Chapter 11
Keynesianism: The Macroeconomics of Wage and Price Rigidity

Multiple Choice Questions

1. Keynesians are skeptical of the classical theory that recessions are periods of increased mismatch between workers and jobs because
   (a) help-wanted advertising falls during recessions.
   (b) help-wanted advertising rises during recessions.
   (c) workers spend a lot of time searching for work in recessions.
   (d) people are indifferent between being employed or not.
   Answer: A
   Level of difficulty: 1
   Section: 11.1

2. The gift exchange motive suggests that
   (a) workers value benefits like health insurance more than job security.
   (b) workers prefer a nice work environment, even if they must accept lower wages.
   (c) workers who feel well treated will work harder and more efficiently.
   (d) workers will shirk if they are paid a low wage.
   Answer: C
   Level of difficulty: 1
   Section: 11.1

3. A model in which workers won’t be concerned about the possibility of being fired if they don’t work hard, because their wage is so low, is called
   (a) a cost-benefit model.
   (b) a job-stress model.
   (c) a gift-exchange model.
   (d) a shirking model.
   Answer: D
   Level of difficulty: 1
   Section: 11.1
4. According to the efficiency wage model, firms will pay the real wage that
(a) maximizes workers’ marginal productivity.
(b) maximizes the marginal productivity of capital and the marginal productivity of labor together.
(c) maximizes effort per dollar of real wage.
(d) minimizes hiring and training costs to the firm.
Answer: C
Level of difficulty: 1
Section: 11.1

5. Assuming no change in the effort curve of employees, the efficiency wage model implies that
(a) the real wage is rigid and equals the efficiency wage.
(b) the real wage exceeds the marginal productivity of labor.
(c) an increase in the marginal productivity of capital will increase the real wage.
(d) the real wage is procyclical.
Answer: A
Level of difficulty: 2
Section: 11.1

6. A firm faces the following relationship between the real wage it pays and the effort exerted by its workers.

<table>
<thead>
<tr>
<th>Real Wage</th>
<th>Effort (E)</th>
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The marginal product of labor for this firm is given by \( MPN = E \frac{100 - N}{9} \). The firm will choose to pay a wage such that the effort level is
(a) 20.
(b) 24.
(c) 27.
(d) 29.
Answer: C
Level of difficulty: 2
Section: 11.1
7. A firm faces the following relationship between the real wage it pays and the effort exerted by its workers.

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The marginal product of labor for this firm is given by $MPN = E (100 - N)/9$. How many workers will the firm employ?
(a) 96
(b) 92
(c) 88
(d) 80
Answer: A
Level of difficulty: 3
Section: 11.1

8. In the efficiency wage model with the efficiency wage above the market-clearing wage, the level of employment depends on
(a) the intersection of labor supply and labor demand.
(b) the marginal productivity of capital and the marginal productivity of labor.
(c) labor demand alone.
(d) labor supply alone.
Answer: C
Level of difficulty: 1
Section: 11.1

9. In the efficiency wage model with the efficiency wage above the market-clearing wage, when employment is at its full-employment level
(a) labor supply equals labor demand.
(b) there is an excess supply of labor.
(c) there is an excess demand for labor.
(d) there could be either an excess demand for, or an excess supply of, labor.
Answer: B
Level of difficulty: 2
Section: 11.1

10. In the efficiency wage model, if the real wage is higher than the market-clearing wage so that there is an excess supply of labor,
(a) firms will hire new workers at lower wages.
(b) firms will replace high-paid workers with low-paid, formerly unemployed workers.
(c) employers will not hire workers who are willing to work for a lower wage.
(d) firms will demand a higher level of effort from existing employees.
Answer: C
Level of difficulty: 1
Section: 11.1
11. According to the efficiency wage model, during a recession, firms will not reduce real wages because
   (a) unions would go on strike, reducing profitability.
   (b) this would reduce worker effort and productivity.
   (c) the equilibrium real wage has increased.
   (d) legally, they can’t.
   Answer: B
   Level of difficulty: 1
   Section: 11.1

12. The efficiency wage model can be modified to allow real wages to vary over the business cycle by assuming that
   (a) workers’ effort may depend on the unemployment rate and the real wage.
   (b) during a recession, labor supply will decrease, reducing the efficiency wage.
   (c) during a recession, productivity will fall, causing a reduction in the efficiency wage.
   (d) during a boom, labor demand will increase, causing the efficiency wage to rise.
   Answer: A
   Level of difficulty: 1
   Section: 11.1

13. In the Keynesian model, the real wage is mildly procyclical because
   (a) demand for labor fluctuates with the demand for final goods.
   (b) firms take advantage of recessions to pay slightly lower wages, since there’s excess labor supply.
   (c) workers’ effort may depend on the unemployment rate and the real wage.
   (d) the supply of labor fluctuates with the business cycle.
   Answer: C
   Level of difficulty: 2
   Section: 11.1

14. In the efficiency wage model, an increase in productivity would
   (a) increase output but decrease the real wage.
   (b) decrease the real wage but have no effect on output.
   (c) increase output but have no effect on the real wage.
   (d) have no effect on either output or the real wage.
   Answer: C
   Level of difficulty: 2
   Section: 11.1

15. In the Keynesian model with efficiency wages,
   (a) the full-employment line is determined where the quantity of labor demanded equals the quantity of labor supplied.
   (b) the full-employment level is determined at the intersection of the labor demand curve and the efficiency wage line.
   (c) an increase in labor supply increases employment.
   (d) a decrease in labor supply shifts the FE line to the left.
   Answer: B
   Level of difficulty: 1
   Section: 11.1
16. A model in which individual producers act as price setters, because there are only a few sellers and the product they sell is not standardized, is called
   (a) imperfect competition.
   (b) perfect competition.
   (c) monopoly.
   (d) monopsony.
   Answer: A
   Level of difficulty: 1
   Section: 11.2

17. When the demand for an imperfect competitor’s product is greater than it planned, the firm will
   (a) increase the price of the product until supply equals demand.
   (b) meet the demand at its set price.
   (c) reduce the price until supply equals demand.
   (d) allow a shortage of the product to develop, without changing the product’s price.
   Answer: B
   Level of difficulty: 1
   Section: 11.2

18. The theory that firms will be slow to change their products’ prices in response to changes in demand because there are costs to changing prices is called
   (a) transactions cost theory.
   (b) cost-benefit theory.
   (c) menu cost theory.
   (d) gift exchange theory.
   Answer: C
   Level of difficulty: 1
   Section: 11.2

19. According to the menu cost theory, firms will be slow in changing their prices because
   (a) if prices changed frequently, individuals would reduce their demand for that good because of uncertainty.
   (b) frequent price changes would be a sign of monopolistic behavior.
   (c) the cost of changing the price might exceed the additional revenue the price change would generate.
   (d) demand for their product would fall because consumers would purchase goods from firms that had not raised their prices.
   Answer: C
   Level of difficulty: 1
   Section: 11.2
20. In setting the price of its product, a monopolistic competitor sets the price equal to its marginal cost plus an amount called the 
   (a) markup. 
   (b) profit. 
   (c) rent. 
   (d) menu cost. 
   Answer: A 
   Level of difficulty: 1 
   Section: 11.2

21. In the Keynesian model in the short run, the amount of employment is determined by the effective labor demand curve and the level of 
   (a) prices. 
   (b) output. 
   (c) the real interest rate. 
   (d) the supply of labor. 
   Answer: B 
   Level of difficulty: 1 
   Section: 11.3

22. In the Keynesian model, short-run equilibrium occurs where 
   (a) the IS and LM curves intersect. 
   (b) the IS curve, LM curve, and FE lines intersect. 
   (c) the IS curve intersects the FE line. 
   (d) the LM curve intersects the FE line. 
   Answer: A 
   Level of difficulty: 1 
   Section: 11.3

23. In the Keynesian model in the short run, a decrease in the money supply will cause 
   (a) a decrease in output and an increase in the real interest rate. 
   (b) an increase in the real interest rate but no change in output. 
   (c) a decrease in the real interest rate and a decrease in output. 
   (d) no change in either the real interest rate or output. 
   Answer: A 
   Level of difficulty: 1 
   Section: 11.3

24. The distinguishing feature that determines whether an analysis is classical or Keynesian is 
   (a) the speed of price adjustment. 
   (b) the slope of the aggregate demand curve. 
   (c) the degree of monopoly power in the economy. 
   (d) the assumption about the transmission mechanism of monetary policy. 
   Answer: A 
   Level of difficulty: 1 
   Section: 11.3
25. In the Keynesian model, money is
   (a) neutral in both the short run and the long run.
   (b) neutral in neither the short run nor the long run.
   (c) neutral in the short run, but not in the long run.
   (d) neutral in the long run, but not in the short run.
   Answer: D
   Level of difficulty: 1
   Section: 11.3

26. In the Keynesian model in the long run, a decrease in the money supply will cause
   (a) a decrease in output and an increase in the real interest rate.
   (b) an increase in the real interest rate but no change in output.
   (c) a decrease in the real interest rate and a decrease in output.
   (d) no change in either the real interest rate or output.
   Answer: D
   Level of difficulty: 2
   Section: 11.3

27. In the Keynesian model, which curve is vertical?
   (a) LRAS
   (b) SRAS
   (c) AD
   (d) NS
   Answer: A
   Level of difficulty: 1
   Section: 11.3

28. In the Keynesian model in the long run, a decrease in the money supply will cause _____ in the real interest rate and _____ in the price level.
   (a) an increase; an increase
   (b) a decrease; a decrease
   (c) no change; an increase
   (d) no change; a decrease
   Answer: D
   Level of difficulty: 2
   Section: 11.3

29. According to Keynesians, the primary reason money is not neutral is
   (a) rational expectations.
   (b) price stickiness.
   (c) reverse causation.
   (d) misperceptions over the aggregate price level.
   Answer: B
   Level of difficulty: 1
   Section: 11.3
30. In the Keynesian model in the long run, an increase in the money supply will raise
(a) the price level but not the level of output.
(b) the level of output but not the price level.
(c) both the level of output and the price level.
(d) neither the level of output nor the price level.
Answer: A
Level of difficulty: 1
Section: 11.3

31. Using the Keynesian model, the effect of an increase in the effective tax rate on capital would be to
cause _____ in the real interest rate and ______ in output in the short run.
(a) a decrease; a decrease
(b) a decrease; no change
(c) an increase; an increase
(d) no change; a decrease
Answer: A
Level of difficulty: 2
Section: 11.3

32. Using the Keynesian model, the effect of a decrease in the effective tax rate on capital would be to
cause _____ in the real interest rate and ______ in output in the long run.
(a) an increase; no change
(b) a decrease; no change
(c) an increase; an increase
(d) no change; a decrease
Answer: A
Level of difficulty: 2
Section: 11.3

33. Using the Keynesian model, the effect of a government-imposed ceiling on interest rates paid on
personal checking accounts that is lower than the current market interest rate would be to cause
_____ in the real interest rate and _____ in output in the short run.
(a) a decrease; a decrease
(b) a decrease; no change
(c) a decrease; an increase
(d) an increase; a decrease
Answer: C
Level of difficulty: 3
Section: 11.3

34. In the Keynesian model, an increase in government purchases affects output by
(a) increasing labor supply, because workers feel effectively poorer.
(b) increasing saving to pay for future taxes, lowering the real interest rate and shifting the IS curve
to the left.
(c) increasing the real interest rate due to crowding out, reducing aggregate demand.
(d) increasing aggregate demand as national saving declines.
Answer: D
Level of difficulty: 2
Section: 11.3
35. In the Keynesian model in the short run, a decrease in government purchases causes output to _____ and the real interest rate to _____.  
   (a) fall; rise  
   (b) fall; fall  
   (c) rise; rise  
   (d) rise; fall  
   Answer: B  
   Level of difficulty: 2  
   Section: 11.3

36. In the Keynesian model in the long run, an increase in taxes causes the price level to _____ and the real interest rate to _____.  
   (a) fall; rise  
   (b) fall; fall  
   (c) rise; rise  
   (d) rise; fall  
   Answer: B  
   Level of difficulty: 2  
   Section: 11.3

37. Suppose the government decided to tighten monetary policy and decrease government expenditures. In the short run in the Keynesian model, the effect of these policies would be to _____ the real interest rate and _____ the level of output.  
   (a) lower; decrease  
   (b) lower; have an ambiguous effect on  
   (c) have an ambiguous effect on; decrease  
   (d) raise; decrease  
   Answer: C  
   Level of difficulty: 2  
   Section: 11.3

38. Suppose the government decided to ease monetary policy, then increase taxes. In the short run in the Keynesian model, the effect of these policies would be to _____ the real interest rate and _____ the level of output.  
   (a) lower; increase  
   (b) lower; decrease  
   (c) lower; have an ambiguous effect on  
   (d) have an ambiguous effect on; increase  
   Answer: C  
   Level of difficulty: 2  
   Section: 11.3
39. The 1980s were characterized by _____ monetary policy and _____ fiscal policy.
   (a) tight; easy
   (b) tight; tight
   (c) easy; easy
   (d) easy; tight
   Answer: A
   Level of difficulty: 2
   Section: 11.3

40. Easy monetary policy and tight fiscal policy lead to
   (a) high real interest rates.
   (b) low real interest rates.
   (c) roughly unchanged real interest rates.
   (d) roughly unchanged real interest rates only when Ricardian equivalence holds; otherwise, low real interest rates.
   Answer: B
   Level of difficulty: 2
   Section: 11.3

41. According to Keynesians, the primary source of business cycle fluctuations is
   (a) aggregate demand shocks.
   (b) productivity shocks.
   (c) oil price shocks.
   (d) consumer confidence shocks.
   Answer: A
   Level of difficulty: 1
   Section: 11.4

42. The Keynesian theory is consistent with the business cycle fact that inflation is
   (a) procyclical and leading.
   (b) procyclical and lagging.
   (c) countercyclical and leading.
   (d) countercyclical and lagging.
   Answer: B
   Level of difficulty: 1
   Section: 11.4

43. The idea that firms retain some workers in a recession, whom they would otherwise lay off, to avoid the costs of hiring and training, is called
   (a) the gift exchange motive.
   (b) worker pooling.
   (c) labor hoarding.
   (d) union busting.
   Answer: C
   Level of difficulty: 1
   Section: 11.4
44. The use of macroeconomic policies to smooth or moderate the business cycle is known as
   (a) aggregate demand management.
   (b) aggregate supply management.
   (c) automatic stabilization.
   (d) discretionary policy.
   Answer: A
   Level of difficulty: 1
   Section: 11.4

45. In the Keynesian model, the difference between using monetary and fiscal policy to eliminate a recession is that
   (a) monetary policy will eliminate a recession quicker than fiscal policy will.
   (b) fiscal policy will eliminate a recession quicker than monetary policy will.
   (c) an expansionary monetary policy will leave the economy with a lower real interest rate than an expansionary fiscal policy.
   (d) an expansionary fiscal policy will leave the economy with a lower real interest rate than an expansionary monetary policy.
   Answer: C
   Level of difficulty: 2
   Section: 11.4

46. In the Keynesian model, the difference between no intervention by the government during a recession and intervention using expansionary monetary or fiscal policy is that no intervention will return the economy to its equilibrium level of output
   (a) faster than intervention will and at a lower price level.
   (b) slower than intervention will and at a higher price level.
   (c) slower than intervention will and at a lower price level.
   (d) faster than intervention will and at a higher price level.
   Answer: C
   Level of difficulty: 2
   Section: 11.4

47. A problem with the use of aggregate demand management to stabilize the business cycle is that
   (a) monetary policy isn’t available to use when interest rates are already rising because of higher inflation.
   (b) fiscal policy takes a long time to have any impact on the economy.
   (c) monetary policy is difficult to use, because the decision-making process is long and complicated.
   (d) the precise amount that output will change in response to monetary or fiscal policy isn’t known.
   Answer: D
   Level of difficulty: 2
   Section: 11.4
48. In the 1990s, nominal interest rates in Japan were approximately
   (a) 0%.
   (b) 10%.
   (c) 100%.
   (d) 1000%.
   Answer: A
   Level of difficulty: 1
   Section: 11.4

49. A situation in which expansionary monetary policy has no effect on the economy is known as
   (a) macroeconomic stabilization.
   (b) a liquidity trap.
   (c) a depression.
   (d) capital flight.
   Answer: B
   Level of difficulty: 1
   Section: 11.4

50. Critics of Japan’s macroeconomic policies in the 1990s argue that Japan erred in not
   (a) borrowing from the United States.
   (b) raising interest rates.
   (c) using expansionary fiscal policy more effectively.
   (d) using contractionary monetary policy more effectively.
   Answer: C
   Level of difficulty: 1
   Section: 11.4

51. Monetary expansion can still be effective in getting out of liquidity trap if it’s combined with
   (a) restrictions on bank loans.
   (b) increased taxes.
   (c) contractionary fiscal policy.
   (d) expansionary fiscal policy.
   Answer: D
   Level of difficulty: 1
   Section: 11.4

52. In the long run in the Keynesian model, a beneficial supply shock would leave the economy with a
   higher level of output, but also a _____ real interest rate and a _____ price level.
   (a) higher; lower
   (b) lower; higher
   (c) lower; lower
   (d) higher; higher
   Answer: C
   Level of difficulty: 2
   Section: 11.4
53. In the short run in the Keynesian model, a sharp increase in oil prices would leave the economy with a _____ level of output and a _____ real interest rate.
(a) higher; lower
(b) lower; higher
(c) lower; lower
(d) higher; higher
Answer: B
Level of difficulty: 2
Section: 11.4

Essay Questions

1. The effort of a firm’s workers depends on their real wage according to the following schedule.

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The marginal product of labor is $MPN = E(400 - 4N)/30$.
(a) What is the efficiency wage?
(b) How many workers will the firm hire?
(c) Suppose an adverse productivity shock reduces the marginal product of labor to $MPN = E(360 - 4N)/30$. How would your answers to parts (a) and (b) change?

Answers: The following table shows the real wage ($w$), the effort level ($E$), and the effort per unit of real wages ($E/w$).

<table>
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<tr>
<th>$w$</th>
<th>$E$</th>
<th>$E/w$</th>
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<tbody>
<tr>
<td>16</td>
<td>10</td>
<td>0.625</td>
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<tr>
<td>17</td>
<td>13</td>
<td>0.765</td>
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<td>18</td>
<td>18</td>
<td>1.00</td>
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<td>19</td>
<td>22</td>
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(a) The firm will pay a wage of 20, since that wage provides the maximum effort per unit of the real wage ($E/w = 1.25$).
(b) The firm will employ 94 workers, since that is the number of workers for which $w = MPN$; $20 = 25(400 - 4N)/30$, so $4N = 376$, so $N = 94$.
(c) No effect on efficiency wage; employment falls to $N = 84$.
Level of difficulty: 2
Section: 11.1
2. A monopolistically competitive firm prices its product using the markup pricing formula \( P = 1.25MC \), where \( MC \) is the marginal cost of producing an additional unit. Suppose the demand for the firm’s product is given by \( Q = 2000 - 0.1P \), so the revenue from selling \( Q \) units of the product is \( PQ = 2000P - 0.1P^2 \).

(a) If the marginal cost of producing each unit of the product is \( \$10,000 \), calculate the price of the product, the quantity produced, and the firm’s revenues, costs, and profits.

(b) Now suppose the marginal cost rises to \( \$11,000 \). The firm can keep the price of the product unchanged, or it can change the product’s price at a total cost of \( \$700,000 \). Calculate the price, quantity, revenues, costs, and profits as in part (a) both for changing the price and leaving the price unchanged. Should the firm change the price of its product?

**Answers:**

(a) \( P = \$12,500 \), \( Q = 750 \), revenues = \( \$9.375 \) million, costs = \( \$7.5 \) million, profit = \( \$1.875 \) million.

(b) If price is unchanged, quantity and revenues remain the same, while costs rise to \( \$8.25 \) million and profits fall to \( \$1.125 \) million. If the firm raises its price, \( P = \$13,750 \), \( Q = 625 \), revenues = \( \$8.59375 \) million, costs = \( \$6.875 \) million + \( \$0.7 \) million = \( \$7.575 \) million, and profit = \( \$1.01875 \) million. So the firm should leave the price unchanged.

Level of difficulty: 2
Section: 11.3

3. (a) Draw a figure, using the Keynesian IS-LM framework, of an economy in recession.

(b) Now suppose the IS curve shifts up and to the right far enough that if the real interest rate is unchanged, output will increase beyond full employment. If the Fed’s goal is to move output to its full-employment level, what must happen to the real interest rate? What is the effect on the price level?

(c) Suppose, before the Fed can act, that the government announces a restrictive fiscal policy, shifting the IS curve down and to the left relative to its position in part (b). What is the Fed likely to do (relative to what it would do if fiscal policy wasn’t restrictive) if its goal is to target full-employment output? What happens to the real interest rate relative to what it is in part (b)?

**Answers:**

(a) The figure should be drawn such that the IS and LM curves intersect to the left of the FE line.

(b) The Fed would shift the LM curve to restore general equilibrium. The real interest rate would rise but the price level wouldn’t change.

(c) Tighter fiscal policy means the Fed shifts the LM curve down and to the right relative to what it would do in part (b). As a result, the real interest rate doesn’t rise as much.

Level of difficulty: 2
Section: 11.3
4. According to the Keynesian IS-LM model, what is the effect of each of the following on output, the real interest rate, employment, and the price level? Distinguish between the short run and the long run.

(a) Expected inflation rises.
(b) Wealth increases.
(c) Labor supply decreases due to a change in demographics.
(d) The future marginal product of capital decreases.

**Answers:**

(a) Short run: \(Y\) and \(N\) increase; \(r\) falls; \(P\) is unchanged. Long run: \(P\) rises; \(Y, r,\) and \(N\) are unchanged.
(b) Short run: \(Y, r,\) and \(N\) increase; \(P\) is unchanged. Long run: \(r\) and \(P\) rise; \(Y\) and \(N\) are unchanged.
(c) Nothing happens to any of the variables.
(d) Short run: \(Y, r,\) and \(N\) fall; \(P\) is unchanged. Long run: \(r\) and \(P\) fall; \(Y\) and \(N\) are unchanged.

Level of difficulty: 2
Section: 11.3

5. A Keynesian economy is described by the following equations.

\[ C' = 250 + 0.5(Y - T) - 250r \]
\[ I' = 250 - 250r \]
\[ G = 300 \]
\[ T = 300 \]
\[ L = 0.5Y - 500r + \pi' \]
\[ M = 3000 \]
\[ \bar{Y} = 1250 \]
\[ \pi' = 0 \]

(a) Calculate the values of the real interest rate, the price level, consumption, and investment for the economy in general equilibrium.
(b) Now suppose government purchases increase to 350 with no change in taxes. What will be the real interest rate, the price level, output, consumption, and investment in the short run?
(c) What will be the real interest rate, the price level, output, consumption, and investment in the long run?

**Answers:**

(a) \(r = 0.05, P = 5, C = 712.5, I = 237.5\)
(b) \(r = 0.10, P = 5, Y = 1300, C = 725, I = 225\)
(c) \(r = 0.15, P = 5.4545, Y = 1250, C = 687.5, I = 212.5\)

Level of difficulty: 3
Section: 11.3
6. The following equations describe a Keynesian model of the economy.

\[ C^d = 500 + 0.5(Y - T) - 100r \]
\[ I^d = 350 - 100r \]
\[ L = 0.5Y - 200i \]
\[ \pi = 0.05, \ G = T = 200, \ \bar{Y} = 1850 \]
\[ M = 3560 \]

(a) Find the full-employment equilibrium values of the real interest rate, consumption, investment, and the price level.

(b) Suppose government purchases decline to 175, with no change in taxes. What happens to the real interest rate, output, consumption, and investment in the short run (in which the price level is fixed)? What happens in the long run to the real interest rate, consumption, investment, and the price level?

(c) Suppose instead that government purchases rise to 225, with no change in taxes, starting from the equilibrium in part (a). What happens to the real interest rate, output, consumption, and investment in the short run (in which the price level is fixed)? What happens in the long run to the real interest rate, consumption, investment, and the price level?

**Answers:**

(a) \[ S^d = Y - C^d - G = 0.5Y - 400 + 100r - G \]. Set \[ S^d = I^d : 0.5Y - 400 + 100r - G = 350 - 100r \], so
\[ 200r = (750 + G) - 0.5Y (IS). \]
With \( G = 200 \) and \( Y = 1850 \), \( r = 0.125 \). Then \( C = 1312.5 \) and \( I = 337.5 \).
\[ 3560/P = (0.5 \times 1850) - (200 \times 0.175) = 925 - 35 = 890, \ so \ P = 4. \]

(b) With \( P = 4 \), the \( LM \) curve is \[ 3560/4 = 0.5Y - 200r - (200 \times 0.05), \ or 0.5Y = 900 + 200r. \]
Combining this with the \( IS \) curve gives \( Y = 1650 + G. \)
For \( G = 175, \ Y = 1825, \ so \ r = 0.0625, \ C = 1306.25, \ I = 343.75 \) in the short run. In the long run, \( Y = 1850, \ so \ r = 0, \ C = 1325, \ I = 350, \ P = 3.891. \)

(c) For \( G = 225, \ Y = 1875, \ so \ r = 0.1875, \ C = 1318.75, \ I = 331.25 \) in the short run. In the long run, \( Y = 1850, \ so \ r = 0.25, \ C = 1300, \ I = 325, \ P = 4.116. \)

Level of difficulty: 2
Section: 11.3
7. You are the liaison between the Federal Reserve Board and the U.S. Treasury Department. Your goal is to coordinate policy efforts to achieve full-employment output in the economy while keeping a fixed real interest rate. You must recommend tightening or easing both monetary and fiscal policies to do this. What would your recommendation be in each of the following situations?
(a) People decide to increase saving.
(b) Expected inflation declines.
(c) The future marginal productivity of capital declines.
(d) There’s an adverse oil price shock in which the $LM$ curve moves farther to the left than does the $FE$ line.
**Answers:**
(a) Loosen fiscal policy, no change in monetary policy
(b) Ease monetary policy, no change in fiscal policy
(c) Ease fiscal policy, no change in monetary policy
(d) Tighten fiscal policy, ease monetary policy
Level of difficulty: 3
Section: 11.4

8. You are the chairperson of the Board of Governors of the Federal Reserve. You believe in a Keynesian model of the economy, and your goal is to keep the economy at the full-employment level of output. How would you respond (tightening or easing policy) in each of the following cases?
(a) Government purchases increase
(b) Corporate tax rates increase
(c) Expected inflation increases
(d) There’s a beneficial oil price shock (and the $LM$ curve shifts more to the right than the $FE$ line)
**Answers:**
(a) Tighten
(b) Ease
(c) Tighten
(d) Tighten
Level of difficulty: 2
Section: 11.4

9. Describe the situation of the Japanese economy in the 1990s. What should the Japanese government have done differently, according to critics, to improve the economy?
**Answers:** The nominal interest rate was essentially zero in Japan. Japan was in a liquidity trap, in which monetary policy alone became ineffective. Japan should have used more expansionary fiscal policy, along with expansionary monetary policy, to escape the trap.
Level of difficulty: 1
Section: 11.4
10. Describe the effects of an oil price shock in a Keynesian model; why are such supply shocks difficult to handle using macroeconomic stabilization policies?

**Answer:** The *FE* line shifts left, the *LM* curve even more so, so the economy enters a recession. The price level rises immediately, the real interest rate rises, and output declines. Macroeconomic stabilization policy can’t restore output to its previous level, for the attempt to do so will cause inflation. Even restoring the economy to its (lower) full-employment level of output is difficult without risking even higher inflation.

Level of difficulty: 1
Section: 11.4