

Long-Run Aggregate Supply

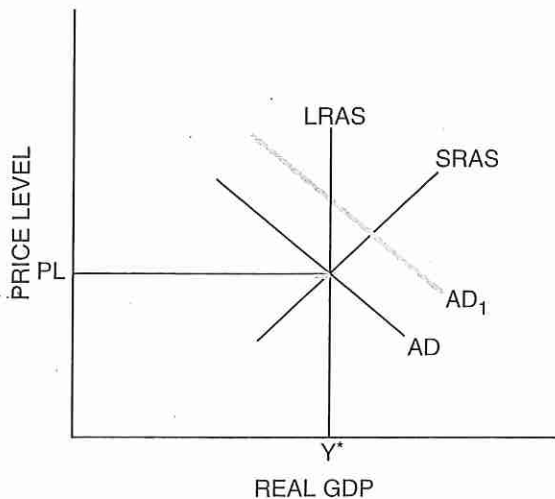
In this activity we move from the short run to the long run. In the short run, at least one factor of production is fixed. In the long run, all factors of production are variable. The short-run aggregate supply (SRAS) curve is upward sloping because of slow wage and price adjustments in the economy. But in the long run, wages and prices have time to adjust. That is, wages and prices are fully flexible. This means that any time the price level changes (i.e., there is inflation or deflation), wages and other input costs fully adjust so there is no overall effect. For example, if prices were doubled and wages and other input costs doubled, there would be no effect. Or if prices were cut in half, but so were wages and other input costs, there would be no effect. In the long run, wages and other input costs adjust so the economy always returns to the full-employment level of output. This means that the long-run aggregate supply (LRAS) curve is vertical at the full-employment output level (which is also called potential output).

Using Figure 3-8.1, answer the following questions about how the economy will react over time if the aggregate demand (AD) shifts from AD to AD₁.



Figure 3-8.1

Increase in Aggregate Demand Starting at Full Employment



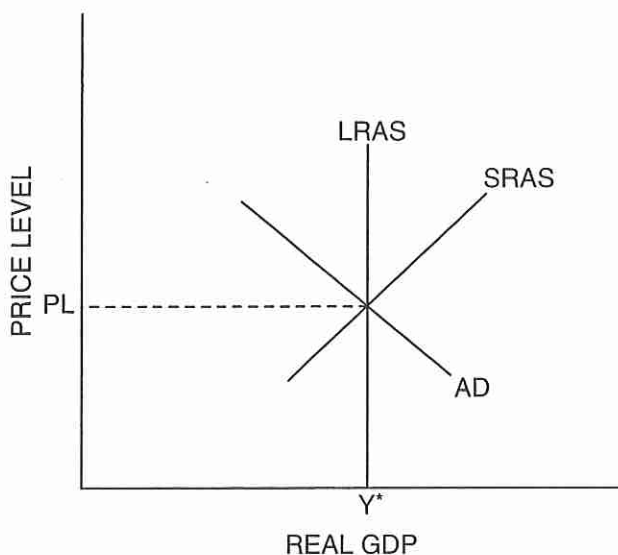
1. What will happen to output, nominal wages and real wages, and the price level in the short run? Explain.
2. What will happen to output and the price level when the economy moves to long-run equilibrium? Explain.

- On Figure 3-8.1, draw the long-run equilibrium situation (including PL, Y, and AD).
- Using Figure 3-8.2, answer the following questions about how the economy will react over time if the aggregate supply (AS) shifts from SRAS to SRAS₁. Assume that no monetary or fiscal policy is undertaken.



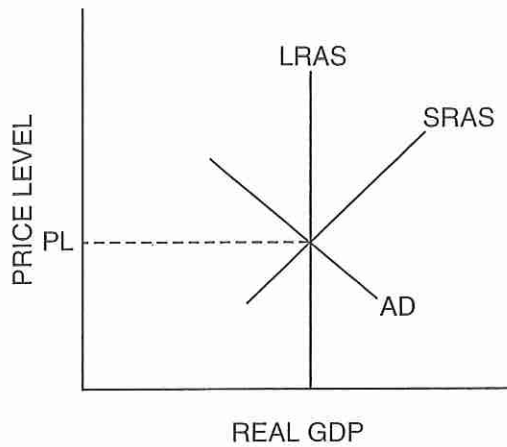
Figure 3-8.2

Change in Short-Run Aggregate Supply

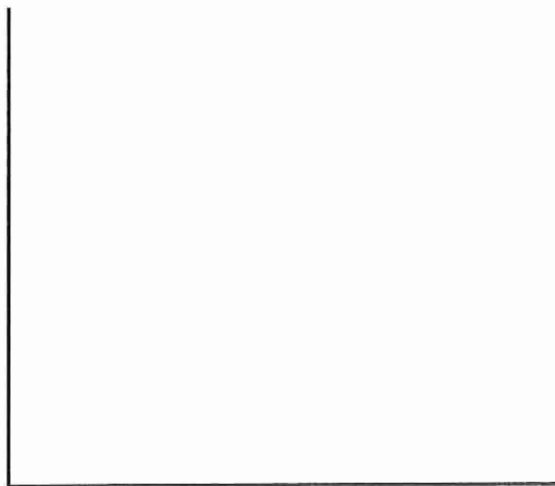


- After SRAS decreases, what happens to the short-run output, nominal wages, real wages, and the price level?
- What will happen to output and the price level when the economy moves to long-run equilibrium? Explain.
- On Figure 3-8.2, draw the long-run equilibrium situation (including PL, Y, and AS).

Read the description of each change in AS or AD. Draw your own graph showing the starting point as long-run equilibrium, illustrated in the graph below. Draw a new SRAS or AD curve that represents the change caused by the event described. Explain the reasons for the short-run change in the graph, and then explain what happens in the long run. Identify the final AD curve as AD_f and the final SRAS curve as $SRAS_f$.



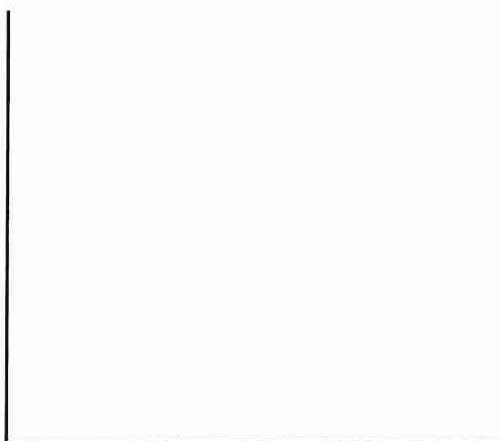
8. The government increases defense spending by 10 percent a year over a five-year period.



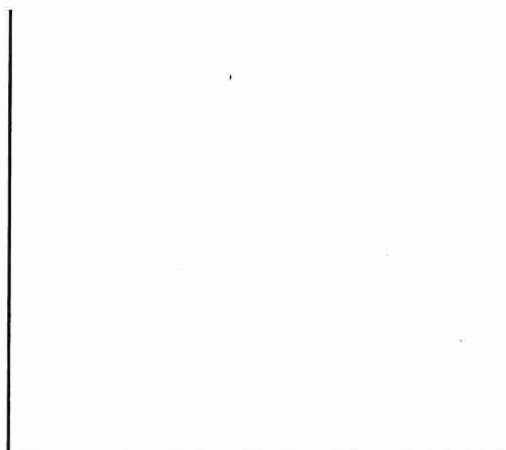
9. OPEC cuts oil production by 30 percent, and the world price of oil rises by 40 percent.



10. The government increases spending on education, health care, housing, and basic services for low-income people. No increase in taxes accompanies these programs.



11. Can the government maintain output above the natural level of output with AD policy? If the government attempts to, what will be the result?



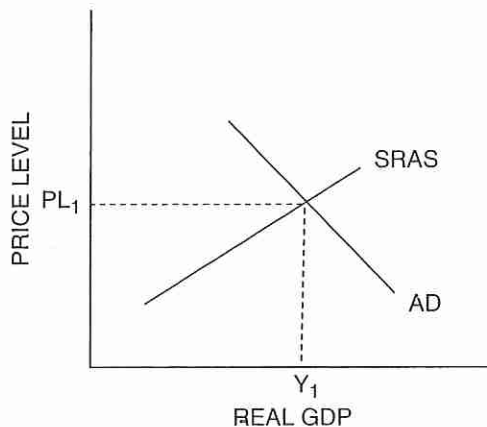
Actual versus Full-Employment Output

The model of aggregate demand (AD) and aggregate supply (AS) predicts that the macroeconomy will come to equilibrium at the intersection of a downward-sloping AD curve and an upward-sloping short-run aggregate supply (SRAS) curve. The short-run equilibrium is described as the only price level where the goods and services purchased by domestic and foreign buyers are equal to the quantity supplied within the economy. It's important to realize that, while the economy might be in equilibrium, this equilibrium level of output can be less than, equal to, or greater than full-employment output.

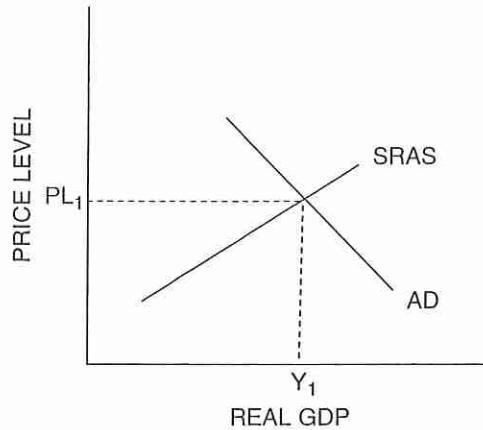
Full-employment output is the level of real gross domestic product (GDP) that exists when the economy's unemployment rate is at its natural rate. This natural rate of unemployment doesn't correspond to an unemployment rate of zero; rather, it is the unemployment rate that exists when there is no cyclical unemployment. When the economy is recessionary, the unemployment rate will exceed this natural rate. When the economy is experiencing an inflationary gap, the unemployment rate will fall below the natural rate.

The distinction between the actual unemployment rate and the natural rate allows us to reconsider the short-run equilibrium in the macroeconomy. If AD and SRAS intersect at a level of output that falls below full-employment output (at the vertical long-run aggregate supply [LRAS] curve), the economy has a recessionary gap. If the AD and SRAS curves intersect at a real output that exceeds full employment, the economy has an inflationary gap.

1. Draw an LRAS curve that illustrates a recessionary gap. Label the full-employment level of output on the graph.



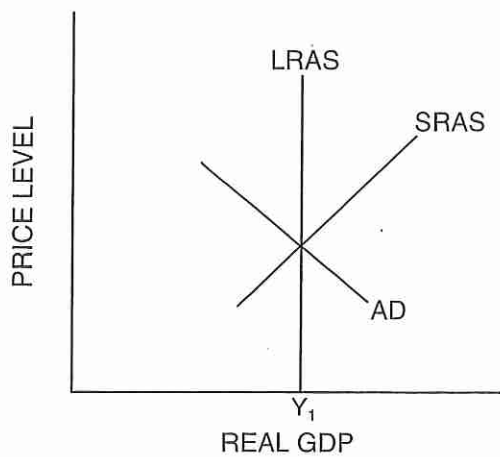
2. Draw an LRAS curve that illustrates an inflationary gap. Label the full-employment level of output on the graph.



3. Suppose households in the United States experience a decrease in wealth. Assume the economy starts at long-run equilibrium as shown in Figure 3-9.1. Use the AS/AD model to show the short-run effect on output, unemployment, and the price level.



Figure 3-9.1
Price Level



(A) Will the unemployment rate increase or decrease? Explain.

(B) What type of gap results from the decrease in wealth?

Circle the letter of each correct answer.

- Which of the following best describes the short-run aggregate supply curve?
 - The amount buyers plan to spend on output
 - A curve showing the relationship between inputs and outputs
 - A curve showing the trade-off between inflation and unemployment
 - A curve indicating the level of real output that will be purchased at each possible price level
 - A curve indicating the level of real output that will be produced at each possible price level
- A change in which of the following will cause the aggregate demand curve to shift?
 - Energy prices
 - Productivity rates
 - Consumer wealth
 - Prices of inputs
 - Prices of consumer goods
- The short-run aggregate supply curve will shift to the right when
 - energy prices increase.
 - government regulation increases.
 - prices of inputs decrease.
 - investment spending decreases.
 - productivity rates decrease.
- A rightward shift in the aggregate demand curve will cause employment and the price level to change in which of the following ways in the short run?

Employment	Price level
(A) Increase	Increase
(B) Increase	Decrease
(C) Increase	No change
(D) Decrease	Increase
(E) No change	No change
- An increase in the capital stock will cause the
 - aggregate demand curve to shift left.
 - aggregate demand to shift right.
 - production possibilities curve to shift in.
 - aggregate supply curve to shift left.
 - long-run aggregate supply curve to shift right.
- Which of the following will increase aggregate demand?
 - A decrease in personal income taxes
 - A decrease in government spending
 - An increase in corporate income taxes
 - A decrease in the capital stock
 - An increase in interest rate
- An increase in labor productivity would most likely cause real gross domestic product and the price level to change in which of the following ways?

Real GDP	Price level
(A) Increase	Increase
(B) Increase	Decrease
(C) Increase	No change
(D) Decrease	Increase
(E) Decrease	No change