the price level would most likely eliminate a disequilibrium among the asset, labor, and goods markets by
   (a) shifting the $LM$ curve down and to the right.
   (b) shifting the $IS$ curve up and to the right.
   (c) shifting the $IS$ curve down and to the left.
   (d) shifting the $FE$ curve to the left.
   Answer: A
   Level of difficulty: 1
   Section: 9.5

39. Suppose the intersection of the $IS$ and $LM$ curves is to the left of the $FE$ line. What would most likely eliminate a disequilibrium among the asset, labor, and goods markets?
   (a) A rise in the price level, shifting the $LM$ curve up and to the left
   (b) A fall in the price level, shifting the $LM$ curve down and to the right
   (c) A rise in the price level, shifting the $IS$ curve up and to the right
   (d) A fall in the price level, shifting the $IS$ curve down and to the left
   Answer: B
   Level of difficulty: 2
   Section: 9.5
40. An increase in money supply causes the real interest rate to _____ and the price level to _____ in general equilibrium.
   (a) rise; rise
   (b) remain unchanged; fall
   (c) remain unchanged; rise
   (d) fall; fall
   Answer: C
   Level of difficulty: 2
   Section: 9.5

41. A temporary decrease in government purchases causes the real interest rate to _____ and the price level to _____ in general equilibrium.
   (a) rise; rise
   (b) rise; fall
   (c) fall; rise
   (d) fall; fall
   Answer: D
   Level of difficulty: 2
   Section: 9.5

42. An increase in taxes (when Ricardian equivalence doesn’t hold) causes the real interest rate to _____ and the price level to _____ in general equilibrium.
   (a) rise; rise
   (b) rise; fall
   (c) fall; rise
   (d) fall; fall
   Answer: D
   Level of difficulty: 2
   Section: 9.5

43. Classical economists think general equilibrium is attained relatively quickly because
   (a) the real interest rate adjusts quickly.
   (b) the level of output adjusts quickly.
   (c) the real wage rate adjusts quickly.
   (d) the price level adjusts quickly.
   Answer: D
   Level of difficulty: 1
   Section: 9.5

44. Keynesian economists think general equilibrium is not attained quickly because
   (a) the real interest rate adjusts slowly.
   (b) the level of output adjusts slowly.
   (c) the real wage rate adjusts slowly.
   (d) the price level adjusts slowly.
   Answer: D
   Level of difficulty: 1
   Section: 9.5
45. Under an assumption of monetary neutrality, a change in the nominal money supply has  
(a) no effect on the price level.  
(b) a less than proportionate effect on the price level.  
(c) a proportionate effect on the price level.  
(d) a more than proportionate effect on the price level.  
Answer: C  
Level of difficulty: 1  
Section: 9.5

46. Keynesian economists believe that in the short run,  
(a) money neutrality exists and prices adjust rapidly.  
(b) money neutrality does not exist and prices adjust rapidly.  
(c) money neutrality exists and prices do not adjust rapidly.  
(d) money neutrality does not exist and prices do not adjust rapidly.  
Answer: D  
Level of difficulty: 1  
Section: 9.5

47. Classical economists believe that in the short run,  
(a) money neutrality exists and prices adjust rapidly.  
(b) money neutrality does not exist and prices adjust rapidly.  
(c) money neutrality exists and prices do not adjust rapidly.  
(d) money neutrality does not exist and prices do not adjust rapidly.  
Answer: A  
Level of difficulty: 1  
Section: 9.5

48. The aggregate demand curve shows  
(a) the demand for goods depending on the relative price of goods compared to financial assets.  
(b) the amount of output that can be obtained given the current production function in the economy.  
(c) the relation between the aggregate quantity of goods demanded and the price level.  
(d) the relation between the real interest rate and output when the goods market clears.  
Answer: C  
Level of difficulty: 1  
Section: 9.6

49. The aggregate demand curve shows the combinations of output and the price level that put the 
economy on  
(a) the FE line and the IS curve.  
(b) the FE line, the IS curve, and the LM curve.  
(c) the IS curve.  
(d) the IS curve and the LM curve.  
Answer: D  
Level of difficulty: 1  
Section: 9.6
50. The aggregate demand curve
   (a) is vertical.
   (b) slopes upward.
   (c) is horizontal.
   (d) slopes downward.
   Answer: D
   Level of difficulty: 1
   Section: 9.6

51. Which of the following changes shifts the AD curve down and to the left?
   (a) A temporary increase in government purchases
   (b) A rise in the nominal money supply
   (c) A decrease in corporate taxes
   (d) A decrease in consumer confidence
   Answer: D
   Level of difficulty: 2
   Section: 9.6

52. Which of the following changes shifts the AD curve up and to the right?
   (a) A rise in the nominal money supply
   (b) An increase in income taxes
   (c) An increase in the risk on nonmonetary assets
   (d) A decrease in the future marginal productivity of capital
   Answer: A
   Level of difficulty: 2
   Section: 9.6

53. The aggregate supply curve shows the relation between
   (a) the real interest rate and the aggregate amount of output that firms supply.
   (b) the price level and the aggregate amount of output that firms supply.
   (c) the supply of goods by firms and the price of goods relative to the price of nonmonetary assets.
   (d) the inflation rate and the unemployment rate.
   Answer: B
   Level of difficulty: 1
   Section: 9.6

54. The short-run aggregate supply curve (in the absence of misperceptions)
   (a) is vertical.
   (b) slopes upward.
   (c) is horizontal.
   (d) slopes downward.
   Answer: C
   Level of difficulty: 1
   Section: 9.6
55. The long-run aggregate supply curve
   (a) is vertical.
   (b) slopes upward.
   (c) is horizontal.
   (d) slopes downward.
   Answer: A
   Level of difficulty: 1
   Section: 9.6

56. Which of the following changes shifts the SRAS curve up?
   (a) An increase in the labor force
   (b) An increase in firms’ costs
   (c) A decrease in government purchases
   (d) An increase in the money supply
   Answer: B
   Level of difficulty: 1
   Section: 9.6

57. Which of the following changes shifts the long-run aggregate supply curve to the right?
   (a) A demographic change that increases the labor supply
   (b) A decrease in the demand for labor
   (c) An increase in consumer confidence
   (d) A decrease in taxes (assuming Ricardian equivalence doesn’t hold)
   Answer: A
   Level of difficulty: 2
   Section: 9.6

58. Which of the following changes shifts the SRAS curve down?
   (a) An increase in the labor force
   (b) An increase in the money supply
   (c) A decrease in government purchases
   (d) A decrease in firms’ costs
   Answer: D
   Level of difficulty: 1
   Section: 9.6

59. When the money supply rises by 10%, in the short run, output _____ and the price level _____.
   (a) rises; is unchanged
   (b) declines; falls
   (c) is unchanged; falls
   (d) declines; is unchanged
   Answer: A
   Level of difficulty: 2
   Section: 9.6
60. When the money supply declines by 10%, in the long run, output _____ and the price level _____.
   (a) is unchanged; is unchanged
   (b) declines; falls
   (c) is unchanged; falls
   (d) declines; is unchanged
   Answer: C
   Level of difficulty: 2
   Section: 9.6

Essay Questions

1. Draw a saving-investment diagram to show how each of the following changes shifts the IS curve.
   (a) Future income rises.
   (b) The future marginal productivity of capital increases.
   (c) Government purchases decrease temporarily.
   (d) The effective corporate tax rate increases.

   **Answers:**
   (a) IS shifts up and to the right.
   (b) IS shifts up and to the right.
   (c) IS shifts down and to the left.
   (d) IS shifts down and to the left.
   Level of difficulty: 2
   Section: 9.2

2. For each of the following changes, which equilibrium curve (IS, LM, or FE) is shifted? Draw the change in the underlying demand or supply curves (for example, money demand and supply for the LM curve) and show how the equilibrium curve changes.
   (a) Expected inflation increases.
   (b) The future marginal productivity of capital increases.
   (c) Labor supply decreases.
   (d) Future income declines.
   (e) There’s a temporary beneficial supply shock.
   (f) The nominal interest rate on money rises.

   **Answers:**
   (a) LM shifts down and to the right.
   (b) IS shifts up and to the right.
   (c) FE shifts left.
   (d) IS shifts down and to the left.
   (e) FE shifts right.
   (f) LM shifts up and to the left.
   Level of difficulty: 2
   Section: 9.4
3. Oil prices have risen temporarily, due to political uncertainty in the Middle East. An advisor to the Fed suggests, “Higher oil prices reduce aggregate demand. To offset this we must increase the money supply. Then the price level won’t need to adjust to restore equilibrium, and we’ll prevent a recession.” Analyze this statement using the IS-LM model.

**Answers:** This is a change in the **FE** line, not aggregate demand, so the policy is incorrect. Instead, to keep the price level fixed, money supply should decrease, so output falls and the real interest rate rises.

Level of difficulty: 3
Section: 9.4

4. For each of the following changes, what happens to the real interest rate and output in the very short run, before the price level has adjusted to restore general equilibrium?

(a) Wealth rises.
(b) Money supply rises.
(c) The future marginal productivity of capital increases.
(d) Expected inflation declines.
(e) Future income declines.

**Answers:**
(a) The **IS** curve shifts up and to the right, so \(r\) rises and \(Y\) rises.
(b) The **LM** curve shifts down and to the right, so \(r\) falls and \(Y\) rises.
(c) The **IS** curve shifts up and to the right, so \(r\) rises and \(Y\) rises.
(d) The **LM** curve shifts up and to the left, so \(r\) rises and \(Y\) falls.
(e) The **IS** curve shifts down and to the left, so \(r\) falls and \(Y\) falls.

Level of difficulty: 2
Section: 9.5

5. Desired consumption is \(C' = 2000 + 0.9Y - 100,000r - G\), and desired investment is \(I' = 1000 - 45,000r\). Real money demand is \(M'/P = Y - 6000i\). Other variables are \(\pi_e = 0.03\), \(G = 500\), \(\bar{Y} = 1000\), and \(M = 2100\).

(a) Find the equilibrium values of the real interest rate, consumption, investment, and the price level.
(b) Suppose government purchases decline to 400. What happens to the variables listed in part (a)?
(c) Suppose government purchases rise to 600. What happens to the variables listed in part (a)?
(d) What feature in this example leads to the result that you don’t need to know the amount of taxes collected by the government to find the equilibrium?

**Answers:**
(a) \(r = 0.02\), \(C = 400\), \(I = 100\), \(P = 3\).
(b) \(C = 500\), other variables are unchanged.
(c) \(C = 300\), other variables are unchanged.
(d) Desired consumption depends on the level of government purchases, not taxes. This is an example of a classical view in which people realize that government purchases must be paid for by taxes today or in the future, so it’s the level of government purchases that affects consumption decisions, not the level of taxes.

Level of difficulty: 2
Section: 9.5
6. Analyze the following statement, and show what would happen in the long run if such advice were followed by the Fed: “The increase in the stock market has increased people’s wealth. As a result, their consumption has increased, increasing aggregate demand and output. So the Fed needs to increase the money supply, since with higher income, people’s demand for real money balances will be higher.”

**Answer:** Assuming resources are fully utilized, there will be no increase in output. Higher wealth will reduce saving, shifting the IS curve up and to the right. Increasing the money supply shifts the LM curve down and to the right. But general equilibrium will require the LM curve to shift up and to the left. So the price level must rise, and it rises even more because of the monetary policy suggested by the statement. The correct monetary policy for preventing inflation is to reduce, not increase, the money supply.

Level of difficulty: 3
Section: 9.5

7. Use the IS-LM model to determine the effects of each of the following on the general equilibrium values of the real wage, employment, output, the real interest rate, consumption, investment, and the price level.

(a) Tougher immigration laws reduce the working-age population.
(b) There’s increased volatility in the prices of stocks and bonds.
(c) The government tries to achieve tax equity by an increase in the corporate tax rate.
(d) Increased computerization reduces stock market brokerage costs.

**Answers:**

(a) The decline in labor supply increases the real wage and reduces employment and output, shifting the FE line to the left. The LM curve shifts up and to the left as the price level rises to restore equilibrium. As a result, the real interest rate rises, reducing consumption and investment.
(b) Real money demand rises, which shifts the LM curve up and to the left. To restore equilibrium, the price level must decline, shifting the LM curve down and to the right. There’s no effect on any other variable.
(c) The higher tax rate reduces investment, shifting the IS curve down and to the left. To restore equilibrium, the LM curve shifts down and to the right as the price level falls. As a result, the real interest rate declines, so consumption increases. There’s no change in the real wage, employment, or output.
(d) Increased liquidity on nonmoney assets reduces money demand, shifting the LM curve down and to the right. The price level rises, to restore equilibrium by shifting the LM curve back up and to the left. There’s no effect on the other variables.

Level of difficulty: 2
Section: 9.5

8. Suppose the Federal Reserve’s short-run response to any change in the economy is to change the money supply to maintain the existing real interest rate. What would happen to money supply if there were a reduction in government purchases? Given the Fed’s policy, what would happen in the very short run (before general equilibrium is restored) to output and the real interest rate? What must happen to the LM curve and the price level to restore general equilibrium?

**Answers:** The decrease in G shifts the IS curve down and to the left. The Fed’s policy decreases the money supply and shifts the LM curve up and to the left, so the real interest rate doesn’t change. But output declines in the very short run. To restore general equilibrium, the price level must decline to shift the LM curve down and to the right. If the Fed wanted to keep the price level from changing so much, its correct policy would have been to increase the money supply, not decrease it.

Level of difficulty: 3
Section: 9.5
9. Suppose you were a forecaster of the real wage rate, employment, output, the real interest rate, consumption, investment, and the price level. A shock hits the economy, which you think is a temporary adverse supply shock.
   (a) What are your forecasts for each of the variables listed above (rise, fall, and no change)?
   (b) What if the shock was really due to people’s reduced expectations about their future income. Which variables did you forecast correctly, and which did you forecast incorrectly?

**Answers:**
(a) The real wage rate, employment, output, consumption, and investment decline, while the real interest rate and the price level rise.
(b) The IS curve shifts down and to the left, instead of the FE line shifting left, so you are wrong about every variable except consumption. The real wage, employment, and output won’t change, the real interest rate and the price level will decline, and investment will rise.

Level of difficulty: 3
Section: 9.5

10. Describe the effects, in both the short run and the long run, of an increase in the money supply. Explain what happens to real output and the price level.

**Answer:** In the short run, an increase in the money supply increases output and has no effect on the price level. In the long run, an increase in the money supply has no effect on output and increases the price level.

Level of difficulty: 1
Section: 9.6