Chapter Summary

In this chapter we discussed how sticky prices—or lack of full-wage and price flexibility—cause output to be determined by demand in the short run. We developed a model of aggregate demand and supply to help us analyze what is happening or has happened in the economy. Here are the main points of the chapter:

- Because prices are sticky in the short run, economists think of GDP as being determined primarily by demand factors in the short run.
- The aggregate demand curve depicts the relationship between the price level and total demand for real output in the economy. The aggregate demand curve is downward sloping because of the wealth effect, the interest rate effect, and the international trade effect.
- Decreases in taxes, increases in government spending, and increases in the supply of money all increase aggregate demand and shift the aggregate demand curve to the right. Increases in taxes, decreases in government spending, and decreases in the supply of money all decrease aggregate demand and shift the aggregate demand curve to the left. In general, anything (other than price movements) that increases the demand for total goods and services will increase aggregate demand.
- The total shift in the aggregate demand curve is greater than the initial shift. The ratio of the total shift in aggregate demand to the initial shift in aggregate demand is known as the multiplier.
- The aggregate supply curve depicts the relationship between the price level and the level of output that firms supply in the economy. Output and prices are determined at the intersection of the aggregate demand and aggregate supply curves.
- The long-run aggregate supply curve is vertical because, in the long run, output is determined by the supply of factors of production. The short-run aggregate supply curve is fairly flat because, in the short run, prices are largely fixed, and output is determined by demand. The costs of production determine the position of the short-run aggregate supply curve.
- Supply shocks can shift the short-run aggregate supply curve.
- As costs change, the short-run aggregate supply curve shifts in the long run, restoring the economy to the full-employment equilibrium.
Learning Objectives

1. Explain the role sticky wages and prices play in economic fluctuations.
2. List the determinants of aggregate demand.
3. Distinguish between the short-run and long-run aggregate supply curves.
4. Describe the adjustment process back to full employment.

9.1 Sticky Prices and Their Macroeconomic Consequences

What causes economic fluctuations? The price system serves as a coordinating mechanism in the economy. When prices and wages are flexible and adjust quickly, prices signal to markets what should and should not be produced. Equilibrium is restored, and resources are efficiently allocated to their best use. But what if prices are not flexible and don’t adjust quickly? That is the issue with sticky prices.

Sticky prices happen when prices don’t immediately adjust to changing market conditions. If prices are not flexible and stick, then market coordination doesn’t work efficiently, causing economic fluctuations. Economic fluctuations are adjustments the economy makes as it returns to equilibrium. The fluctuation may be an abnormal increase in production like an economic boom or an abnormal decrease in production such as a recession.

Some of you drive a car with a manual transmission or a stick shift. Have you ever had a time when you get stuck in a gear or can’t find a gear to shift into? The gears grind. You can’t change speeds and, if prolonged, start to slow down. The price system is like the gear mechanism in a car. When it moves fluidly and without sticking, then the car runs smoothly. The price system operates in a similar fashion. When it works, prices coordinate economic activity precisely. However, when prices stick like the gears, then the economy doesn’t allocate resources to their best use.

Wages are often sticky as they don’t adjust immediately. Wage stickiness may be caused by union contracts or occupations that don’t change wages except once a year. Wage stickiness can be found in the wages of college professors and government workers because their wages are set once a year regardless of market conditions. Suppose that an automobile firm hires union workers under a contract that fixes their wages for a specific period. If the economy suddenly thrives at some point during that period, the automobile company will employ all the workers and perhaps require some to work overtime. If the economy stagnates at some point during that period, the firm will lay off some workers, using only part of the union labor force. Notice that demand for labor becomes the coordinating factor instead of the wages. Since a firm’s major input cost is wages, output prices may also remain sticky. In the short run, supply and demand are hampered and may not reach equilibrium.

Caution!

Demand—not prices—drives the production of inputs and products in the short run.

If the demand for inputs, such as labor or machines, is sustained over a long period of time, then prices may adjust to the new level of sustained demand.

To summarize, the short run in macroeconomics is the period in which prices do not change or do not change very much. In the macroeconomic short run, both formal and informal contracts between firms mean that changes in demand will be reflected primarily in changes in output, not prices.
Let’s review an Application that answers a key question:

1. What does the behavior of prices in consumer markets demonstrate about how quickly prices adjust in the U.S. economy?

APPLICATION 1: MEASURING PRICE STICKINESS IN CONSUMER MARKETS
University of Chicago economist Anil Kashyap investigated prices of various outdoor products. He found considerable price stickiness. Prices of the goods that he tracked such as shoes, blankets, chamois shirts, binoculars, and a fishing rod and fly were typically fixed for a year or more. Mark Bils and Peter Klenow examined how frequently prices changed for 350 consumer goods. They found that the prices of half of their goods lasted less than 4.3 months.

Another place where prices are sticky is at restaurants. Prices of restaurant meals don’t change too often when economic changes occur. There are costs associated with changing menus. Those prices are sticky and don’t change when there is a change in the market. In that case, people demand what is on the menu, and prices are not negotiated. Yet, not all prices are sticky. Sometimes there is some price flexibility. Seafood such as lobster or crab have “market price” listed on the menu. The price of lobster or crab may vary from day to day due to market conditions, but the menu cost didn’t change.

9.2 Understanding Aggregate Demand

In this section, we develop a graphical tool known as the aggregate demand curve. Later in the chapter, we will develop the aggregate supply curve. Together the aggregate demand and aggregate supply curves form an economic model that will enable us to study how output and prices are determined in both the short run and the long run.

Aggregate demand is the total demand for goods and services in an entire economy. In other words, it is the demand for currently produced GDP by consumers, firms, the government, and the foreign sector. The aggregate demand curve (AD) shows the relationship between the level of prices and the quantity of real GDP demanded. Figure 9.1 shows an aggregate demand curve. The curve plots the total demand for GDP as a function of the price level.

Remember

The price level is the average price in the economy, as measured by a price index.

The aggregate demand curve is downward sloping. As the price level falls, the total quantity demanded for goods and services increases. As you studied in Chapter 5, consumption spending (C), investment spending (I), government purchases (G), and net exports (NX) are the four parts of aggregate demand. The aggregate demand curve describes the demand for total GDP at different price levels.
Price level changes cause changes in purchasing power throughout the economy. Recall the key principle from the book:

**Real-Nominal Principle**
What matters to people is the real value of money or income—its purchasing power—not the face value of money or income.

There are three basic reasons for such purchasing power changes leading to changes in aggregate demand:

- **The Wealth Effect:** The wealth effect is an increase in spending that occurs because the real value of money increases when the price level falls. Lower prices lead to higher levels of wealth, and higher levels of wealth increase spending on total goods and services. When the price level rises, consumers can’t simply substitute one good for another that’s cheaper because at a higher price level everything is more expensive.

- **The Interest Rate Effect:** With a given supply of money in the economy, a lower price level will lead to lower interest rates. With lower interest rates, both consumers and firms will find it cheaper to borrow money to make purchases. As a consequence, the demand for goods in the economy will increase.

- **The International Trade Effect:** Price level decreases will make domestic goods cheaper relative to foreign goods. If domestic goods become cheaper than foreign goods, exports will increase and imports will decrease. Thus, net exports—a component of aggregate demand—will increase.

What happens to the aggregate demand curve if a variable other than the price level changes? An increase in aggregate demand means that total demand for all the goods and services contained in real GDP has increased—even though the price level hasn’t changed. In other words, increases in aggregate demand shift the curve to the right.

Conversely, factors that decrease aggregate demand shift the curve to the left—even though the price level hasn’t changed.

- **Caution!**
Anything affecting $C$, $I$, $G$, or $NX$ other than the price level will cause shifts of the aggregate demand curve. Price level changes will cause movement along the aggregate demand curve.

The following are factors that cause shifts of aggregate demand:

- **Changes in the Supply of Money:** At any given price level, a higher supply of money will mean more consumer wealth and an increased demand for goods and services. A decrease in the supply of money will decrease aggregate demand and shift the aggregate demand curve to the left.

- **Changes in Taxes:** A decrease in taxes will increase aggregate demand and shift the aggregate demand curve to the right. An increase in taxes will decrease aggregate demand and shift the aggregate demand curve to the left. Higher taxes will decrease the income available to households and decrease their spending.

- **Changes in Government Spending:** At any given price level, an increase in government spending will increase aggregate demand and shift the aggregate demand curve to the right. Similarly, decreases in government spending will decrease aggregate demand and shift the curve to the left.
• **All Other Changes in Demand**: Increases in net exports will increase aggregate demand, shifting the curve to the right. Decreases in net exports will decrease aggregate demand, shifting to the left. Other variables may increase or decrease aggregate demand. For example, expectations of the future will cause changes in aggregate demand. If the future looks bleak, then firms may not want to expand and thus decrease private investment expenditures. Aggregate demand would decrease, shifting the curve to the left. On the other hand, optimistic expectations may cause firms to expand and thus increase private investment expenditures. Aggregate demand would increase, shifting the curve to the right.

Figure 9.2 shows how aggregate demand curves shift and what causes changes in aggregate demand.

**Study Tip**

Take some time to study Table 9.1 to know how different variables cause aggregate demand changes.

Take a look at Figure 9.3. Notice the total shift in the aggregate demand curve from $a$ to $c$ in Figure 9.3 is greater than the initial shift in the curve from $a$ to $b$. This is the multiplier in action. So what is the multiplier? The **multiplier** is the ratio of the total shift in aggregate demand to the initial shift in aggregate demand. In other words, an initial expenditure will generate additional spending. For example, suppose the government increases spending for government services such as education. Those services will generate income for households. Households will wish to spend, or consume, part of that income, which will further increase aggregate demand. It is this additional spending by consumers, over and above what the government has already spent, that causes the further shift in the aggregate demand curve. Figure 9.3 shows how the multiplier shifts aggregate demand.

Knowing the value of the multiplier is important for two reasons:

- First, it tells us how much shocks to aggregate demand are amplified.
- Second, to design effective economic policies to shift the aggregate demand curve, we need to know the value of the multiplier to measure the proper “dose” for policy.

To understand how the multiplier works in detail, you need to understand the following equations:

**Key Equations**

Consumption Function: $C = C_a + by$, where $C_a$ is autonomous consumption expenditures, $b$ is the marginal propensity to consume (MPC), and $y$ is income.

$$\text{MPC} = \frac{\text{additional consumption}}{\text{additional income}}$$

$$\text{MPS} = \frac{\text{additional saving}}{\text{additional income}}$$

$$\text{MPC} + \text{MPS} = 1$$

$$\text{Multiplier} = \frac{1}{1 - \text{MPC}}$$
As stated in the Key Equations box, consumption expenditures can be broken into two pieces. **Autonomous consumption spending** is the part of consumption expenditures that does not depend on income. The other term in the consumption function is spending that changes when income changes. The **marginal propensity to consume**, or MPC, is the fraction of additional income spent on consumption goods. The remaining fraction of additional income is saved, and is called the **marginal propensity to save**, or MPS.

The multiplier is mainly a function of the MPC. The greater the MPC, the larger the multiplier. The smaller the MPC, the smaller the multiplier. A good example of how to compute the MPC and MPS is shown on page 193 of the text.

Table 9.2 illustrates how the multiplier impacts aggregate demand with an initial government expenditure of $10 million. This analysis is carried out until all income is spent. There is an easier way to calculate the size of the multiplier. The last equation of the previous Key Equations box computes the size of the multiplier.

Let’s review an Application that answers key a question:

2. How can we determine what factors cause recessions?

**APPLICATION 2: TWO APPROACHES TO DETERMINING THE CAUSES OF RECESSIONS**

Recessions can occur either because of a decrease in aggregate demand, or a decrease in aggregate supply. Determining which of these caused a particular recession is a challenge. Economists have two primary approaches. One uses economic models and recognizes that demand shocks should only affect prices in the long run, while supply shocks affect output in the long run. Other economists use historical methods to understand what caused a particular recession.

### 9.3 Understanding Aggregate Supply

The **aggregate supply curve (AS)** shows the relationship between the level of prices and the total quantity of output supplied. To determine both the price level and real GDP, we need to combine both aggregate demand and aggregate supply. Since prices are sticky in the short run but can be flexible in the long run, we will be deriving two different AS curves to represent those conditions.

There are two aggregate supply curves that we need to understand, the long-run aggregate supply curve and the short-run aggregate supply curve. They will both be used to analyze macroeconomic activity. The **long-run aggregate supply curve** is a vertical aggregate supply curve that represents the idea that in the long run, output is determined solely by the factors of production and technology. The reason the curve is vertical is based on the premise that a fully employed economy will produce a fixed amount of output regardless of prices as shown in Figure 9.4.

We combine the aggregate demand curve and the long-run aggregate supply curve in Figure 9.5. The intersection of an aggregate demand curve and an aggregate supply curve determines the price level and equilibrium level of output. At that intersection point, the total amount of output demanded will just equal the total amount supplied by producers—the economy will be in macroeconomic equilibrium.
Study Hint

In the long run, aggregate demand only determines the price level. The level of output is completely determined by the quantities of factors of production and the production technology available in the economy.

In the long run, an increase in aggregate demand will raise prices but leave the level of output unchanged. In general, shifts in the aggregate demand curve in the long run do not change the level of output in the economy, but only change the level of prices.

Remember

In the long run, output is determined solely by the supply of human and physical capital and the supply of labor, not by the price level.

Figure 9.6 shows the short-run aggregate supply curve (AS). The short-run aggregate supply curve is a relatively flat aggregate supply curve that represents the idea that prices do not change very much in the short run and that firms adjust production to meet demand. The short-run aggregate supply curve has a small upward slope. As firms supply more output, they increase prices only slightly due to sticky prices. We previously discussed that with formal and informal contracts firms will supply all the output that is demanded with only relatively small changes in prices.

The intersection of the AD and AS curves at point $a_0$ determines the price level and the level of output. Because the aggregate supply curve is flat, aggregate demand primarily determines the level of output. In Figure 9.6, as aggregate demand increases, the new equilibrium will be at a slightly higher price, and output will increase from $y_0$ to $y_1$.

Let’s review an Application that answers a key question:

3. Are oil price increases caused by true shocks to supply?

APPLICATION 3: OIL SUPPLY DISRUPTIONS, SPECULATION AND SUPPLY SHOCKS

This Application suggests that most of the variability in oil prices does not come from supply shocks. Research suggests that speculation may have an important role in determining oil prices, but that speculation will typically smooth the price of oil over time.

Supply shocks are external events that shift the aggregate supply curve. Figure 9.7 illustrates an adverse supply shock that raises prices. The short-run aggregate supply curve shifts up with the supply shock because firms will supply their output only at a higher price. The AS curve shifts up, raising the price level and lowering the level of output from $y_0$ to $y_1$. Adverse supply shocks can therefore cause a fall in real output with increasing prices. This phenomenon is known as stagflation.
9.4 From the Short Run to the Long Run

In Figure 9.8, we show the aggregate demand curve intersecting the short-run aggregate supply curve at an output level $y_0$. We also depict the long-run aggregate supply curve in this figure. The level of output in the economy, $y_0$, exceeds the level of potential output, $y_p$. In other words, this is a boom economy: Output exceeds potential output.

- **Remember**
  Potential output is the output level produced by a full-employment economy.

- **Study Tip**
  The only way to get better at graphs is to draw them. You should draw and label this graph enough times that it becomes comfortable to you.

What happens during a boom? Because the economy is producing at a level beyond its long-run potential, the level of unemployment will be very low. This will make it difficult for firms to recruit and retain workers. As firms compete for labor and raw materials, the tendency will be for both wages and prices to increase over time. Increasing wages and prices will shift the short-run aggregate supply curve to the left.

Figure 9.9 shows how the short-run aggregate supply curve shifts upward over time. As the economy adjusts, there will be continuing competition for labor and raw materials that will lead to continuing increases in wages and prices. The reason there may be more than one short-run equilibrium, as the economy moves to the long run, is due to sticky prices.

In the long run, the short-run aggregate supply curve will keep rising until it intersects the aggregate demand curve at $a_1$. At this point, the economy reaches the long-run equilibrium—precisely the point where the aggregate demand curve intersects the long-run aggregate supply curve.

- **In this model, the long-run aggregate supply function acts like an attracting magnet. The short-run condition may move away from the long-run equilibrium but will be attracted by economic forces back to long-run equilibrium.**

In summary:

If $y_0 > y_p$, => unemployment ↓ => wages and prices↑ => short run AS ↓ => $y$ ↓ to $y = y_p$

If $y_0 < y_p$, => unemployment ↑ => wages and prices↓ => short run AS ↑ => $y$ ↑ to $y = y_p$

**Activity**

Calculate the multiplier for the following MPC and MPS information:

a. MPC = 0.6  
b. MPC = 0.75  
c. MPC = 0.8  
d. MPS = 0.1  
e. MPS = 0.5  
f. MPS = 0.8
Answers
a. 2.5
b. 4.0
c. 5.0
d. 10.0
e. 2.0
f. 1.25

Key Terms

Aggregat

Aggregate demand curve (AD): A curve that shows the relationship between the level of prices and the quantity of real GDP demanded.

Aggregate supply curve (AS): A curve that shows the relationship between the level of prices and the quantity of output supplied.

Autonomous consumption spending: The part of consumption spending that does not depend on income.

Consumption function: The relationship between the level of income and consumer spending.

Long-run aggregate supply curve: A vertical aggregate supply curve that represents the idea that in the long run, output is determined solely by the factors of production and technology.

Marginal propensity to consume (MPC): The fraction of additional income that is spent.

Marginal propensity to save (MPS): The fraction of additional income that is saved.

Multiplier: The ratio of the total shift in aggregate demand to the initial shift in aggregate demand.

Short run in macroeconomics: The period of time in which prices do not change or do not change very much.

Short-run aggregate supply curve: A relatively flat aggregate supply curve that represents the idea that prices do not change very much in the short run and that firms adjust production to meet demand.

Stagflation: A decrease in real output with increasing prices.

Supply shocks: External events that shift the aggregate supply curve.

Wealth effect: The increase in spending that occurs because the real value of money increases when the price level falls.
Practice Quiz

(Answers are provided at the end of the Practice Quiz.)

1. According to Keynesian analysis,
   a. wages adjust rapidly and this causes prices to rapidly change as well.
   b. wages adjust slowly and this causes prices to rapidly change in compensation.
   c. wages adjust slowly and this causes prices to slowly change as well.
   d. wages adjust rapidly and this causes prices to slowly change in compensation.

2. An economy is more likely to avoid economic fluctuations if
   a. prices adjust slowly.
   b. prices adjust quickly.
   c. prices don’t send signals to producers and consumers.
   d. prices prevent economic coordination.

3. Which of the following statements is correct?
   a. Flexible wages lead to sticky prices and hamper the economy’s ability to bring demand and supply into balance in the short run.
   b. Sticky wages cause sticky prices and hamper the economy’s ability to bring demand and supply into balance in the short run.
   c. Sticky wages and sticky prices are an important aspect of economic stability, bringing demand and supply into balance in the long run.
   d. In order to bring supply and demand into balance in the long run, flexible wages and prices must become sticky wages and prices.

4. According to the textbook discussion of the macroeconomic consequences of sticky prices, in the macroeconomic short run, both formal and informal contracts between firms mean that
   a. changes in supply will be reflected primarily in changes in prices, not output.
   b. changes in demand will be reflected primarily in changes in output, not prices.
   c. changes in supply and demand will be reflected in changes in prices, not output.
   d. changes in factors other than supply and demand will be reflected in changes in output, not prices.

5. Which components of GDP are also components of aggregate demand?
   a. consumption and investment
   b. government spending and net exports
   c. all of the above
   d. none of the above

6. The increase in spending that occurs because the real value of money increases when the price level falls is called
   a. the wealth effect.
   b. the interest rate effect.
   c. the foreign trade effect.
   d. the income effect.
7. A higher domestic price level will result in
   a. higher imports.
   b. higher exports.
   c. probably both higher imports and higher exports.
   d. higher net exports.

8. Refer to the figure below. An increase in government spending, all else the same, will shift the AD curve from the initial AD curve to the curve labeled
   - Increased AD.
   - Decreased AD.
   - Neither curve because government spending does not affect the AD curve.
   - Either curve, depending on the simultaneous changes in taxation.

9. Refer to the figure below. Which of the following best represents the impact of a decrease in government spending through the multiplier process?
   a. the shift from $a$ to $b$, and then to $c$
   b. the shift from $b$ to $c$, and back to $a$
   c. the shift from $b$ to $a$, and then to $c$
   d. the shift from $c$ to $b$, and then to $a$

10. Consider the consumption function $C = C_a + bY$. Which part of this function is called the autonomous consumption spending?
   a. $C_a$
   b. $b$
   c. $bY$
   d. $C_a + bY$

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11. The aggregate supply curve depicts the relationship between
   a. the number of firms in the economy and the corresponding level of output produced.
   b. the level of prices and the total quantity of final goods and services that firms are willing and able
to supply.
   c. the number of firms in the economy and the corresponding level of prices.
   d. the number of firms, the number of workers, and the quantity of final goods that both firms and
workers together can supply to the entire economy.

12. In the long run, the level of output is
   a. independent of the price level.
   b. dependent solely on the supply factors.
   c. the full-employment level of output.
   d. all of the above.

13. In the short run, lower aggregate demand will cause
   a. a large decrease in the price level, but no change in the level of output.
   b. a lower price level, but only a slight decrease in the level of output.
   c. a lower level of output, but only a slight decrease in the price level.
   d. a large decrease in both the price level and the level of output.

14. Refer to the figure below. The situation of this economy after the supply shock can be called

![Graph showing aggregate supply (AS) and aggregate demand (AD)]

   a. insufficient demand.
   b. economic growth.
   c. stagflation.
   d. excess supply.
15. Refer to the figure below. In this economy there will be a tendency for

![Aggregate Demand and Aggregate Supply Diagram]

a. prices to fall and wages to rise over time.
b. prices to rise and wages to fall over time.
c. both wages and prices to rise over time.
d. both wages and prices to fall over time.

16. This question tests your understanding of Application 1 in this chapter: Price stickiness in retail catalogs. What does the behavior of prices in retail catalogs demonstrate about how quickly prices adjust in the U.S. economy?

To analyze the behavior of retail prices, economist Anil Kashyap of the University of Chicago examined prices in consumer catalogs. Kashyap tracked several goods over time, including several varieties of shoes, blankets, chamois shirts, binoculars, and a fishing rod and fly. He found that

a. the prices of the goods he tracked changed substantially over time; there was considerable price flexibility.
b. when prices did change, the changes were always relatively small.
c. prices of the goods that he tracked were typically fixed for a year or more.
d. during periods of high inflation, prices tended to change less frequently.

17. Describe the phenomenon of economic fluctuations and articulate Keynes’s opinion of the causes that led to the Great Depression.

18. Explain why an aggregate demand curve slopes downward.

19. Explain the logic of the multiplier according to J.M. Keynes.

20. Explain how output and the price level are determined in the long run.
Answers to the Practice Quiz

1. c. In the Keynesian model, wages adjust slowly, causing prices to slowly change as well.

2. b. The price system does not always work instantaneously. If prices are slow to adjust, then the proper signals are not given quickly enough to producers and consumers.

3. b. This statement reflects sticky prices and their macroeconomic consequences. Sticky wages cause sticky prices and hamper the economy’s ability to bring demand and supply into balance in the short run.

4. b. In the macroeconomic short run, both formal and informal contracts between firms mean that changes in demand will be reflected primarily in changes in output, not prices.

5. c. In our study of GDP accounting, we divided GDP into four components: Consumption spending (C), investment spending (I), government purchases (G), and net exports (NX). These four components are also four parts of aggregate demand because the aggregate demand curve really just describes the demand for total GDP at different price levels.

6. a. The increase in spending that occurs because the real value of money increases when the price level falls is called the wealth effect.

7. a. A higher price level makes domestic goods more expensive relative to foreign goods. As domestic goods become more expensive, exports will fall and imports will rise, thereby making the trade balance worse.

8. a. A decrease in taxes, an increase in government spending, or an increase in the money supply will result in an increase in aggregate demand.

9. d. Initially, the shift from c to b equals the decrease in government spending. But after a brief period of time, total aggregate demand will decrease by more than the initial decrease in government spending, over to a.

10. a. Autonomous consumption spending is a constant and independent of income (y).

11. b. The aggregate supply curve depicts the relationship between the level of prices and the total quantity of final goods and services that firms are willing and able to supply.

12. d. In the long run, the level of output, y*, is independent of the price level. Output depends solely on the supply factors—capital, labor—and the state of technology. In the long run, the economy operates at full employment and changes in the price level do not affect this.

13. c. In the short run, firms are assumed to supply all the output demanded, with small changes in prices. The short run aggregate supply curve has a small upward slope. Lower aggregate demand will cause a lower level of output, and only a slight decrease in the price level.

14. c. Supply shocks are external events that shift the aggregate supply curve. Adverse supply shocks can cause a recession (a fall in output) with increasing prices. This phenomenon is known as stagflation.
15. c. Aggregate demand intersects the short-run aggregate supply curve at an output level that exceeds the potential level of output. In other words, this is a boom economy. As firms compete for labor and raw materials, there will be a tendency for both wages and prices to increase over time.

16. c. Kashyap found considerable price stickiness. Prices of the goods that he tracked were typically fixed for a year or more (even though the catalogs came out every six months).

17. Economic fluctuations, also called business cycles, are movements of GDP away from potential output. Insufficient demand for goods and services was a key problem of the Great Depression, identified by British economist John Maynard Keynes in the 1930s. Led by Keynes, many economists since his time have focused attention on economic coordination problems. The price system does not always work instantaneously. If prices are slow to adjust, then the proper signals are not given quickly enough to producers and consumers.

18. An aggregate demand curve slopes downward, meaning that a lower price level will result in a higher level of aggregate spending. There are three reasons for the increase in spending, as follows: The increase in spending that occurs because the real value of money increases when the price level falls is called the wealth effect. The interest rate effect: With a given money supply in the economy, a lower price level will lead to lower interest rates and higher consumption and investment spending. The impact of foreign trade: A lower price level makes domestic goods cheaper relative to foreign goods.

19. The logic of the multiplier goes back to Keynes. He believed that as government spending increases and the aggregate demand curve shifts to the right, output will subsequently increase too. Increased output also means increased income for households and higher consumption. It is this additional consumption spending that causes the further shift in the aggregate demand curve.

20. The intersection of aggregate demand and aggregate supply determines the price level and the equilibrium level of output. In the long run, an increase in aggregate demand will raise prices but leave the level of output unchanged. In the long run, output is determined solely by the supply of capital and the supply of labor, not the price level.