Chapter 7

Market Structures and Market Failures

What happens when markets do not work perfectly?

7.1 Introduction

If you have a cell phone, at some point in the past you may have thought about changing your service provider. Perhaps you wanted to get a new phone that your company did not offer, or maybe you wanted to switch to a cheaper plan. Or perhaps you were annoyed because your provider had raised your rates or altered other terms of your contract. But changing companies might have meant breaking your contract and paying a stiff penalty. So most likely, you swallowed your frustration and did nothing.

Sound familiar? If so, you were not alone. As Bob Sullivan, an investigative reporter specializing in technology and business, has observed, millions of Americans have found themselves stuck in "cell phone jail" with no easy way out. In this situation, says Sullivan in *Gotcha Capitalism* (2007),

> *You don't act like a rational consumer in a normal, functioning market economy. You don't go buy the new phone, or get the cheap new plan. You don't reward the more efficient company with your business. You can't. You're in jail.*
>
> *Imagine if you couldn't switch coffee shops or grocery stores without paying hundreds of dollars in penalties. Preposterous? No—not in the world of cell phones.*

The cell phone service market is structured differently from other markets.

Speaking of Economics

market structure
The organization of a market, based mainly on the degree of competition. There are four basic market structures.

perfect competition
A market structure in which many producers supply an identical product. This is the most efficient structure, with prices set by supply and demand.

monopoly
A market structure in which a single producer supplies a unique product that has no close substitutes. In an unregulated monopoly, the producer sets prices.

oligopoly
A market structure in which a few firms dominate the market and produce similar or identical goods. This structure is more competitive than a monopoly.

monopolistic competition
A market structure in which many producers supply similar but varied products. This structure is the closest to perfect competition.

market failure
A situation in which the market fails to allocate resources efficiently.

externality
A cost or benefit that arises from production or consumption of a good or service that falls on someone other than the producer or consumer.

public goods
Goods and services that are used collectively and that no one can be excluded from using. Public goods are not provided by markets. Examples include national defense and clean air.

Cell phone providers and clothing manufacturers operate in distinctly different markets. Wireless service providers offer consumers few choices and require binding contracts. In contrast, clothing companies give shoppers many choices, with no strings attached.

What is going on here? How could cell phone companies operate differently from, say, coffee shops or grocery stores or car dealerships? The cell phone companies defended their behavior by arguing that they provided phones to their customers at low, subsidized rates. Thus, the companies had to cover the costs of these phones if people were to break their contracts. Although there is some truth to this argument, it is not the real reason people found themselves trapped in cell phone jail. The real reason was that through 2013, a few major companies have dominated the cell phone industry, and these companies all acted pretty much the same.

What about the freewheeling competition that is the hallmark of a market economy? What about the laws of supply and demand? Well, the truth is that even in a free market economy, not all industries and markets are equally competitive, and when they are not equal, it is usually the consumer who suffers.

In this chapter, you will read about various types of markets and how and why they differ. You will also learn about the effects of imperfect and inefficient markets on our economy and society.

7.2 What Is Perfect Competition, and Why Do Economists Like It So Much?

Fortunately, most businesses are more consumer friendly than cell phone companies were when Sullivan wrote his 2007 book. Take T-shirt producers, for example. If you go shopping for a T-shirt, you will find hundreds of colors, styles, and designs to choose from, in a wide range of prices. The T-shirt industry is very competitive, with many different producers. It is apparent that cell phone service providers and T-shirt producers operate in different markets, with different levels of competition. What accounts for these differences?

The Characteristics That Define Market Structure

An economist would answer those questions by pointing out that the T-shirt and cell phone industries have different market structures. **Market structure** refers to the organization of a market, based mainly on the degree of competition among producers.

Economists define market structure according to four main characteristics.

Number of producers. The number of producers in a market helps determine the level of competition. Markets with many producers are more competitive.

Similarity of products. The degree to which products in a market are similar also affects competition. The more similar the products are, the greater the competition among their producers.

Ease of entry. Markets differ in their ease of entry, which is a measure of how easy it is to start a new business and begin competing with established businesses. Markets that are easy to enter, with few restrictions, have more producers and are thus more competitive.

Control over prices. Markets also differ in the degree to which producers can control prices. The ability to influence prices—usually by increasing or decreasing the supply of goods—is known as **market power**. The more competitive the market, the less market power any one producer will have.

Based on these characteristics, economists have identified four basic market structures: perfect competition, monopoly, oligopoly, and monopolistic competition. These structures are shown on this spectrum, from most competitive to least competitive. As you read, keep in mind that these four models are not always easy to identify in the actual economy. In some cases, a market will have mixed features, making it hard to tell how competitive it is.

Perfect Competition: Many Producers, Identical Products

The most competitive market structure is **perfect competition**. In a perfectly competitive market, a large number of firms produce essentially the same product. All goods are sold at their equilibrium price, or the price set by the market when quantity supplied and quantity demanded are in balance. Economists consider perfect competition to be the most efficient market structure in terms of allocating resources to those who value them most.

Although many markets are highly competitive, perfect competition is relatively rare. It exists mainly among producers of agricultural products, such as wheat, corn, tomatoes, and milk. Other examples of perfectly competitive markets include commercial fishing and the wood pulp and paper industry.

Perfect competition has four main characteristics.

Many producers and consumers. Perfectly competitive markets have many producers and consumers. Having a large number of participants in a market helps promote competition.

Identical products. Products in perfectly competitive markets are virtually identical. As a result, consumers do not distinguish among the products of different producers. A product that is exactly the same no matter who produces it is called a **commodity**. Examples include grains, cotton, sugar, and crude oil.

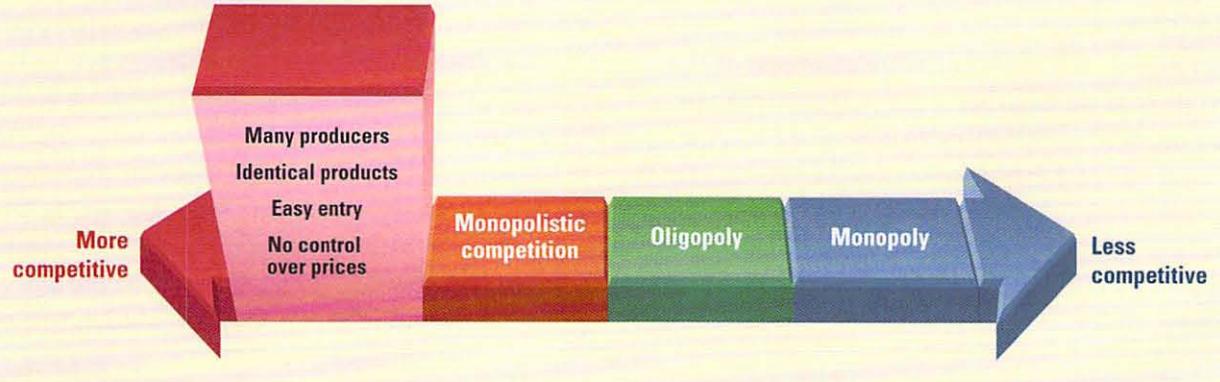
Easy entry into the market. In a perfectly competitive market, producers face few restrictions in entering the market. Ease of entry ensures that existing producers will face competition from new firms and that a single producer will not dominate the market.

No control over prices. Under conditions of perfect competition, producers have no market power. They cannot influence prices because there are too many other producers offering the same product. Instead, the market forces of supply and demand determine the price of goods. Producers are said to be **price takers** because they must accept, or take, the market price for their product.

Key Concept

Perfect Competition

The four basic market structures are defined mainly by how competitive they are. Perfect competition is the most competitive, with many producers offering identical products.



In addition to these characteristics, one other feature distinguishes highly competitive markets: easy access to information about products and prices. A person shopping for a car, for example, can easily find out the range of models, features, and prices available. Such information is readily accessible at car dealerships, in published reports, and on the Internet. Information gathering involves trade-offs, however. Consumers must balance the time and expense of gathering such information with the money saved by finding a good deal.

Economists refer to the costs of shopping around for the best product at the best price as **transaction costs**. The Internet has helped reduce transaction costs by making product and price information more readily available. Instead of driving to various stores or making multiple phone calls, consumers can often make price comparisons over the Internet with less time and effort.

A Competition Case Study: The Milk Business

To get a better idea of how perfect competition works, consider the market for milk. To begin with, the milk market has many producers—about 51,000 dairy farms in the United States. They all offer the same basic commodity. Milk from one farm is pretty much the same as milk from any other farm.

Furthermore, no farm produces enough milk to dominate the market and achieve market power. There are simply too many farms, and the overall quantity of milk produced is too great for any one producer to influence prices by increasing or decreasing supply, so dairy farmers must be price takers and accept the market price for their milk. If they were to charge more than the market price, their buyers—firms that process milk into dairy products—would simply buy milk from some other producer.

Milk production also offers relative ease of entry. Anyone who wants to become a dairy farmer can enter the market, assuming that he or she has the resources. Even a farmer with only a few cows can sell milk to a local milk processor.

Thus, milk production satisfies the four criteria for perfect competition: many producers, identical product, no control over prices, and easy entry into the market.

Barriers to Entry Can Limit Competition

Our look at dairy farming hints at some of the obstacles that can restrict access to a market and limit competition. Such obstacles are known as **barriers to entry**.

One possible barrier is **start-up costs,** or the initial expense of launching a business. It is much less expensive, for example, to open a bicycle repair shop than it is to open a bicycle factory. An entrepreneur with little financial capital might find it difficult to get into bicycle manufacturing because of the high cost of building a factory.

The mining industry offers an example of another barrier to entry: control of resources. If existing mining companies already control the best deposits of iron, copper, or other minerals, it will be hard for new firms to enter the market.

Technology can pose yet another barrier. Some industries are more technology driven than others. The need for specialized technology or training may make it difficult to enter these markets. The computer industry is one example. Not only does the manufacture of computers require advanced technology, it also requires specialized knowledge that can be obtained only through years of education. These factors may act as a barrier, keeping new firms out of the computer market.

The Benefits of Perfect Competition

As the name suggests, perfect competition is rare in its purest form. Because it is the most efficient market structure, economists consider perfect competition to be the benchmark, or standard, for evaluating all markets. That said, many markets are competitive enough to be "nearly perfect."

Such nearly perfect markets are beneficial in two ways. First, they force producers to be as efficient as possible. When producers can sell only at the equilibrium price, the only way to maximize profits is by allocating resources to their most valued use and by keeping production costs as low as possible. Second, because perfect competition is efficient, consumers do not pay more for a product than it is worth. The equilibrium price of a product in a perfectly competitive market accurately reflects the value the market places on the productive resources—land, labor, and capital—that have gone into it.

Economists Robert Heilbroner and Lester Thurow summed up the benefits of perfect competition:

> *In a purely competitive market, the consumer is king. Indeed the rationale of such a market is often described as* **consumer sovereignty**.
>
> *The term means two things. First, in a pure competitive market the consumer determines the allocation of resources by virtue of his or her demand—the public calls the tune to which the businessman dances. Second, the consumer enjoys goods that are produced as abundantly and sold as cheaply as possible. In such a market, each firm is producing the goods the consumer wants, in the largest quantity and at the lowest cost possible.*
>
> —Robert Heilbroner and Lester Thurow, *Economics Explained: Everything You Need to Know About How the Economy Works and Where It's Going*, 1998

7.3 What Is a Monopoly, and Why Are Some Monopolies Legal?

Most markets are not perfectly competitive. Because these markets do not allocate goods and services in the most efficient way, they are examples of what economists call imperfect competition. Economists define **imperfect competition** as any market structure in which producers have some control over the price of their products. In other words, those producers have market power. The most extreme version of imperfect competition—and the opposite of perfect competition—is monopoly.

Monopoly: One Producer, A Unique Product

A **monopoly** is a market or an industry consisting of a single producer of a product that has no close substitutes. The term *monopoly* comes from a combination of the Greek words *mono*, meaning "alone," and *polein*, meaning "to sell." Literally, then, a monopoly is the only seller of something.

Monopolies share four main characteristics.

One producer. There is no competition in a monopoly. A single producer or firm controls the industry or market. An economist might say that the monopolistic firm is the industry.

Unique product. A monopoly provides the only product of its kind. There are no good substitutes, and no other producers provide similar goods or services.

High barriers to entry. The main factor that allows monopolies to exist is high barriers to entry that limit or prevent other producers from entering the market.

Key Concept

Monopoly

Monopoly lies at the opposite end of the spectrum from perfect competition. A monopoly is a market with one producer offering a product for which there are no good substitutes. Examples include the water, power, and cable TV industries.

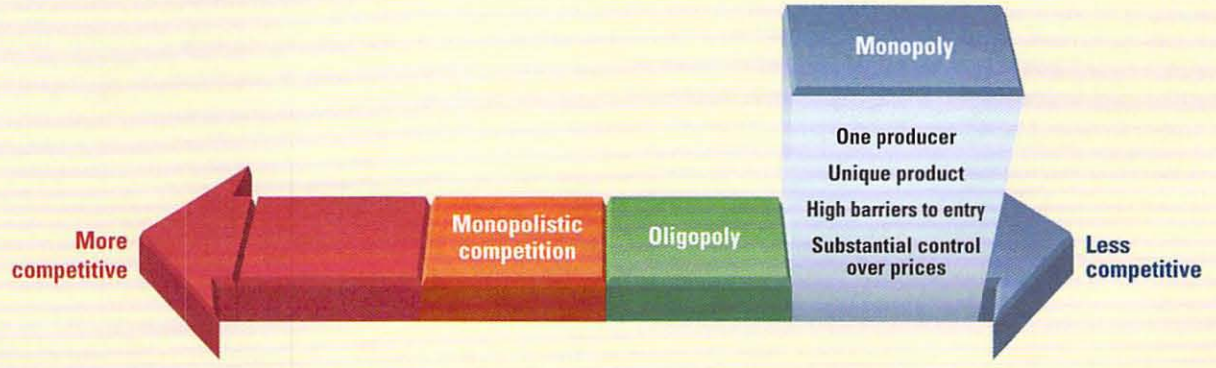


Figure 7.3

Busting the Standard Oil Monopoly

The antitrust action against Standard Oil in 1911 broke up the oil monopoly. This map shows how the oil trust was divided into smaller, competing companies, nicknamed the Baby Standards. Each new company took over Standard Oil operations in its assigned region of the United States.

Substantial control over prices. Monopolistic firms usually have great market power because they control the supply of a good or service. They can set a price for a product without fear of being undercut by competitors. Unlike competitive firms, monopolistic businesses are **price setters** rather than price takers.

Like perfect competition, pure monopoly is relatively rare in today's economy. Monopolies may form and survive for a time, but they often break down in the face of competition or government regulation.

In the late 1800s, however, a number of monopolies arose in the United States. Some took the form of one firm that controlled the market for a unique product. Others took the form of **trusts,** or combinations of firms, that worked together to eliminate competition and control prices.

One of the most famous, and feared, monopolies was John D. Rockefeller's Standard Oil Company. Rockefeller built his monopoly by buying out or bankrupting his competitors until he controlled about 90 percent of U.S. oil sales. Viewing monopolies as harmful to the public interest, Congress enacted **antitrust laws** to limit their formation. In 1911, the federal government took Standard Oil to court for antitrust violations and broke up its oil monopoly. Figure 7.3 shows the results of that famous trust-busting case.

Three Types of Legal Monopolies

The government still seeks to prevent the formation of most monopolies. However, it does allow certain kinds of monopolies to exist under particular circumstances. These legal monopolies fall into three broad categories: resource monopolies, government-created monopolies, and natural monopolies.

Resource monopolies. Resource monopolies exist when a single producer owns or controls a key natural resource. Other firms cannot enter the market because they do not have access to the resource. For example, if a firm owns the only stone quarry in a town, it may be able to monopolize the local market for building stone. Resource monopolies are rare,

however, because the economy is large and supplies of resources are not usually controlled by one owner.

Government-created monopolies. Government-created monopolies are formed when the government grants a single firm or individual the exclusive right to provide a good or service. The government does this when it considers such monopolies to be in the public interest. Government-created monopolies may be formed in three ways.

Patents and copyrights. These legal grants are designed to protect and promote intellectual capital. They give inventors or creators the right to control the production, sale, and distribution of their work, thus creating a temporary monopoly over that work. For example, a patent issued to a pharmaceutical company gives that company the sole right to produce and sell a particular drug for a period of 20 years. Such patents encourage investment in research and development. In the same way, a copyright grants exclusive rights to an artist, writer, or composer to control a creative work, such as a painting, a novel, or a song, for a period of time.

Public franchises. A **public franchise** is a contract issued by a government entity that gives a firm the sole right to provide a good or service in a certain area. For example, the National Park Service issues public franchises to companies to provide food, lodging, and other services in national parks. School districts may issue public franchises to snack food companies to place their vending machines in public schools. In each case, a single firm has a monopoly in that particular market.

Licenses. A **license** is a legal permit to operate a business or enter a market. In some cases, licenses can create monopolies. For example, a state might grant a license to one company to conduct all vehicle emissions tests in a particular town. Or a city might license a parking lot company to provide all the public parking in the city. Licenses ensure that certain goods and services are provided in an efficient and regulated way.

Natural monopolies. The third type of monopoly is a **natural monopoly**. This kind of monopoly arises when a single firm can supply a good or service more efficiently and at a lower cost than two or more competing firms can. For example, most utility industries are natural monopolies. They provide gas, water, and electricity, as well as cable TV services, to businesses and households. Because natural monopolies are efficient, governments tend to view them as beneficial.

A natural monopoly occurs when a producer can take advantage of economies of scale to dominate the market. The term **economies of scale** refers to the greater efficiency and cost savings that result from increased production. A firm that achieves economies of scale lowers its average cost per unit of production by increasing its output and spreading fixed costs over a larger quantity of goods.

Grand Canyon Lodges in the Grand Canyon National Park is a public franchise. Its contract with the government gives it a monopoly on lodging, dining, transportation, and other amenities in the park.

You can see how economies of scale work by looking at the cost of supplying water to a new subdivision of 50 homes. Suppose it costs a water company $100,000 to build a network of pipes that will bring water to the subdivision. In addition, installing a water meter at each home costs $1,000. The total cost of supplying water to the first home is $100,000, plus $1,000 for a meter, or $101,000 total.

Now look at the cost per home as the number of homes increases. A water meter for the second home costs $1,000, bringing the total cost for two homes to $102,000, or $51,000 per home. A water meter for the third home costs another $1,000, bringing the total cost for three homes to $103,000, or $34,333 per home. By the time the water company gets to the 50th home, its total cost is $150,000—$100,000 for pipes and $50,000 for 50 meters. The cost per home has decreased to $3,000.

Consider, now, what would happen if two companies were to compete to bring water to the subdivision. Each company would have to build its own network of pipes. The fixed costs of bringing water to the subdivision would essentially double, but the number of homes served would stay the same. As a result, the economies of scale would be substantially reduced. For that reason, it makes sense for the government to allow water companies, like other utilities, to do business as natural monopolies.

A Monopoly Case Study: Microsoft Corporation

Our government permits certain monopolies that are judged to be in the public interest to exist. In most other circumstances, monopoly is illegal. As in the Standard Oil Company case, the government may take action to break up a monopoly.

Consider the case of Microsoft, the giant computer software firm. In the 1980s, Microsoft received a copyright for its computer operating system known as Windows. Microsoft then made deals with computer makers to sell machines with Windows already installed on them. In this way, Microsoft gained control of about 90 percent of the market for operating systems. Microsoft's monopoly power allowed it to charge more for Windows than it might have in a more competitive market.

Microsoft also used its market power to drive potential competitors out of the market. In 1994, a software company called Netscape began selling a new computer application known as a Web browser to computer users. A Web browser enables computer users to find and view Internet sites from around the world. Microsoft effectively drove Netscape out of business by bundling its own version of a browser, Internet Explorer, into its Windows operating system. As part of Windows, Internet Explorer came already installed on most new computers, severely reducing the market for browsers from Netscape or any other software company.

Bill Gates, the chairman and cofounder of Microsoft, testifies at his company's antitrust trial in August 1998. The trial judge found Microsoft guilty of engaging in monopolistic practices.

In late 1997, the U.S. Department of Justice accused Microsoft of trying to stifle competition by expanding its monopoly power into the Internet market. In 1998, Justice Department lawyers charged Microsoft with antitrust violations and took the company to court. In its defense, Microsoft argued that it had merely added new features to its operating system. It claimed that the integration of its Web browser was a natural and logical step in efforts to improve its products and satisfy its customers.

In November 1999, the trial judge found that Microsoft had violated antitrust laws. He ordered the company to be broken into two separate businesses: one that sold the Windows operating system

and another that sold applications software. Microsoft appealed the decision to a higher court, which overturned the breakup order but upheld the antitrust verdict.

In 2002, Microsoft settled its case with the government by agreeing to change the way it dealt with other software firms. The company's troubles did not end there, however. It was later hit by several private antitrust suits and was fined in Europe for anticompetitive actions.

Consequences of Monopoly for Consumers

The government's case against Microsoft focused mainly on the company's aggressive efforts to drive other firms out of the market. But the case also underscored the negative effects of monopoly for consumers. Because a monopolistic firm has considerable market power, it can set prices without fear of lower-priced competition from other firms. As a result, consumers may be forced to pay more for a good or service provided by a monopoly than they would in a competitive market.

Furthermore, because such firms face little or no competition, they have less incentive to innovate or to satisfy consumers. Viewing their customers as a "captive market," monopolies may offer consumers products of lesser quality or fewer product choices than they would if the market were more competitive.

7.4 What Is an Oligopoly, and How Does It Limit Competition?

The third market structure—oligopoly—is similar to monopoly. It is another form of imperfect competition in which firms exercise considerable market power. However, unlike monopolies, oligopolies are quite common in the real economy. We do business with oligopolies whenever we take a domestic airline flight, buy a new car, or consume a can of soda.

Oligopoly: Few Producers, Similar Products

An **oligopoly** is a market or an industry dominated by just a few firms that produce similar or identical products. Oligopoly is one of the less-competitive market structures. On our spectrum of structures, it lies closer to monopoly than to perfect competition.

Like monopolies, oligopolies often arise because of economies of scale, which give bigger producers an advantage over smaller ones. In an oligopoly, however, there is at least some competition. In addition, firms in an oligopoly do not have to be large. As an example, if two hardware stores control all the hardware business in a town, then together they make up an oligopoly.

The modern American economy has many oligopolies. The airline, automobile, and soft drink industries are oligopolies, as are the industries

Key Concept

Oligopoly

Oligopoly lies at the less competitive end of the spectrum. It is a market with only a few producers that offer similar or identical products. Examples include the aircraft, soft drink, and auto industries.

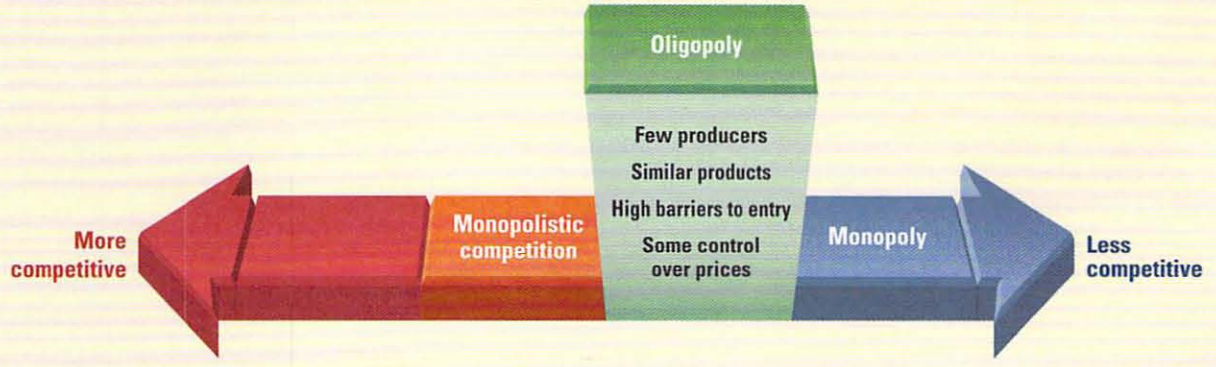


Figure 7.4

Identifying an Oligopoly

One way to tell whether a market is controlled by an oligopoly is to determine what percentage of market share the four largest firms control. This percentage is called the four-firm concentration ratio. A concentration ratio of greater than 60 percent usually indicates an oligopoly.

- Note the highest concentration ratio. Four firms control 98 percent of the market for washers and dryers.
- Compare the concentration ratios for pet food and soap detergent. How do those markets differ in terms of the numbers of companies competing for market share?

Concentration Ratios of Selected Industries, 2007

Industry	Percentage of Market Controlled by the Four Largest Firms	Firms in the Market
Washers and dryers	98	14
Computers	87	413
Aircraft	81	221
Light bulbs	75	69
Bicycles and motorcycles	72	462
Bottled water	72	250
Dog and cat food	71	199
Soap detergent	67	659
Pasta	63	155

Source: U.S. Census Bureau.

that produce light bulbs, tennis balls, and large passenger jets.

If you go to a sporting goods store to buy tennis balls, for example, you will likely find just four brands: Wilson, Penn, Dunlop, and Spalding. In 2014, these four companies controlled the U.S. market for tennis balls. In aircraft manufacturing, just two companies, Boeing and Airbus, dominated the market for jetliners. Likewise, just three companies dominated the carbonated soft drink market: Coca-Cola, Pepsi, and Dr Pepper Snapple Group. Although other companies may be part of these industries, they have little impact on the market.

Oligopolies share four main characteristics.

Few producers. In an oligopoly, a small number of firms control the market. In general, an industry is considered an oligopoly if the four top producers together supply more than about 60 percent of total output. The proportion of the total market controlled by a set number of companies is called the **concentration ratio**. For example, the four-firm concentration ratio in the light bulb industry is 75 percent. Figure 7.4 shows concentration ratios for various oligopolies.

Similar products. Producers in oligopolies offer essentially the same product, with only minor variations. For example, light bulbs are all very similar. They may come in different shapes and sizes, but they are all close substitutes for one another. The same goes for kitchen appliances, soap, computer chips, and cola drinks. Though some consumers prefer Coca-Cola to Pepsi and vice versa, the two drinks are actually very nearly the same.

High barriers to entry. It is hard for new firms to break into an oligopoly and compete with existing businesses. One reason may be high start-up costs. Existing firms may already have made sizable investments and enjoy the advantage of economies

of scale. For example, it would cost many millions of dollars to open a new computer chip factory and compete with industry leaders such as Intel. In addition, customers might be reluctant to give up their loyalty to the old brands and try something new.

Some control over prices. Because there are few firms in an oligopoly, they may be able to exert some control over prices. Firms in an oligopoly are often influenced by the price decisions of other firms in the market. This interdependence between firms in setting prices is a key feature of oligopoly.

Cooperative Pricing: When an Oligopoly Acts Like a Monopoly

When firms in an oligopoly compete for customers, the result can be a fairly competitive market. Often, however, oligopolies behave more like monopolies. Rather than lower their prices to try to win a larger share of the market, firms in an oligopoly may drive prices upward to levels above the market equilibrium price. They may do this in three ways: price leadership, collusion, and cartel formation.

Price leadership. In an oligopoly dominated by a single company, that firm may try to control prices through **price leadership**. The dominant firm sets a price, and the other, smaller firms follow suit. If the industry leader sets the price high, the other firms benefit. Sometimes, however, the dominant firm may cut prices to take business away from its competitors or even force them out of business. If the other firms also lower their prices, the market is said to be experiencing a **price war**. Price wars are hard on producers but beneficial for consumers.

Collusion. Firms in an oligopoly may also try to control the market through collusion. **Collusion** occurs when producers get together and make agreements on production levels and pricing.

Collusion is illegal because it unfairly limits competition. Nevertheless, firms sometimes try to get around the law. For example, Apple and five major book publishing companies were accused of collusion aimed at fixing the prices of electronic books, or e-books. In 2013, a federal judge ruled that these companies negotiated with one another to drive up prices.

Cartel formation. A **cartel** is an organization of producers established to set production and price levels for a product. Cartels are illegal in the United States, but they do sometimes operate on a global scale, most often in the commodities markets. For example, nations that produce coffee, sugar, and tin have all tried to form cartels in the past.

The Organization of the Petroleum Exporting Countries is the best-known modern cartel. OPEC consists of about a dozen countries that agree to set quotas on oil production and exports. By setting limits on the supply of oil, OPEC exerts a major influence on world oil prices.

The Organization of the Petroleum Exporting Countries is an international cartel that seeks to control oil supplies and prices. OPEC oil ministers meet regularly to assess global demand for oil and assign production quotas. The quotas set an upper limit on each country's oil production. This meeting of OPEC oil ministers took place in Isfahan, Iran.

The market power of a cartel like OPEC underscores the potentially harmful effects of oligopolies on consumers. When firms in an oligopoly work together to control the market, they act much like a monopoly. As such, they can use their market power to limit competition and raise prices.

7.5 What Is Monopolistic Competition, and How Does It Affect Markets?

The fourth market structure, monopolistic competition, is the one we encounter most often in our daily lives. When we eat in a restaurant, buy gas at a gas station, or shop at a clothing store, we are doing business in monopolistically competitive markets.

Monopolistic Competition: Many Producers, Similar but Varied Products

In **monopolistic competition,** a large number of producers provide goods that are similar but varied. Like oligopoly, this market structure falls between the extremes of perfect competition and monopoly. However, it lies on the more competitive end of the spectrum.

The shoe business is a good example of monopolistic competition. If you go to a discount shoe store, you will find hundreds of pairs of shoes on display, made by many different companies. Each company has marked its shoes with its own **brand,** or trade name. Each has worked to make its line of shoes distinctive in style, color, material, or quality of construction. Because of these differences, shoes are not commodities. Therefore, the shoe industry does not fit the model of perfect competition. At the same time, the sheer number of shoe producers indicates that the shoe industry is neither a monopoly nor an oligopoly.

You might well wonder why a market like this would be called monopolistic. The main reason is that the goods offered by the competing brands are distinct enough to appear unique. As a result, customers may develop **brand loyalty,** favoring one company over all others. Such customer loyalty gives the favored company some degree of market power. In effect, the company "monopolizes" its brand and can charge more for it.

Monopolistic competition is especially common in service industries, such as banks, auto repair shops, and supermarkets. But as our shoe example indicates, it also exists in many manufacturing industries.

Monopolistic competitions share four basic characteristics.

Many producers. Monopolistically competitive markets have many producers or sellers. In a big city, many restaurants compete with one another for business. The same is true for gas stations and hotels.

Differentiated products. Firms in this type of market engage in **product differentiation,** which means they seek to distinguish their goods and services from

Key Concept

Monopolistic Competition

Monopolistic competition lies at the more competitive end of the spectrum. It is a market with many producers offering similar but slightly different products. Examples include the shoe, book, and restaurant industries.

In monopolistically competitive markets, firms use nonprice competition to attract customers. This supermarket sets itself apart from the competition by selling locally grown and organic foods and projecting an eco-friendly image.

those of other firms, even when those products are fairly close substitutes for one another. For example, a pizza stand and a taquería both offer fast foods. A customer may have a taste for one type of food over the other, but either will provide a suitable lunch.

Few barriers to entry. Start-up costs are relatively low in monopolistically competitive markets. This allows many firms to enter the market and earn a profit. For example, it does not cost much to get into the custom T-shirt business. That means that an entrepreneur with a good set of T-shirt designs may be able to open a shop or create a Web site and sell enough shirts to make a profit.

Some control over prices. Because producers control their brands, they also have some control over prices. However, because products from different producers are close substitutes, this market power is limited. If prices rise too much, customers may shift to another brand. In addition, there are too many producers for price leadership or collusion to be feasible.

Increasing Market Share Through Nonprice Competition

To compete with rival firms, producers in monopolistically competitive markets have to take price into consideration. But they also engage in **nonprice competition,** using product differentiation and advertising to attract customers. By convincing consumers that their brand is better than others, these producers hope to increase their firm's **market share,** or proportion of total sales in a market.

Nonprice competition typically focuses on four factors.

Physical characteristics. There are many kinds of products that consumers will pay more for because of their unique physical characteristics. For example, a pair of running shoes may stand out from its competitors because of the shoe's unique design, color, or materials. A consumer who likes that particular shoe may not consider buying any other pair, regardless of price.

Service. Some producers offer better service than others and can therefore charge higher prices. For example, a fast food chain and a sit-down restaurant both offer food, but the more expensive restaurant also offers table service. Upscale grocery stores may offer their customers free food samples or special services, such as food delivery and catering. Some department stores provide personal shopping assistants to help customers make selections. Such enhanced services may appeal to consumers who are willing to pay for them.

Location. Gas stations, dry cleaners, motels, and other businesses may compete with one another based on location. Although they offer the same basic product or service, a firm may win customers because it is located near a highway, a shopping mall, or some other convenient spot.

Status and image. Sometimes companies compete on the basis of their perceived status or trendiness. One brand may be regarded as more exclusive, more "natural," or more fashionable than another. For example, a handbag from an expensive boutique may have greater status in a customer's eyes than a similar bag from a discount store. Another customer may willingly pay more for designer jeans, even though a similar product without the designer label might be had for much less money.

These perceived status differences are usually established through advertising. Although advertisers often provide information about their products in ads, their main goal is to increase their sales and market share.

7.6 Market Failures: What Are Externalities and Public Goods?

As our survey of market structures shows, most market structures fall into the broad category of imperfect competition. Because these structures do not allocate goods and services in the most efficient way, economists call them **market failures**. However, imperfect competition is not the only form of economic inefficiency. Externalities and public goods are also evidence of market failure.

Externalities: Costs and Benefits That Spill Over

An **externality** is a side effect of production or consumption that has consequences for people other than the producer or consumer. You might think of externalities as spillover effects, either costs or benefits, resulting from the actions of companies or individuals.

Externalities occur in many ways and take many forms. When a factory dumps chemical waste into a river and the polluted water affects the health of people who live downstream, that is an externality. If a neighbor plants a new flower garden and the results please you, that is also an externality. If that same neighbor holds a party with loud music that keeps you up at night, that is an externality, too. In fact, it is an externality if you hear the music at all, whether you like it or not.

Now consider a more complicated example of spillover effects. Suppose that a corn syrup factory, run by a firm that we will call Acme Corn Syrup Company, produces an unpleasant odor, and every

Key Concept

Positive and Negative Externalities

Externalities, or spillover effects of production or consumption, come in many forms—some positive, others negative.

- Immunizations provide a positive externality. They protect the community—not just the recipients—from illness.
- Factory pollution is a negative externality. It imposes a cost on people other than the producer and consumer.

day that odor drifts into a nearby neighborhood. The odor is an externality by itself, but it has other side effects as well. Because of the smell, some people in the area decide to sell their homes. The odor is so bad, however, that no one wants to buy the houses, so as a result, housing prices fall.

An economist would consider the decline in property values around the factory to be a cost of corn syrup production, but it is not a cost paid by Acme Corn Syrup Company. Rather, this cost is external to the company and is borne by homeowners in the community. That external cost is an externality.

There are two types of externalities: negative and positive. A **negative externality** is a cost that falls on someone other than the producer or consumer. This cost may be monetary, but it may also simply be an undesired effect. Most of the examples discussed above are negative externalities.

A **positive externality,** on the other hand, is a benefit that falls on someone other than the producer or consumer. If you enjoy hearing the music from a neighborhood party, that spillover sound is a positive externality. Other examples include the broader benefits of getting an education or developing a less-polluting car. Students who get a college education benefit directly by getting higher-paying jobs. But if their success also results in greater economic prosperity for their communities, that is a positive externality. In the same way, if a car company designs a new car that emits fewer pollutants, the company may benefit from increased sales. But society benefits, too, as a result of reduced air pollution.

Another type of positive externality is known as a technology spillover. The benefit from a **technology spillover** results when technical knowledge spreads from one company or individual to another, thereby promoting further innovations. For example, other car companies might expand on the less-polluting car design to make additional improvements in pollution control. Those improvements are a technology spillover.

How Externalities Reflect Inefficiency

Although positive and negative externalities have very different results, they are both examples of inefficiency and market failure. That is because they fail to factor all costs of production and all benefits to consumers into the model of supply and demand.

A college education is a good example of a positive externality. Each individual's consumption of a good—in this case, higher education—will create a benefit for society in the form of a more productive workforce.

To understand what this means, consider the case of negative externalities generated by our imaginary corn syrup company. When Acme produces corn syrup, it incurs a private cost. This private cost, however, does not take into account the external cost paid by others as a result of Acme's pollution.

If Acme were to factor in this external cost, its total cost of production would increase. To make up for this extra cost, Acme would have to increase the price of corn syrup. In response to a price increase, the quantity of corn syrup demanded would most likely decrease. Acme would then have to lower its output to match the shrinking demand.

The fact that these changes in price and quantity demanded do not occur under ideal market conditions is a sign that the market is not working efficiently. The result is that goods that generate negative externalities tend to be overproduced, because their full cost is not reflected in the market price.

The reverse is true of goods and services that generate positive externalities. They tend to be underproduced relative to their benefits. Consider a beekeeper who sells honey for a living. The money

Key Concept

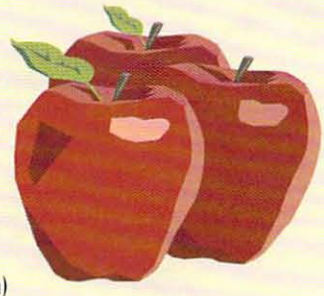
Private and Public Goods

Private goods, which are provided by the market system, differ in two key ways from public goods, which are generally provided by governments.

Private Goods

Available only to purchasers (excludable)

Consumption by one person prevents another from consuming (rival in consumption)



Public Goods

Available to everyone (nonexcludable)

Consumption by one person does not prevent another from consuming (nonrival in consumption)

she makes from her business is her private benefit. The beekeeper's neighbors, however, receive an external benefit when her bees pollinate their flowers and fruit trees at no cost. They may wish that she would double her number of hives. But unless the beekeeper can reap a private benefit from doing so, she is unlikely to expand her business no matter how much it might benefit her neighbors.

The Problem of Public Goods

Another example of market failure involves **public goods**—goods and services that are not provided by the market system because of the difficulty of getting people who use them to pay for their use. Examples of public goods include fire and police services, national defense, and public parks. Public goods are the opposite of **private goods,** or goods and services that are sold in markets.

Economists make two key distinctions between public and private goods. First, private goods are **excludable**. This means that anyone who does not pay for the good can be excluded from using it. A grocery store, for example, will sell apples only to customers willing to pay for them. Public goods, on the other hand, are **nonexcludable**. Think of streetlights. How could you prevent some people from using the light from streetlights? You could not, so this makes them nonexcludable.

A Fourth of July fireworks show put on by a city is an example of a public good. The city could make the show a private good by setting up a fence and selling tickets, but it could not prevent "free riders" from watching the show from outside the gates.

Second, private goods are said to be **rival in consumption,** which means that a good cannot be consumed by more than one person at the same time. Thus, for example, if you buy an apple and eat it, that apple is no longer available for anyone else to eat. In contrast, public goods are **nonrival in consumption**. One person's use of a streetlight's glow does not diminish another's ability to use its light as well.

Based on these two characteristics, you can see why parks and sidewalks are considered public goods. No one can be excluded from using them, and anyone can enjoy their benefits without depriving anyone else.

Private firms do not provide us with these public goods for a simple reason: they have no way to make the people who benefit from nonrival and nonexcludable goods pay for them. Economists call this situation the **free-rider problem**. If streetlights were a private good, for example, the company that provided them would want to charge the people who use them. But street lighting is not excludable, so anyone who passes under a streetlight can take a "free ride" by using the light and not paying for it. Because of these free riders, no private business will provide street lighting. The result, from the point of view of economists, is a market failure.

Externalities and public goods remind us that markets do not always work perfectly. As a matter of fact, they do not work perfectly much of the time. However, this does not mean that the market system is fatally flawed. Despite its weaknesses, the market system is still the most effective, efficient, and flexible way for all of us to get the things we want and need.

Summary

There are four basic market structures, each with different characteristics. Because only one of these structures is perfectly competitive, economists classify the other three as examples of imperfect competition and, therefore, as market failures.

What is perfect competition, and why do economists like it so much? Perfect competition is the most efficient and competitive market structure. It consists of many producers who provide identical goods, usually referred to as commodities. Prices are established by the interaction of supply and demand.

What is a monopoly, and why are some monopolies legal? A monopoly is the opposite of perfect competition. In a monopoly, a single producer provides a unique product and therefore has significant control over prices. The government permits certain kinds of monopolies to exist because they are believed to serve the public interest.

What is an oligopoly, and how does it limit competition? An oligopoly is a market dominated by a small number of producers who provide similar, but not identical, goods. Firms in an oligopoly often set prices based on other firms' pricing decisions. Because oligopolies can dominate markets, their effect may be much like that of a monopoly.

What is monopolistic competition, and how does it affect markets? Monopolistic competition is a market in which many producers provide a variety of similar goods. Such markets are characterized by the use of nonprice competition to differentiate products and build brand loyalty. To the extent that firms "monopolize" their own brands, they may have some control over prices, but such markets remain relatively competitive.

Market failures: What are externalities and public goods? Externalities are side effects of production and consumption. They may be positive or negative. Public goods are goods that are available for all people to consume, whether or not those people pay for the goods. Externalities and public goods are both symptoms of market failure.