industry declined when the use of cellular phones increased. The video rental store industry shrank as the DVD rental by mail industry and satellite and cable television companies became more widespread.

The causes of the rise and fall of industries can be traced to new ideas such as overnight delivery, to new cost-reducing technologies such as the Internet or DVDs, or to changes in consumer tastes. This latter shift, for example, is one reason behind the widespread popularity of low-carbohydrate diets, which favor reducing the intake of foods like bread and pasta in favor of high-protein foods like meat and cheese, providing an unexpected boost for meat producers. Some industries have recurring ups and downs. The oil tanker shipping industry, for example, regularly expands when oil demand increases and declines when oil demand falls.

In this chapter, we develop a model to explain the behavior of whole industries over time. We examine how economic forces cause industries to adjust to new technologies and to shifts in consumer tastes. Changes in the industry then occur as firms either enter or exit the industry. The initial forces causing an industry to rise or fall are described by shifts in a cost curve or a demand curve. Our analysis assumes that the firms are operating in competitive markets. The central task of this chapter is to show how an industry grows or contracts as firms enter or exit the industry. Do profits of individual firms fall or rise as a result? Do the prices consumers pay increase or decrease?

Markets and Industries

We begin this analysis by providing a brief definition of what an industry is and by giving some examples of different industry types. An industry is a group of firms producing a similar product. The cosmetics industry, for example, refers to the firms producing cosmetics. The term market sometimes is used instead of industry. For example, the phrases “the firms in the cosmetics industry” and “the firms in the cosmetics market” typically mean the same thing. But the term market also can refer to the consumers who buy the goods and to the interaction of the producers and the consumers. Both firms and consumers are in the cosmetics market, but only firms are in the cosmetics industry.

Firms in an industry can produce services such as overnight delivery or overnight accommodations as well as manufactured goods. Many industries are global. Firms in the United States compete with firms in Japan, Europe, and elsewhere. Reduced transportation and communication costs in recent years have made many industries global. Until competition from Europe and Japan intensified years ago, the automobile industry in the United States consisted mainly of three firms—General Motors, Ford, and Chrysler. Now the industry is truly global, with Honda, Toyota, Hyundai, and Nissan selling cars in the United States, and Ford and General Motors selling cars throughout the world.

The Long-Run Competitive Equilibrium Model of an Industry

The model we develop to explain the behavior of industries assumes that firms in the industry maximize profits and that they are competitive. As in the competitive equilibrium model of Chapter 7, individual firms are price-takers; that is, they cannot affect the price. But to explain how the industry changes over time, in this chapter, we add
something new to the competitive equilibrium model. Over time, some firms will enter an industry and other firms will exit an industry. Because the entry and exit of firms takes time, we call this model the **long-run competitive equilibrium model**.

When we use the long-run competitive equilibrium model to explain the behavior of an actual industry, we do not necessarily expect that the industry conforms exactly to the assumptions of the model. A model is a means of explaining events in real-world industries; it is not the real world itself. In fact, some industries are competitive, and some are not competitive. But the model can work well as an approximation in many industries. In Chapters 10 and 11, we will develop alternative models of industry behavior that describe monopoly and the gray area between monopoly and competitive markets. For this chapter, however, we focus on the competitive model. This model was one of the first developed by economists to explain the dynamic behavior of an industry, and it has wide applicability and works well. Moreover, understanding the model will make it easier to understand the alternative models developed in later chapters.

**Setting Up the Model with Graphs**

Figure 9-1 illustrates the demand curve in a competitive market. The left graph views the market from the perspective of a single typical firm in an industry. The price is on the vertical axis, and the quantity produced by the single firm is on the horizontal axis. The assumption of a competitive firm implies that the firm faces a given price level, represented by a flat demand curve.

The market demand curve for the goods produced by the firms in the industry is shown in the right graph of Figure 9-1. The price is also on the vertical axis of the graph on the right, but the horizontal axis measures the *whole market or industry* production. Notice that even though the single firm takes the price as given, the market demand curve is downward sloping because it refers to the whole market. If the price in the
market rises, then the quantity demanded of the product will fall. If the market price increases, then the quantity demanded will decline.

**Entry and Exit** The new characteristic of competitive markets stressed in this chapter is the **free entry and exit** of firms in an industry. The question firms face is whether to **enter** an industry if they are not already in it or to **exit** from an industry they are in. The decisions are based on profits—total revenue less total costs. If profits are positive, firms have an incentive to enter the industry. If profits are negative, firms have an incentive to exit the industry. When profits are equal to zero, firms have no incentive for either entry or exit.

When firms enter or exit an industry, the entire market or industry supply curve is affected. Recall that the market or industry supply curve is the sum of all the individual firms’ supply curves. With more firms supplying goods, the total quantity of goods supplied increases at every price. Thus, more firms in the industry means that the market supply curve shifts to the right; fewer firms in the industry means that the market supply curve shifts to the left.

**Long-Run Equilibrium** Figure 9-2 is a two-part diagram that shows the profit-maximizing behavior of a typical firm along with the market supply and demand curves. This diagram is generic; it could be drawn to correspond to the numeric specifications of the grape industry or any other industry. The left graph shows the cost curves of the

**Figure 9-2**

**Long-Run Equilibrium in a Competitive Market**
The left graph shows the typical firm’s cost curves and the market price. The right graph shows the market supply and demand curves. The price is the same in both graphs because the market has a single price. The price is at a level at which profits are zero because price equals average total cost.
typical firm in the industry with their typical positions: Marginal cost cuts through the average total cost curve at its lowest point. We did not draw in the average variable cost curve to keep the diagram from getting too cluttered.

The left and right graphs of Figure 9-2 are drawn with the same market price, and this price links the two graphs together. This market price, which the individual firm takes as given, is determined by the market supply and demand curves, which are shown to the right of the cost curve diagram in Figure 9-2. As in Figure 9-1, even though the vertical axis on each graph shows the same price, the horizontal axes have different units, with an inch on the horizontal axis of the right-hand diagram representing much more production than an inch on the horizontal axis in the left-hand diagram.

The graphs are set up so that the price at the intersection of the market supply and demand curves is at a level that touches the bottom of the average total cost curve on the left graph. We know from Chapter 8 that profits are zero when $P = ATC$. Because profits are zero, firms have no incentive to either enter or exit the industry. This situation, in which profits are zero and there is no incentive to enter or exit, is called a long-run equilibrium.

An Increase in Demand

How does this long-run equilibrium come about? We can illustrate by examining what happens when demand shifts—for example, suppose the demand for grapes increases. We show this increase in demand in the top right graph of Figure 9-3; the market demand curve shifts out from $D$ to $D'$. 

Short-Run Effects  Focus first on the top part of Figure 9-3, representing the short run. As the demand curve shifts out, we move up along the supply curve to a new intersection of the market supply curve and the market demand curve at a higher price, $P'$. 

The implications of the rise in the market price for the individual firm are shown in the top left graph, where the price line is moved up from $P$ to $P'$. A profit-maximizing firm already in the industry will produce more because the market price is higher. This result is seen in the top left graph of Figure 9-3; the higher price intersects the marginal cost curve at a higher quantity of production. Note also—and this is crucial—that at this higher price and higher level of production, the typical firm is now earning profits, as shown by the shaded rectangle in the top left graph. Price is above average total cost, and so profits have risen above zero.

We have gone from a situation in which profits were zero for firms in the industry to a situation in which profits are positive. This shift has created a profit opportunity in the market, encouraging new firms to enter the industry. Thus, we have moved away from a long-run equilibrium (which was defined as a situation in which profits are zero and firms have no incentive to enter or exit) because of the disturbance that shifted the market demand curve.

Toward a New Long-Run Equilibrium  Now focus on the two graphs in the bottom part of Figure 9-3, representing what happens in this industry in the long run. In the lower right-hand graph, the supply curve for the whole industry or market shifts to the right from $S$ to $S'$. Why? Because the market supply curve is the sum of the individual supply curves; as more firms, attracted by higher profits, enter the industry, they add to supply.

The rightward shift in the supply curve causes a reduction in the price below $P'$, where it was in the short run. The price will continue adjusting until the price line just touches the bottom of the average total cost curve, where average total cost equals marginal cost. At this point, profits will again be zero, no new firms have the incentive to enter, and the industry will be in long-run equilibrium. Of course, this adjustment to a

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**long-run equilibrium** a situation in which entry into and exit from an industry are complete and economic profits are zero, with price ($P$) equal to average total cost ($ATC$).
The Rise of an Industry after a Shift in Demand

The diagrams at the top show the short run. A shift in the demand curve to the right causes the price to rise from $P$ to $P'$; each firm produces more, and profits rise. Higher profits cause firms to enter the industry. The diagrams at the bottom show the long run. As firms enter, the market supply curve shifts to the right, and the price falls back to $P$. New entry does not stop until profits return to zero in the long run.
new long-run equilibrium takes time. It takes time for firms to decide whether or not to go into business, and it takes time to set up a firm once a decision is made.

The new long-run equilibrium for the typical firm is shown in the lower left graph. It may take several years for an industry to move from the top of Figure 9-3 to the bottom. In fact, it would be more accurate to draw several rows of diagrams between the top and the bottom, showing how the process occurs gradually over time. These additional rows could show more and more firms entering the industry with the price falling until eventually profits are zero again and the incentive to enter the market disappears. The market supply curve will shift to the right until the price comes back to the point where average total cost is at a minimum, profits are zero, and no firms will enter or exit the industry.

A Decrease in Demand

The long-run competitive equilibrium model also can be used to explain the decline of an industry. Suppose the demand curve shifts from \( D \) to \( D' \), as illustrated in the top right graph in Figure 9-4. This change in demand causes the market price to fall. The lower market price \( (P') \) causes existing firms to cut back on production in the short run: At the new lower price, the individual firm depicted in the top left panel of Figure 9-4 is now running losses.

Over time, with profits less than zero, firms have an incentive to leave the industry. As they leave, the market supply curve shifts to the left from \( S \) to \( S' \), as shown in the bottom right graph of Figure 9-4. This causes the price to rise again. The end of the process is a new long-run equilibrium, as shown in the bottom left graph of Figure 9-4. In the long run, fewer firms are in the industry, total production in the industry is lower, and profits are back to zero.

Economic Profits versus Accounting Profits  It is important at this point to emphasize that the economist’s definition of profits is different from an accountant’s definition. When you read about the profits of Motorola in the newspaper, it is the accountant’s definition that is being reported. Nothing is wrong with the accountant’s definition of profits, but it is different from the economist’s definition. When an accountant calculates profits for a firm, the total costs do not include the opportunity cost of the owner’s time or the owner’s funds. Such opportunity costs are implicit: The wage that the owner could get elsewhere and the interest that could be earned on the funds if they were invested elsewhere are not explicitly paid, and the accountant therefore ignores them. When computing accounting profits, such implicit opportunity costs are not included in total costs. When computing economic profits—the measure of profits economists use—implicit opportunity costs are included in total costs. Economic profits are equal to accounting profits less any opportunity costs that the accountants did not include when measuring total costs.

For example, suppose accounting profits for a movie rental store are $40,000 a year. Suppose the owner of the store could earn $35,000 a year running a bakery. Suppose also that the owner could sell the business for $50,000 and invest the money in a bank, where it would earn interest at 6 percent per year, or $3,000. Then the opportunity cost—which the accountant would not have included in total costs—is $38,000 ($35,000 plus $3,000). To get economic profits, we have to subtract this opportunity cost from accounting profits. Thus, economic profits would be only $2,000.

Economic profits are used by economists because they because these profits measure the incentive that the owner of the firm has to stay in business rather than do something else. In this case, with $2,000 in economic profits, the owner has an incentive to stay in the business. But if the owner could earn $39,000 running a bakery, then economic profits for
The Decline of an Industry after a Shift in Demand
In the short run, a reduction in demand lowers the price from $P$ to $P'$ and causes losses. Firms leave the industry, causing prices to rise back to $P$. In the long run, profits have returned to zero, the number of firms in the industry has declined, and the total quantity produced in the industry has fallen.
The Rise of the DVD Rental Industry (and Its Impending Fall?)

One of the industries that has seen a remarkable change over the past two decades has been the home entertainment industry. In the mid-1980s, Blockbuster revolutionized the video rental industry with stores that provided an extensive collection of movies on videotape, both new releases and popular classics. The firm grew extremely rapidly, expanding into video game rentals and then into DVD rentals as technological advances made DVDs the preferred mode of home movie watching. Blockbuster grew into a multibillion dollar company and its owner Wayne Huizenga became a billionaire, who at one point owned three major league sports franchises: the Miami Dolphins (NFL), the Florida Marlins (MLB), and the Florida Panthers (NHL). The blue and yellow Blockbuster sign became ubiquitous in many middle-class towns and neighborhoods in the United States. Other movie rental franchises, like Hollywood Video and Tower Records, followed the Blockbuster model of brightly lit stores displaying dozens of copies of new releases for consumers to rent.

The technological development of the DVD would prove to be the demise of Blockbuster and other video stores. Unlike videotapes, DVDs (especially when not in a bulky case) were easy to ship by mail. An upstart company called Netflix changed the movie rental business for good when it entered the market with a new service that allowed consumers to rent movies by mail. The idea behind Netflix’s business model was simple—the movies would be delivered to your home saving you a trip to the video store, no late penalties were charged (a common complaint among Blockbuster customers), the selection of different titles was vast because Netflix only had to maintain a few large centralized distribution points, instead of stocking titles in stores with limited space in every neighborhood. There were other technological innovations, including a movie recommendation system that made suggestions about titles that the customer would like, a movie reviewing system where you could see other users’ ratings, and a rental queue where the customer could stack up a collection of movies that they would like to watch, thus creating a library from which Netflix would send you movies to watch. Netflix revolutionized the industry much like Blockbuster had. In a short time span, the red and white Netflix envelope became just as ubiquitous a sign as the blue and yellow Blockbuster store had been a few short years previously.

Netflix’s success in the movies-by-mail market led to the entry of other firms, most notably Blockbuster and
the movie rental store would be –$2,000 ($40,000 – $39,000 – $3,000), and the owner would have an incentive to leave the movie rental store business, even though accounting profits at the store were $40,000. Thus, economic profits are a better measure of incentives than accounting profits. Because we are interested in the incentives that firms have to either enter or exit an industry, when we refer to profits in this book, we mean economic profits.

Observe that if the storeowner could earn exactly $37,000 at the bakery, then economic profits at the movie rental store would be zero. Then the owner would be indifferent on economic considerations alone between staying in the movie rental business or going to work for the bakery. The term normal profits refers to the amount of accounting profits that exist when economic profits are equal to zero. In this last case, normal profits would be $40,000.

The Equilibrium Number of Firms The long-run equilibrium model predicts that a certain number of firms will be in the industry. The equilibrium number of firms will be such that there is no incentive for more firms to enter the industry or for others to leave. But how many firms is this? If the minimum point on the average cost curve of the typical firm represents production at a small scale, then the industry will have many firms. That is, many firms will each produce a small amount. If the minimum point represents production at a large scale, then the industry will have fewer firms; that is, a few firms will each produce a large amount.

To see this, consider the hypothetical case in which all firms are identical. For example, if the minimum point on the average total cost curve for each firm in the grape...
industry occurs at 10,000 tons and the equilibrium quantity in the whole market is 100,000 tons, then the model predicts that 10 firms will be in the industry. If the quantity at which average total cost is at a minimum is 1,000 tons, then 100 firms will be in the industry. If the demand for grapes increases and brings about a new long-run equilibrium of 130,000 tons, then the number of firms in the industry will rise from 100 to 130 (in the case in which the minimum efficient scale was 1,000 tons) or from 10 to 13 (in the case in which the minimum efficient scale was 10,000 tons).

**Entry or Exit Combined with Individual Firm Expansion or Contraction** Thus far, we have described the growth or decline of an industry in terms of the increase or decrease in the number of firms. Recall from Chapter 8 that, in the long run, a firm can expand its size by investing in new capital or reduce its size by getting rid of some of its capital. So the industry can grow or shrink as a result of changes in the size of existing firms.

In reality, industries usually grow by a combination of the expansion of existing firms and the entry of new firms. Similarly, industries can shrink either because of the exit of firms or because of a contraction in the size of existing firms. For example, when the expedited package express industry began to grow, it grew both because UPS and other firms entered and because FedEx expanded.

The expansion of an existing firm can occur under one of two conditions. First, the original size of the firm may be smaller than the minimum efficient scale, so the firm may be able to lower its average costs while producing more units. Second, a change in technology or in the prices of inputs may change the cost function of the firm, pushing the minimum efficient scale to a larger number of units. Note that if the firm is already producing at the minimum long-run average total cost, then an increase in demand will not affect the size of the firm, and you will observe only entry of new firms into the industry.

**Shifts in Cost Curves**

Our analysis of the rise and fall of an industry thus far has centered around shifts in demand. But new technologies and ideas for new products that reduce costs also can cause an industry to change. The long-run competitive equilibrium model can be used to explain these changes, as shown in Figure 9-5.

The case of cost-reducing technologies—as when Walmart introduced checkout counter scanners—can be handled by shifting down the average total cost curve and the marginal cost curve, as shown in Figure 9-5. This will lead to a situation of positive profits because average total cost falls below the original market price \( P \). If other firms already in the industry adopt similar cost-cutting strategies, the market price will fall to \( P' \), but profits will still be positive, as shown in Figure 9-5. With positive profits, other firms will have incentives to enter the industry with similar technologies. As more firms enter the industry, the market supply curve shifts out. The price falls further to \( P'' \), and eventually competition brings economic profits back to zero.

If new entrants drive economic profits to zero in the long run, then what incentives do firms have to develop cost-cutting technologies? The answer is that the economic profits in the short run can be substantial. Walmart may have made hundreds of millions of dollars in economic profits before the competition eroded the profits away. Hence, Walmart benefited for a while from cost-cutting innovations. No idea will generate economic profits forever in a competitive market, but the short-run profits can provide plenty of incentive.

**Average Total Cost Is Minimized** In the long-run equilibrium, average total cost is as low as technology will permit. You can see this in Figures 9-2, 9-3, 9-4, and 9-5.
Effect of a Reduction in Costs
A new technology reduces costs and shifts the typical firm’s ATC and MC curves down. The market supply curve shifts down by the same amount as the shift in marginal cost if other firms in the industry adopt the new technology right away. But because of the economic profits, new firms have incentives to enter the industry. As shown in the lower left graph, in the long run, profits return to zero.
The Rise of Digital Cameras and the Death of Film

The photographic film industry provides an interesting example of an industry that recently underwent dramatic changes. Photographic film, called silver halide film, was developed more than 100 years ago and can give extremely high resolution and detail. This amazing film technology has brought enjoyment and better health to many millions of people. But in the past decade, digital cameras rose in popularity among consumers, especially as the cost of digital cameras began to fall. Digital cameras are different from older cameras in that they do not use film. With a digital camera, you can take snapshots and load the images directly to a desktop computer. The demand for photographic film processing has declined dramatically as the popularity of digital cameras rose. The article below describes a sentimental milestone in this transformation of an industry.

Kodachrome: The Legendary Film’s Last Days

JIM AXELROD, CBSNEWS.COM

December 26, 2010. CBS News Archives

Professional photographer Kent Miller is up before sunrise making sure everything’s perfect for his photo shoot. He wants to capture a triathlete named Carlos Lema at the foot of the George Washington Bridge just across the river from Manhattan in just the right light at dawn. His film of choice, as it has been for millions of others, is Kodachrome. "Kodachrome is probably the first professional film I ever really shot,” Miller said. A professional photographer for more than 20 years, Miller shoots mostly digital now. But this is a job for film, and not just any film—Kodachrome. “It just reproduces colors in a way that most other films never did, and it lasts forever,” Miller said. “It’s something that is difficult to do with just shooting digital until you bring it in to Photoshop and resaturate and do all your work in there. But just straight out the camera it doesn’t have that density and dynamic ranges as the Kodachrome does just naturally.”

Satisfied as he is with the pictures he’s taken this morning, it’s a poignant day for Kent Miller because these rolls of Kodachrome are the last rolls of Kodachrome he will ever shoot. “I have just been saving it for a special time and this is a special time,” he said. For 75 years, Kodachrome has given millions of us those “nice bright colors” referred to in Paul Simon’s 1973 hit. The first mass-marketed color film, it was popular enough not just to inspire its own song, but to have a state park in Utah—Kodachrome Basin—named after it as well. It was the film of choice for professionals documenting history as well as generations of amateurs preserving their summer vacations and holiday memories on Kodachrome slides.

Todd Gustavson is the curator of technology at the Eastman House—Kodak’s museum in Rochester, N.Y. “It’s a baby boom product,” he said. “After World War II—availability of new automobiles, national parks were open—and people were able to have some time to travel and of course now there is this new color film which you could use to document your family vacations and then of
course come back and show your friends and neighbors your slides on your carousel or Kodak slide projector."

But eventually technology caught up to Kodachrome. In a digital world, there was not enough demand for Kodak to keep making the film. And even if you have a roll or two squirreled away in your fridge, after this coming Friday, December 30—you, or Kent Miller or anyone else—won’t be able to get it developed.

Because on December 30th, Dwayne’s Photo in Parsons, Kan. will stop processing Kodachrome. “So what,” you say? You’ll just send yours somewhere else? No you won’t.

Maybe the best person to explain is Dwayne Steinle himself, who started the business 56 years ago. “There is not going to be any place to process it?”

“No place left in the world to process it; we are the very last in the world in the entire planet,” Steinle says. And Kodachrome isn’t a do-it-yourself kind of film. Those long-lasting brilliant colors are the result of a unique developing process involving special chemicals only Kodak makes—or made to be more precise. It isn’t something you can develop in your basement darkroom. “The real difference between Kodachrome and all the other color films is that the dyes that make up the image you see in the film, in Kodachrome, don’t get incorporated into the film until it is actually developed,” explained Grant Steinle, who now runs the business his father started.

They’re sad at Dwayne’s, but not at all surprised. They’ve been watching their Kodachrome business shrink, even as other labs stopped processing Kodachrome and Dwayne’s became the only place people from around the world could send their film to be developed. They’re still doing 700 rolls a day, but that’s not nearly enough demand to convince Kodak to make more chemicals. They’ve got just enough for another week. “It’s going to be a really sad day, it was an important part of our business and Kodachrome was an important part of the history of all of photography,” Grant Steinle said. “To know it was the first consumer color film that was available. Lots of really iconic images of the 20th century were captured on Kodachrome.”

Steve McCurry captured one—the 12-year-old Afghan girl on the cover of National Geographic in 1984. Actually, he captured two, when he returned to Afghanistan and found her 17 years later. “Kodachrome was my mainstay film, this was the main film I used for 30 year,” McCurry said. “I have about 800,000 Kodachrome transparencies in my archive, maybe more, and this was probably the greatest film ever made.” When Kodak announced it was discontinuing Kodachrome last year, he had an idea. “I called my contacts, my friends at Kodak and said you know I’d really like to get the last roll and do a project with it to kind of honor this passing of this iconic film,” he said. He picked a region in India where he’d come across the perfect subjects.

“I decided to pick a community which was disappearing,” he said. “It was a nomadic community which I spent a week with and traveled with them and photographed their way of life because again, like Kodachrome their way of life is vanishing.” He used most of the last roll of Kodachrome ever made, but saved just a couple of frames, which he shot in Parsons just before dropping the film off at Dwayne’s. The very last image ever made with Kodachrome is a civil war cemetery in Parsons, Kan. “I was going to the lab in the next 15 or 20 minutes and I drove past the cemetery and I thought this would be a sort of perfect ending to the roll of Kodachrome—a cemetery,” McCurry said. “It’s a passing of an era.”

“Progress” is defined as an advancement or improvement, but in some ways it’s hard to see how a world without Kodachrome qualifies as either. But that’s the world Steve McCurry will soon live in, whatever hope his wishful thinking allows him to preserve. He says he still has a few rolls in his fridge. “Just open the fridge and there’s the film and I’ll know it’s safe and sound,” he says. “If they ever bring it back I’m ready to roll.”
In each case, the typical firm produces a quantity at which average total cost is at the minimum point of the firm’s average total cost curve. This amount of production must occur in the long-run equilibrium because profits are zero. For profits to be zero, price must equal average total cost \((P = ATC)\). The only place where \(P = MC\) and \(P = ATC\) is at the lowest point on the \(ATC\) curve. At this point, costs per unit are at a minimum.

That average total cost is at a minimum is an attractive feature of a competitive market in which firms are free to enter and exit. It means that goods are produced at the lowest cost, with the price consumers pay being equal to that lowest cost. If firms could not enter and exit, this attractive feature would be lost.

**Efficient Allocation of Capital among Industries** An efficient allocation of capital among industries also is achieved by entry and exit in competitive markets. Entry of firms into a booming industry, for example, means that more capital has gone into that industry, where it can better satisfy consumer tastes. In the case of a declining industry, capital moves out of the industry to other industries, where it is used more efficiently. Thus, the long-run competitive equilibrium has another attractive property: Capital is allocated to its most efficient use. Again, this property is due to the free entry and exit of firms. If entry and exit were limited or if the market were not competitive for some other reason, this advantage would be lost.

**REVIEW**

- Industries grow and shrink over time, with existing firms expanding or contracting in size, new firms entering the industry, and some existing firms going out of business. The long-run competitive equilibrium model explains how the entry and exit, expansion, and contraction patterns evolve.
- The decision to enter or exit an industry is determined by profit potential. Positive economic profits will attract new firms. Negative economic profits will cause firms to exit the industry. A long-run competitive equilibrium is a situation in which individual firms make zero profits \((P = ATC)\) and no firms enter or exit an industry.
- If a demand increase causes market prices to rise, that increase in price will lead to positive profits for an individual firm in the short run because \(P > ATC\). In response to the positive profit-making opportunity, new firms will enter, causing the market supply curve to shift to the right and causing price to come back down again until the profit-making opportunities have eroded, and the economy returns to long-run competitive equilibrium.
- If a demand decrease causes market prices to fall, that decrease in price will lead to negative profits for an individual firm in the short run because \(P < ATC\). The negative profits increase the incentive for firms to leave the industry, causing the market supply curve to shift to the left. This raises price and reduces the losses incurred by individual firms until the economy returns to long-run competitive equilibrium.
- Similar adjustments take place if changes in technology bring about a shift of the cost curves of individual firms in the economy.
- How many firms are in an industry depends on the minimum efficient scale of the typical firm and the size of the industry. If firms are not operating at minimum efficient scale or if changes in technology make minimum efficient scale larger, then existing firms are likely to grow in size.
- When firms are allowed to freely enter and exit, another advantage is that average total cost is minimized. That goods are produced at the lowest possible cost is another advantage of competitive markets.
- Entry and exit also bring about an efficient allocation of capital. Booming industries will see entry of new firms and expansion of existing ones, which leads to more capital being allocated. Shrinking industries will see exit of firms and shrinking of firm size, which frees up capital for booming industries.
- Throughout this discussion, it is important to keep in mind that the profits being discussed are economic profits rather than accounting profits. Economic profits differ from accounting profits because they include the opportunity costs of the firm owners.