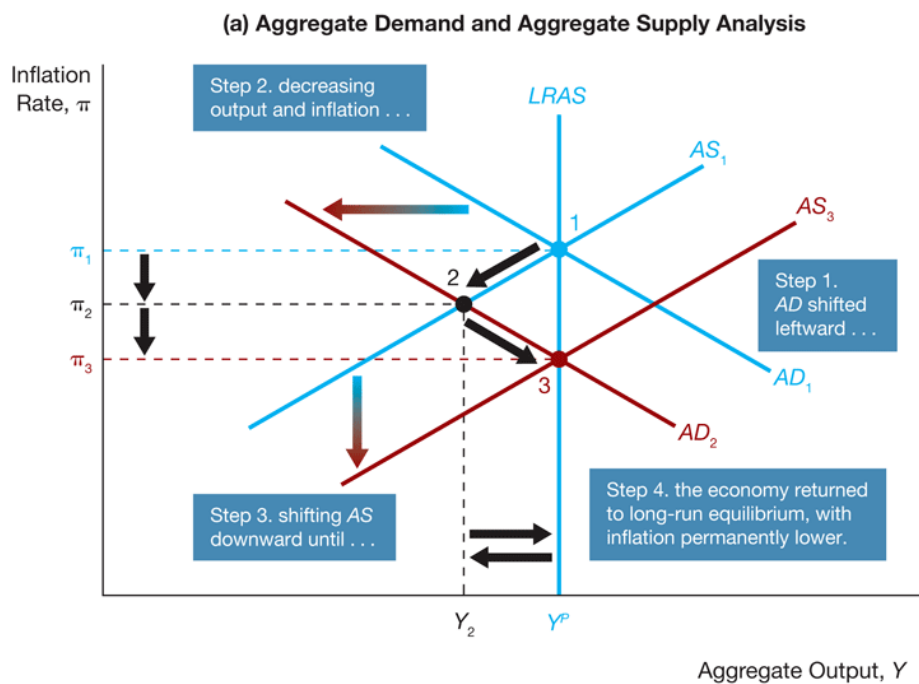


Chapter 23 – Aggregate Demand and Supply Analysis (cont.)

Figure 11 Negative Demand Shocks, 2001–2004



(b) Unemployment and Inflation, 2000–2004

Year	Unemployment Rate (%)	Inflation (Year to Year) (%)
2000	4.0	3.4
2001	4.7	2.8
2002	5.8	1.6
2003	6.0	2.3
2004	5.5	2.7

Changes in Equilibrium: Aggregate Supply (Price) Shocks

The aggregate supply curve can shift from temporary supply (price) shocks in which the long-run aggregate supply curve does not shift, or from permanent supply shocks in which the long-run aggregate supply curve does shift

Temporary Supply Shocks:

When the temporary shock involves a restriction in supply, we refer to this type of supply shock as a negative (or unfavorable) supply shock, and it results in a rise in commodity prices

A temporary positive supply shock shifts the short-run aggregate supply curve downward and to the right, leading initially to a fall in inflation and a rise in output. In the long run, however, output and inflation will be unchanged (holding the aggregate demand curve constant)

Figure 12 Temporary Negative Supply Shock

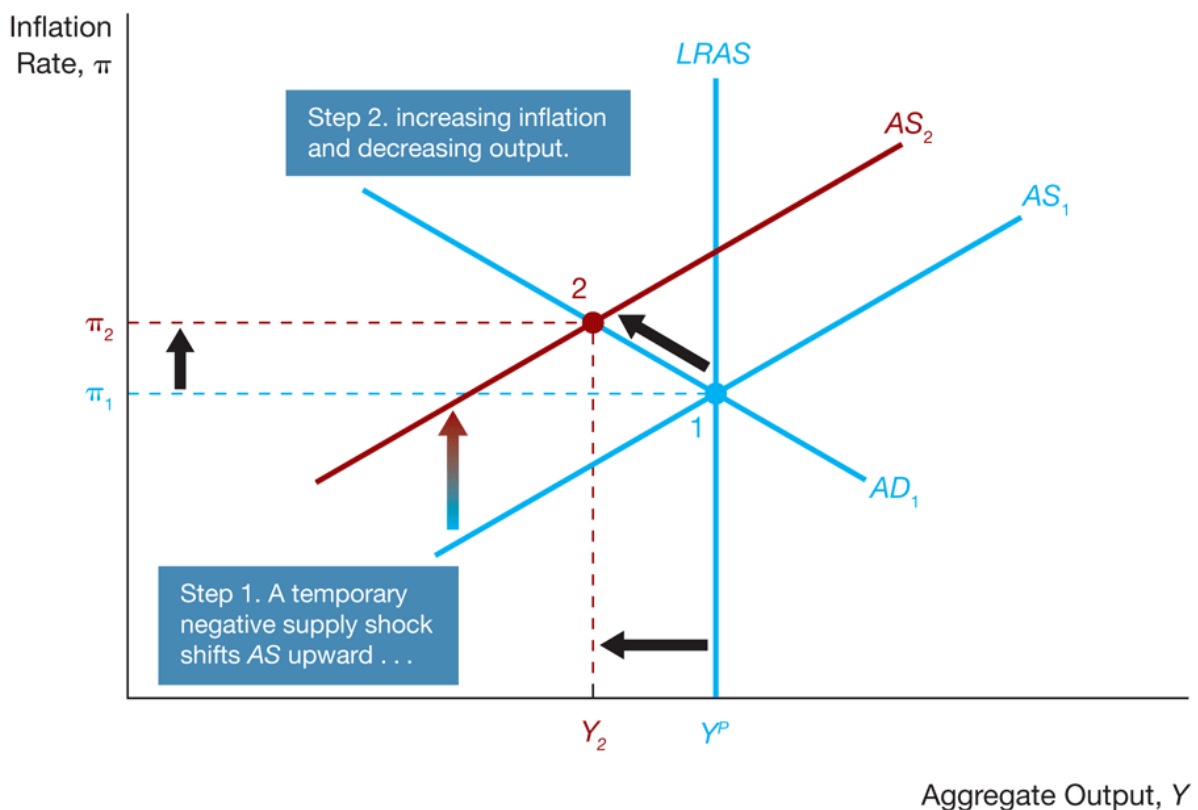
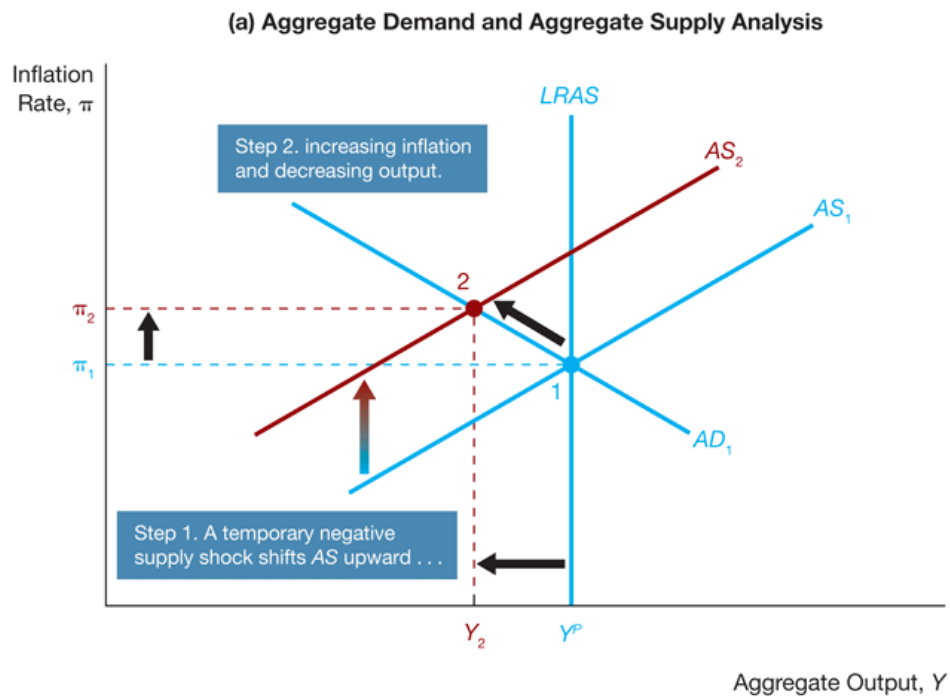


Figure 13 Negative Supply Shocks, 1973–1975 and 1978–1980



(b) Unemployment and Inflation, 1973–1975 and 1978–1980

Year	Unemployment Rate (%)	Inflation (Year to Year) (%)
1973	4.8	6.2
1974	5.5	11.0
1975	8.3	9.1
1978	6.0	7.6
1979	5.8	11.3
1980	7.1	13.5

Permanent Supply Shocks and Real Business Cycle Theory

- A permanent negative supply shock—such as an increase in ill-advised regulations that causes the economy to be less efficient, thereby reducing supply—would decrease potential output and shift the long-run aggregate supply curve to the left
- Because the permanent supply shock will result in higher prices, there will be an immediate rise in inflation and so the short-run aggregate supply curve will shift up and to the left
- One group of economists, led by Edward Prescott of Arizona State University, believe that business cycle fluctuations result from permanent supply shocks alone and their theory of aggregate economic fluctuations is called **real business cycle theory**

Figure 14 Permanent Negative Supply Shock

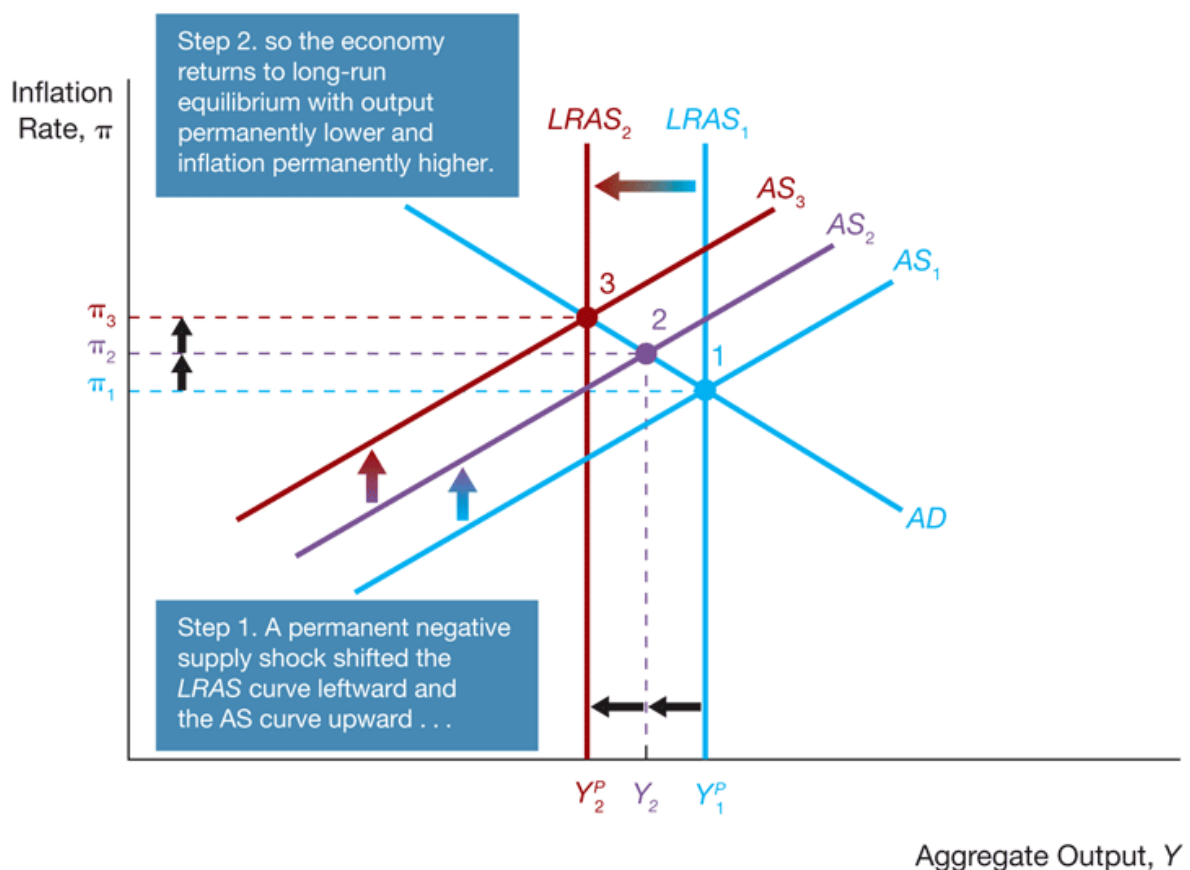
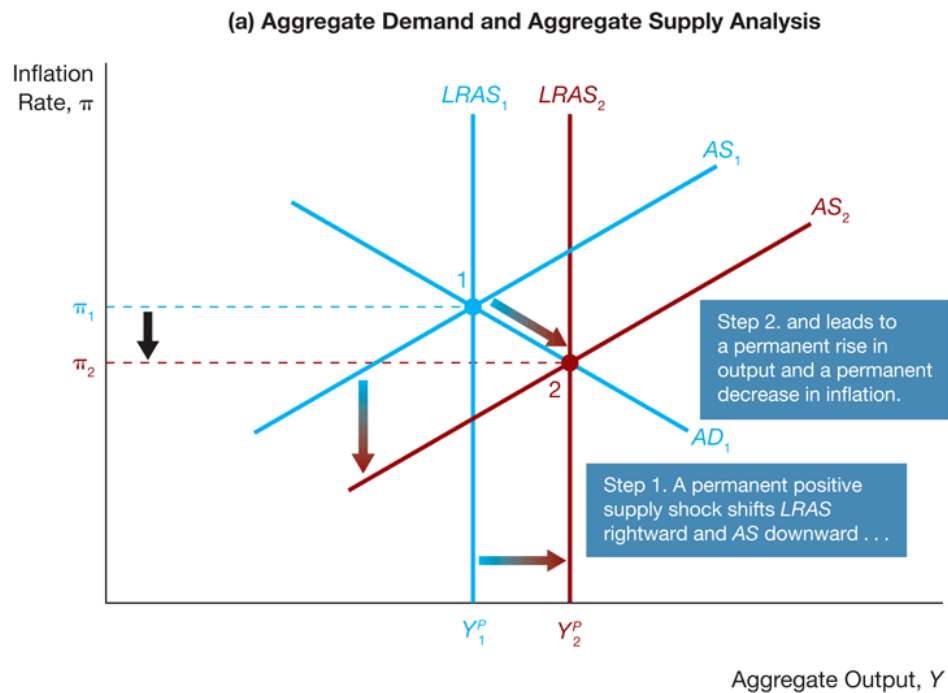


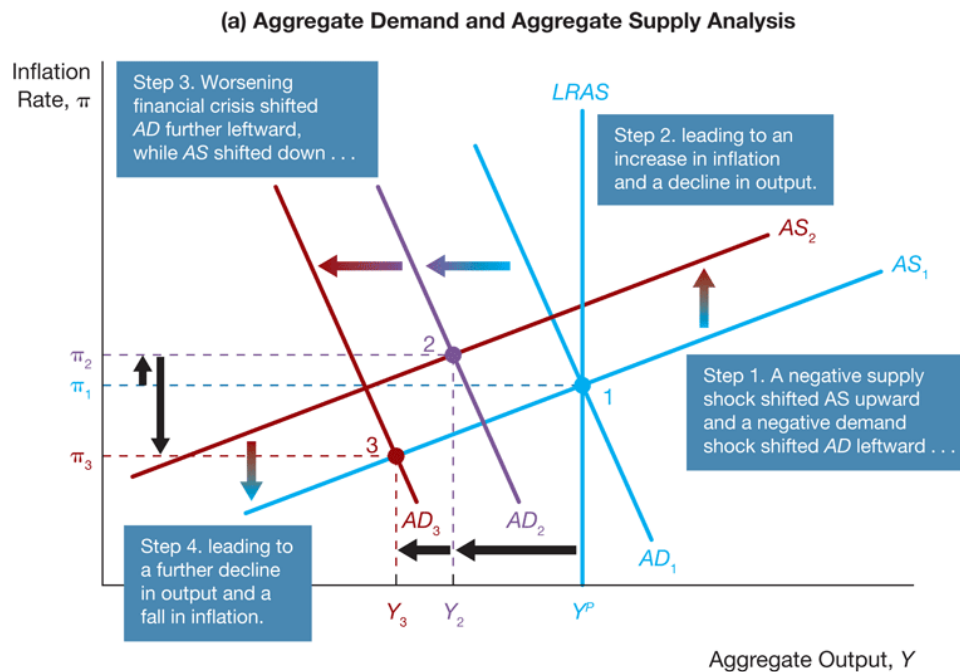
Figure 15 Positive Supply Shocks, 1995–1999



(b) Unemployment and Inflation, 1995–1999

Year	Unemployment Rate (%)	Inflation (Year to Year) (%)
1995	5.6	2.8
1996	5.4	3.0
1997	4.9	2.3
1998	4.5	1.6
1999	4.2	2.2

Figure 16 Negative Supply and Demand Shocks and the 2007–2009 Crisis



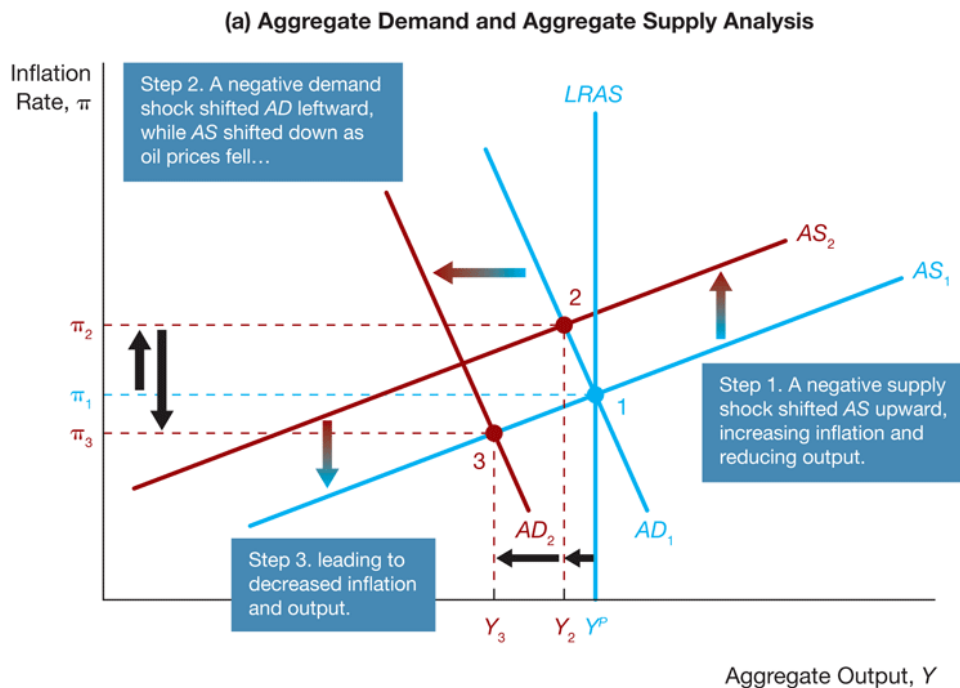
(b) Unemployment and Inflation During the Perfect Storm of 2007–2009

Year	Unemployment Rate (%)	Inflation (Year to Year) (%)
2006	4.6	2.5
2007	4.6	4.1
2008, June	5.5	5.0
2008, Dec.	7.2	0.1
2009, June	9.5	-1.2
2009, Dec.	10.0	2.8

AD/AS Analysis of Foreign Business Cycle Episodes

- Our aggregate demand and supply analysis also can help us understand business cycle episodes in foreign countries
 - Figure 17 shows the UK Financial Crisis, 2007–2009
 - Figure 18 shows China and the Financial Crisis, 2007–2009

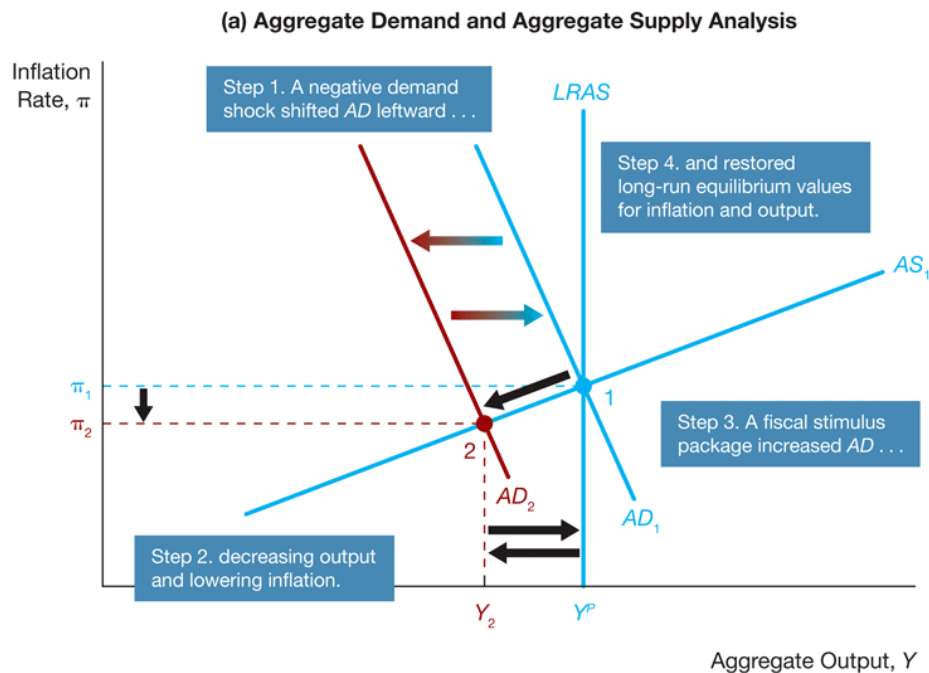
Figure 17 UK Financial Crisis, 2007–2009



(b) Unemployment and Inflation, 2006–2009

Year	Unemployment Rate (%)	Inflation (Year to Year) (%)
2006	5.4	2.3
2007	5.3	2.3
2008, June	5.3	3.4
2008, Dec.	6.4	3.9
2009, June	7.8	2.1
2009, Dec.	7.8	2.1

Figure 18 China and the Financial Crisis, 2007–2009



(b) Chinese Output Growth and Inflation, 2006–2009

Year	Output Growth (%)	Inflation (Year to Year) (%)
2006	11.8	1.5
2007	12.4	4.8
2008, June	11.2	7.9
2008, Dec.	4.4	3.9
2009, June	11.1	−1.1
2009, Dec.	10.4	−0.3

Conclusions

- Aggregate demand and supply analysis yields the following conclusions:
 1. A shift in the aggregate demand curve affects output only in the short run and has no effect in the long run
 2. A temporary supply shock affects output and inflation only in the short run and has no effect in the long run (holding the aggregate demand curve constant)
 3. A permanent supply shock affects output and inflation both in the short and the long run
 4. The economy has a self-correcting mechanism that returns it to potential output and the natural rate of unemployment over time

Appendix to Chapter 22: The Phillips Curve and the Short-Run Aggregate Supply Curve

- The Phillips Curve: the negative relationship between unemployment and inflation
- The idea behind the Phillips curve is intuitive. When labor markets are *tight*—that is, the unemployment rate is *low*—firms may have difficulty hiring qualified workers and may even have a hard time keeping their present employees. Because of the shortage of workers in the labor market, firms will raise wages to attract needed workers and raise their prices at a more rapid rate

Figure 1 Inflation and Unemployment in the United States, 1950–1969 and 1970–2010

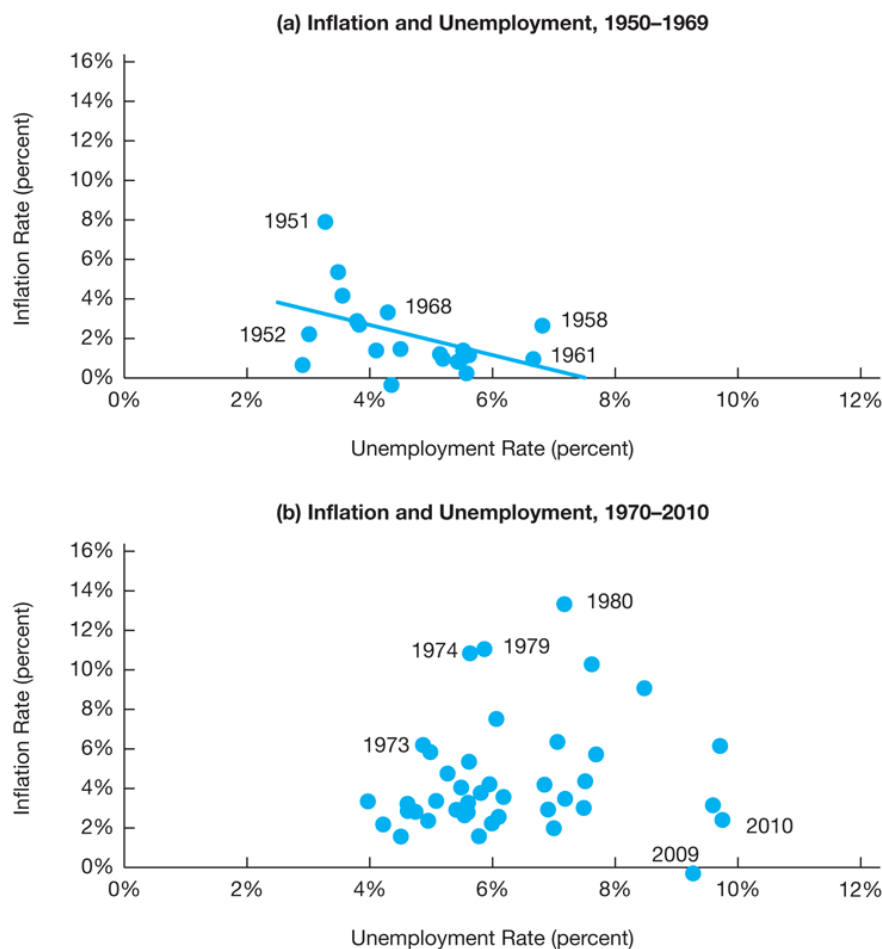
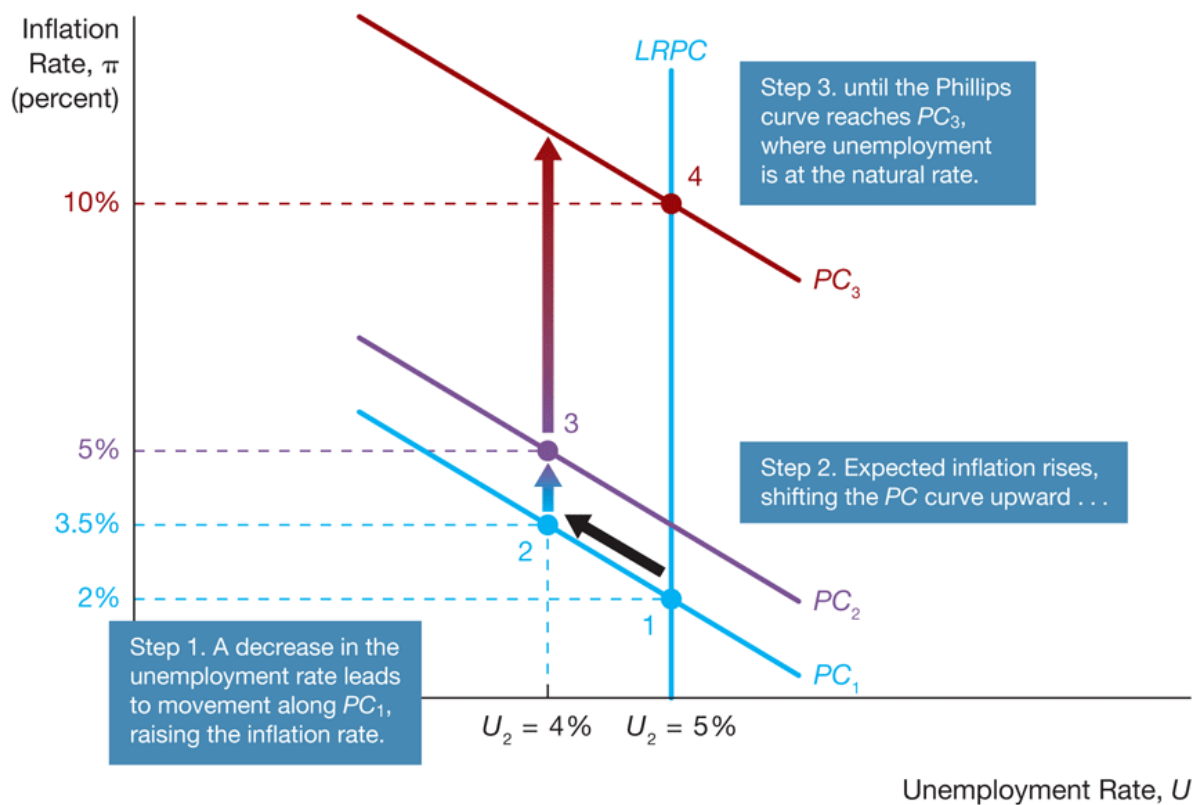


Figure 2 The Short- and Long-Run Phillips Curve



Three Important Conclusions

1. There is no long-run trade-off between unemployment and inflation
2. There is a short-run trade-off between unemployment and inflation
3. There are two types of Phillips curves, long run and short run

The Short-Run Aggregate Supply Curve

- To complete our aggregate demand and supply model, we need to use our analysis of the Phillips curve to derive a short-run aggregate supply curve, which represents the relationship between the total quantity of output that firms are willing to produce and the inflation rate
- We can translate the modern Phillips curve into a short-run aggregate supply curve by replacing the unemployment gap ($U - U_n$) with the *output gap*, the difference between output and potential output ($Y - Y_P$)

Okun's Law

- Okun's law describes the negative relationship between the unemployment gap and the output gap
- Okun's law states that for each percentage point that output is above potential, the unemployment rate is one-half of a percentage point below the natural rate of unemployment. Alternatively, for every percentage point that unemployment is above its natural rate, output is two percentage points below potential output

Figure 3 Okun's Law, 1960–2010

