Chapter 12
Unemployment and Inflation

Multiple Choice Questions

1. The origin of the idea of a trade-off between inflation and unemployment was a 1958 article by
   (a) A.W. Phillips.
   (b) Edmund Phelps.
   (c) Milton Friedman.
   (d) Robert Gordon.
   Answer: A
   Level of difficulty: 1
   Section: 12.1

2. Phillips’s research looked at British data on
   (a) unemployment and inflation.
   (b) unemployment and nominal wage growth.
   (c) inflation and nominal wage growth.
   (d) unemployment and output.
   Answer: B
   Level of difficulty: 1
   Section: 12.1

3. The negative relationship between unemployment and inflation is known as the
   (a) aggregate supply curve.
   (b) aggregate demand curve.
   (c) Phillips curve.
   (d) efficiency wage line.
   Answer: C
   Level of difficulty: 1
   Section: 12.1

4. The Phillips curve appeared to fit the data well for the United States in the
   (a) 1960s.
   (b) 1970s.
   (c) 1980s.
   (d) 1990s.
   Answer: A
   Level of difficulty: 1
   Section: 12.1
5. Friedman and Phelps suggested that there should not be a stable relationship between inflation and unemployment, but there should be a stable relationship between
(a) anticipated inflation and frictional unemployment.
(b) anticipated inflation and cyclical unemployment.
(c) unanticipated inflation and frictional unemployment.
(d) unanticipated inflation and cyclical unemployment.
Answer: D
Level of difficulty: 1
Section: 12.1

6. Milton Friedman and Edmund Phelps questioned
(a) the use of expectations in the Phillips curve.
(b) the stability of the relationship between inflation and unemployment.
(c) the existence of a natural rate of unemployment.
(d) the existence of a full-employment level of output.
Answer: B
Level of difficulty: 1
Section: 12.1

7. In the extended classical model, an anticipated decrease in the money supply would cause output to _____ and the price level to _____ in the short run.
(a) increase; decrease
(b) increase; remain unchanged
(c) remain unchanged; increase
(d) remain unchanged; decrease
Answer: D
Level of difficulty: 1
Section: 12.1

8. In the extended classical model, an unanticipated increase in the money supply would cause output to _____ and the price level to _____ in the short run.
(a) increase; increase
(b) decrease; remain unchanged
(c) remain unchanged; increase
(d) decrease; decrease
Answer: A
Level of difficulty: 1
Section: 12.1

9. In the extended classical model, an unexpected decrease in aggregate demand would cause unanticipated inflation to be _____ and cyclical unemployment to be _____.
(a) positive; negative
(b) positive; positive
(c) negative; negative
(d) negative; positive
Answer: D
Level of difficulty: 2
Section: 12.1
10. In the expectations-augmented Phillips curve, \( \pi = \pi' - 3(u - \bar{u}) \). If \( \pi = 0.03 \) when \( \pi' = 0.06 \) and \( u = 0.06 \), then \( \bar{u} = \)
(a) 0.02.
(b) 0.03.
(c) 0.04.
(d) 0.05.
Answer: D
Level of difficulty: 2
Section: 12.1

11. In the expectations-augmented Phillips curve, \( \pi = \pi' - 3(u - 0.06) \). When \( \pi = 0.06 \) and \( \pi' = 0.03 \), the unemployment rate is
(a) 0.04.
(b) 0.05.
(c) 0.06.
(d) 0.07.
Answer: B
Level of difficulty: 2
Section: 12.1

12. The Phillips curve is the relation between inflation and unemployment that holds for a given natural rate of unemployment and a
(a) given rate of inflation.
(b) given expected rate of inflation.
(c) given level of unemployment.
(d) given expected level of unemployment.
Answer: B
Level of difficulty: 1
Section: 12.1

13. Suppose most people had anticipated that inflation would be 3% in the coming year because the Fed would increase the money supply by 3%. Instead, the Fed increases the money supply by 5%. In the short run, this would cause actual output to be _____ full-employment output and prices to increase by _____ 3%.
(a) above; more than
(b) above; less than
(c) below; more than
(d) below; less than
Answer: A
Level of difficulty: 1
Section: 12.1
14. An increase in the expected rate of inflation would
   (a) shift the Phillips curve upward.
   (b) shift the Phillips curve downward.
   (c) shift the long-run Phillips curve to the right.
   (d) shift the long-run Phillips curve to the left.
   Answer: A
   Level of difficulty: 1
   Section: 12.1

15. If the expected inflation rate is unchanged, a fall in the natural rate of unemployment would
   (a) shift the Phillips curve to the right.
   (b) not shift the Phillips curve.
   (c) shift the Phillips curve to the left.
   (d) shift the Phillips curve to the left and shift the long-run Phillips curve to the right.
   Answer: C
   Level of difficulty: 1
   Section: 12.1

16. If the expected rate of inflation rose at the same time the natural rate of unemployment rose, the
    Phillips curve
   (a) would shift down.
   (b) would shift up.
   (c) would not move.
   (d) might shift up or down or not move, depending on which effect was larger.
   Answer: B
   Level of difficulty: 1
   Section: 12.1

17. A beneficial supply shock would cause
   (a) a movement up the short-run Phillips curve.
   (b) a movement down the short-run Phillips curve.
   (c) the short-run Phillips curve to shift upward and to the right.
   (d) the short-run Phillips curve to shift downward and to the left.
   Answer: D
   Level of difficulty: 1
   Section: 12.1

18. Classicals argue that an adverse supply shock would
   (a) raise neither the natural rate of unemployment nor the actual rate of unemployment.
   (b) raise the actual rate of unemployment, but not the natural rate of unemployment.
   (c) raise the natural rate of unemployment, but not the actual rate of unemployment.
   (d) raise both the natural rate of unemployment and the actual rate of unemployment.
   Answer: D
   Level of difficulty: 2
   Section: 12.1
19. Historically, Brazil has suffered higher and more variable rates of inflation than Venezuela. You would expect the short-run aggregate supply curve of Brazil to be _____ than that of Venezuela, and the Phillips curve of Brazil to be _____ than that of Venezuela.

(a) flatter; flatter
(b) flatter; steeper
(c) steeper; flatter
(d) steeper; steeper

Answer: D
Level of difficulty: 2
Section: 12.1

20. The Friedman-Phelps analysis shows that a negative relationship between inflation and unemployment holds

(a) even when expected inflation changes.
(b) even when the natural rate of unemployment changes.
(c) even if both the expected inflation rate and the natural rate of unemployment change.
(d) as long as the expected inflation rate and the natural rate of unemployment are approximately constant.

Answer: D
Level of difficulty: 1
Section: 12.1

21. The Phillips curve shifted during the 1970s primarily because of

(a) the two large oil price shocks.
(b) the changing demographics of the population.
(c) tight monetary policy.
(d) easy fiscal policy.

Answer: A
Level of difficulty: 1
Section: 12.1

22. Examining data on cyclical unemployment plotted against unanticipated inflation shows

(a) a positive relationship.
(b) a negative relationship.
(c) no significant relationship.
(d) a relationship only during the 1960s.

Answer: B
Level of difficulty: 1
Section: 12.1

23. The Friedman-Phelps analysis suggests that there is a long-term relationship between

(a) inflation and unemployment.
(b) cyclical inflation and structural unemployment.
(c) unanticipated inflation and cyclical unemployment.
(d) anticipated inflation and structural unemployment.

Answer: C
Level of difficulty: 1
Section: 12.1
24. An analysis of the American economy since 1960 shows that there is a stable relationship between inflation and unemployment
   (a) only in the short run.
   (b) only in the long run.
   (c) in neither the short run nor the long run.
   (d) in both the short run and the long run.
   Answer: A
   Level of difficulty: 1
   Section: 12.1

25. Both classicals and Keynesians agree that policymakers
   (a) can exploit the Phillips curve in the short run.
   (b) cannot exploit the Phillips curve in the short run.
   (c) can keep the unemployment rate permanently below the natural rate by permanently running a high rate of inflation.
   (d) cannot keep the unemployment rate permanently below the natural rate by permanently running a high rate of inflation.
   Answer: D
   Level of difficulty: 1
   Section: 12.1

26. The Lucas critique is an objection to the assumption that
   (a) inflation is always and everywhere a monetary phenomenon.
   (b) there is a negative relationship between inflation and unemployment.
   (c) historical relationships between macroeconomic variables will continue to hold after new policies are in place.
   (d) people form expectations rationally.
   Answer: C
   Level of difficulty: 1
   Section: 12.1

27. The argument that when policy changes, people’s behavior changes so that historical relationships between macroeconomic variables will no longer hold is known as
   (a) the Phillips curve.
   (b) the policy irrelevance hypothesis.
   (c) hysteresis.
   (d) the Lucas critique.
   Answer: D
   Level of difficulty: 1
   Section: 12.1

28. The long-run Phillips curve is
   (a) vertical.
   (b) horizontal.
   (c) upward sloping.
   (d) downward sloping.
   Answer: A
   Level of difficulty: 1
   Section: 12.1
29. The fact that the long-run Phillips curve is vertical implies that
   (a) monetary policy can’t affect unemployment.
   (b) money is neutral in the long run.
   (c) there is a natural rate of inflation.
   (d) money can’t affect inflation in the long run.
   Answer: B
   Level of difficulty: 1
   Section: 12.1

30. When the economy goes into a recession, there’s an increase in
   (a) frictional unemployment.
   (b) structural unemployment.
   (c) cyclical unemployment.
   (d) voluntary unemployment.
   Answer: C
   Level of difficulty: 1
   Section: 12.2

31. Some economists argue that Okun’s Law overstates the cost of cyclical unemployment because
   (a) the cost of retraining workers must be offset against the loss in output that occurs when workers
       are unemployed.
   (b) if efficiency wages prevail, and workers are paid their real wages, already employed workers
       will reduce their effort, reducing output.
   (c) it ignores the fact that leisure increases during a recession.
   (d) it ignores the loss of government revenue and additional government expenditures that occur
       when unemployment rises.
   Answer: C
   Level of difficulty: 2
   Section: 12.2

32. Nordhaus’s theory of political business cycles suggests that
   (a) Democrats care more about unemployment relative to inflation than Republicans do.
   (b) Republicans are likely to cause recessions in their first terms of office.
   (c) politicians will use expansionary policy to stimulate the economy in election years.
   (d) the state of the economy has little influence on elections.
   Answer: C
   Level of difficulty: 1
   Section: 12.2

33. Combining the partisan theory with rational expectations and the expectations-augmented Phillips
    curve led Alesina to theorize that when a Democrat is elected as President, inflation will be _____
    than expected, while unemployment will _____.
    (a) lower; rise
    (b) lower; fall
    (c) higher; rise
    (d) higher; fall
    Answer: D
    Level of difficulty: 1
    Section: 12.2
34. One reason for the fall in the natural rate of unemployment since 1980 is
   (a) changes in the demographic composition of the work force.
   (b) the decline in inflation.
   (c) increased competition from foreign workers.
   (d) the depreciation of the dollar relative to foreign currencies.
   Answer: A
   Level of difficulty: 1
   Section: 12.2

35. Hysteresis in unemployment means
   (a) many people counted as employed are really underemployed.
   (b) the natural rate of unemployment changes in response to the actual rate of unemployment.
   (c) there is no natural rate of unemployment; there is a natural rate of inflation instead.
   (d) the actual unemployment rises when the natural rate of unemployment rises.
   Answer: B
   Level of difficulty: 1
   Section: 12.2

36. The idea that the natural rate of unemployment rises when the actual rate of unemployment rises is known as
   (a) stabilization.
   (b) insider-outsider theory.
   (c) hysteresis.
   (d) an efficiency wage model.
   Answer: C
   Level of difficulty: 1
   Section: 12.2

37. The insider-outsider theory suggests that
   (a) insiders get lower wages but higher benefits than outsiders.
   (b) unemployment insurance leads to higher rates of unemployment.
   (c) unions seek high wages without causing firms to cut employment.
   (d) the minimum wage forces low-skilled workers to become unemployed.
   Answer: C
   Level of difficulty: 1
   Section: 12.2

38. Empirical evidence by Burtless on the effect of unemployment insurance on unemployment suggests that
   (a) more-generous unemployment-insurance systems lead directly to higher unemployment rates.
   (b) less-generous unemployment-insurance systems lead directly to higher unemployment rates.
   (c) shorter benefit duration accounts for longer spells of unemployment.
   (d) longer benefit duration accounts for longer spells of unemployment.
   Answer: D
   Level of difficulty: 1
   Section: 12.2
39. Which of the following would probably be the most effective at reducing structural unemployment?
   (a) Reduce unemployment benefits.
   (b) Provide more information about the availability and location of jobs.
   (c) Retrain workers who are unemployed.
   (d) Increase union strength in the economy.

   Answer: C
   Level of difficulty: 1
   Section: 12.2

40. A high-pressure economy is one in which
   (a) monetary and fiscal policy are used to keep unemployment as low as possible.
   (b) there is no unemployment insurance, putting pressure on workers to keep their jobs and stay off welfare.
   (c) wage and price controls prevent firms from raising prices by more than the general price level.
   (d) the Federal Reserve tightens monetary policy to force all inflation out of the economy.

   Answer: A
   Level of difficulty: 1
   Section: 12.2

41. One cost of a perfectly anticipated inflation is that it
   (a) transfers wealth from lenders to borrowers.
   (b) transfers wealth from borrowers to lenders.
   (c) increases menu costs.
   (d) damages the role of prices as signals in the economy.

   Answer: C
   Level of difficulty: 1
   Section: 12.3

42. When actual inflation is greater than expected inflation
   (a) unemployment falls, according to Phillips-curve analysis.
   (b) cyclical unemployment falls, according to Phillips-curve analysis.
   (c) there are transfers from borrowers to lenders.
   (d) there are transfers from lenders to borrowers.

   Answer: D
   Level of difficulty: 1
   Section: 12.3

43. One cost of an unanticipated inflation is that it
   (a) transfers wealth from lenders to borrowers.
   (b) transfers wealth from borrowers to lenders.
   (c) decreases menu costs.
   (d) increases the purchasing power of money.

   Answer: A
   Level of difficulty: 1
   Section: 12.3
44. A COLA is
   (a) a center of labor activity.
   (b) a cost of living adjustment.
   (c) a contract on long-term assets.
   (d) a crisis of labor analysis.
   Answer: B
   Level of difficulty: 1
   Section: 12.3

45. Hyperinflation occurs when
   (a) the inflation rate rises.
   (b) the inflation rate declines.
   (c) the inflation rate is extremely high.
   (d) the inflation rate is extremely low.
   Answer: C
   Level of difficulty: 1
   Section: 12.3

46. The reduction of the inflation rate is called
   (a) deflation.
   (b) disinflation.
   (c) unflation.
   (d) reflation.
   Answer: B
   Level of difficulty: 1
   Section: 12.3

47. The costs of disinflation would be low if
   (a) expected inflation falls as inflation falls.
   (b) wage and price controls were used.
   (c) the Phillips curve were nearly horizontal.
   (d) the Phillips curve adjusted slowly to changes in inflation.
   Answer: A
   Level of difficulty: 2
   Section: 12.3

48. A rapid and decisive reduction in the rate of growth of the money supply for the purpose of disinflation is called
   (a) a salt water policy.
   (b) a cold shower policy.
   (c) gradualism.
   (d) a cold turkey policy.
   Answer: D
   Level of difficulty: 1
   Section: 12.3
49. Keynesians prefer a disinflation policy of
   (a) cold turkey.
   (b) stabilization.
   (c) gradualism.
   (d) aggregate demand management.
   Answer: C
   Level of difficulty: 1
   Section: 12.3

50. The sacrifice ratio is
   (a) the amount of output lost when the inflation rate is reduced by one percentage point.
   (b) the percentage reduction in inflation when output falls one percentage point below potential.
   (c) the percentage change in employment when output declines by one percentage point.
   (d) the number of percentage points that the unemployment rate rises when output declines by one percentage point.
   Answer: A
   Level of difficulty: 1
   Section: 12.3

51. The amount of output lost when the inflation rate is reduced by one percentage point is called
   (a) Okun’s law.
   (b) the sacrifice ratio.
   (c) the Solow residual.
   (d) Planck’s constant.
   Answer: B
   Level of difficulty: 1
   Section: 12.3

52. Ball found that the disinflation of the early 1980s in the United States had a sacrifice ratio of about
   (a) 0.
   (b) 1.
   (c) 2.
   (d) 3.
   Answer: C
   Level of difficulty: 1
   Section: 12.3

53. Ball’s research showed that the sacrifice ratio
   (a) was the same for all countries.
   (b) was nearly zero for most countries.
   (c) was about 10 for all countries except the United States, where it was about 2.
   (d) varied considerably across countries.
   Answer: D
   Level of difficulty: 1
   Section: 12.3
54. Ball found that an important factor affecting the sacrifice ratio was
   (a) the flexibility of the labor market.
   (b) the shape of the yield curve.
   (c) the real interest rate.
   (d) the tightness of fiscal policy.
Answer: A  
Level of difficulty: 1  
Section: 12.3

55. Countries in which wages adjust slowly to changes in the supply of and demand for labor are likely to have _____ sacrifice ratio.
   (a) an infinite
   (b) a high
   (c) a low
   (d) a zero
Answer: B  
Level of difficulty: 1  
Section: 12.3

56. Countries in which wages adjust rapidly to changes in the supply and demand for labor are likely to have _____ sacrifice ratio.
   (a) an infinite
   (b) a high
   (c) a low
   (d) a negative
Answer: C  
Level of difficulty: 1  
Section: 12.3

57. Countries in which the government does not regulate the labor market are likely to have _____ sacrifice ratio.
   (a) an infinite
   (b) a high
   (c) a low
   (d) a negative
Answer: C  
Level of difficulty: 1  
Section: 12.3

58. Ball’s research on disinflation across different countries found that
   (a) costs of disinflation were smaller for rapid disinflation than for gradual disinflation.
   (b) costs of disinflation were larger for rapid disinflation than for gradual disinflation.
   (c) costs of disinflation were about the same for both rapid and gradual disinflation.
   (d) costs of disinflation were smaller when the central bank had a strong inflation-fighting reputation.
Answer: A  
Level of difficulty: 1  
Section: 12.3
59. If a rapid disinflation has a lower sacrifice ratio than a slow disinflation, then reducing inflation is best accomplished by
(a) gradualism.
(b) increasing money growth.
(c) reducing interest rates.
(d) a cold-turkey approach.
Answer: D
Level of difficulty: 1
Section: 12.3

60. The main determinant of how quickly expected inflation adjusts to changes in monetary policy is
(a) the slope of the Phillips curve.
(b) the slope of the short-run aggregate supply curve.
(c) the credibility of the central bank.
(d) the degree of indexation in the economy.
Answer: C
Level of difficulty: 1
Section: 12.3

Ⅲ Essay Questions

1. Suppose Okun’s law holds and a one percentage point increase in the unemployment rate reduces real output by 2% of full-employment output. The expectations-augmented Phillips curve is given by

\[ \pi = \pi' - 2.5 (u - 0.04). \]

Suppose \( \pi = 0.08 \) and \( \pi' = 0.03 \).
(a) What is the natural rate of unemployment?
(b) What is the actual rate of unemployment?
(c) How much is actual GDP compared with full-employment GDP?

Answers:
(a) 0.04
(b) 0.02
(c) 4% higher
Level of difficulty: 2
Section: 12.1
2. You are given the following information about the economy.

<table>
<thead>
<tr>
<th>Year</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>( u )</td>
<td>0.05</td>
<td>0.06</td>
<td>0.09</td>
<td>0.03</td>
</tr>
<tr>
<td>( Y )</td>
<td>1960</td>
<td>1968</td>
<td>1908</td>
<td>2244</td>
</tr>
</tbody>
</table>

The natural rate of unemployment is 0.04, Okun’s Law is that \( (\bar{Y} - Y)/\bar{Y} = 2(u - \bar{u}) \), and the Phillips curve relationship is \( \pi = \pi_e - 2(u - 0.04) \).

(a) What was the full-employment level of output in each year?
(b) Calculate the growth rate of full-employment output each year.
(c) If expected inflation was 0.04 for all four years, what was the inflation rate each year?

**Answers:**

<table>
<thead>
<tr>
<th>Year</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \bar{Y} )</td>
<td>2000</td>
<td>2050</td>
<td>2120</td>
<td>2200</td>
</tr>
<tr>
<td>( % \Delta \bar{Y} )</td>
<td>—</td>
<td>2.5%</td>
<td>3.4%</td>
<td>3.8%</td>
</tr>
<tr>
<td>( \pi )</td>
<td>0.02</td>
<td>0.00</td>
<td>-0.06</td>
<td>0.06</td>
</tr>
</tbody>
</table>

Level of difficulty: 2
Section: 12.1

3. Consider the following misperceptions model of the economy.

**AD:** \( Y = 600 + 10(M/P) \)

**SRAS:** \( Y = \bar{Y} + P - P_e \)

Okun’s Law: \( (Y - \bar{Y})/\bar{Y} = -2(u - \bar{u}) \)

Let \( \bar{Y} = 750 \), \( \bar{u} = 0.05 \), \( M = 600 \), and \( P_e = 40 \).

(a) What is the price level?
(b) Suppose there is an unanticipated increase in the nominal money supply to 800. What is the short-run equilibrium level of output, the unemployment rate, and the price level?
(c) When price expectations adjust fully, what is the price level?

**Answers:**

(a) 40
(b) \( Y = 760, u = 0.0433, P = 50 \)
(c) \( P = 53 \frac{1}{3} \)

Level of difficulty: 3
Section: 12.1
4. The relationship between inflation and unemployment is given by
\[ \pi = \pi' - 3(u - 0.06). \]

(a) Graph the short-run and long-run Phillips curves.
(b) What is the value of the natural rate of unemployment?
(c) If actual inflation is 0.02 and expected inflation is 0.05, what is the unemployment rate?
(d) If actual inflation is 0.08 and expected inflation is 0.05, what is the unemployment rate?

**Answers:**
(a) Long run: vertical line at \( u = \bar{u} = 0.06. \)
Short run: downward sloping line (curve) crossing the long-run curve at \( \pi = \pi'. \)
(b) 0.06
(c) 0.07
(d) 0.05

Level of difficulty: 2
Section: 12.1

5. Starting on a Phillips curve with expected inflation equal to 5% and unemployment at its natural rate, show what happens to unemployment if the Fed tries to reduce inflation, but has no credibility. As time passes and people realize that the inflation rate is now lower, what happens to the short-run Phillips curve?

**Answer:** The unemployment rate rises as the economy moves along the Phillips curve and as inflation declines. As time passes, inflation expectations begin to decline, shifting the Phillips curve down and to the left until the unemployment rate returns to its natural rate and inflation and expected inflation are equal at a lower level.

Level of difficulty: 2
Section: 12.1

6. What is the Lucas critique, and why was it so important to macroeconomists in the 1970s?

**Answer:** The Lucas critique suggests that historical relationships between economic variables will be changed significantly when there are significant changes in the economy such as new policies. In the 1970s this was important as it explained the movement of the Phillips curve.

Level of difficulty: 1
Section: 12.1

7. Describe the principal costs of unemployment. Are there any benefits to unemployment?

**Answer:** The costs of unemployment are the loss of output because of idle resources and the personal or psychological cost faced by unemployed workers and their families. There are benefits from unemployment: (1) unemployed workers engage in useful activities, such as searching for a better job match or acquiring new skills; and (2) increased leisure time. But the benefits are likely to be small compared to the costs.

Level of difficulty: 1
Section: 12.2
8. If you were president of the United States, what would you do to reduce the natural rate of unemployment? Propose at least three different methods.

**Answer:** Provide support for job training and worker relocation; increase labor-market flexibility by reducing the minimum wage; reform the unemployment insurance system; run a high-pressure economy (if there is hysteresis).

Level of difficulty: 1
Section: 12.2

9. Describe the major costs of inflation, being sure to distinguish between anticipated and unanticipated inflation.

**Answer:** Costs of anticipated inflation include an erosion of the value of currency, which leads to shoe-leather costs, and the costs of changing prices. Costs of unanticipated inflation arise because unanticipated inflation transfers wealth between people and because it disturbs the role of prices as signals in the economy.

Level of difficulty: 1
Section: 12.3

10. How is the sacrifice ratio measured? How big is the sacrifice ratio in the United States? In other countries? What problems are there in measuring the sacrifice ratio?

**Answer:** The sacrifice ratio is measured as the percentage by which output falls below potential for every percentage point decline in inflation. In the United States, the sacrifice ratio is about 2, while other countries have sacrifice ratios ranging from 3/4 to 3. The sacrifice ratio is difficult to measure because it’s hard to calculate what output would have been in the absence of disinflation and because supply shocks may distort the calculation.

Level of difficulty: 1
Section: 12.3