

## 4

## The Market System

**S**UPPOSE THAT YOU were assigned to compile a list of all the individual goods and services available at a large regional shopping mall, including the different brands and variations of each type of product. We think you would agree that this task would be daunting and the list would be long! Although a single shopping mall contains a remarkable quantity and variety of goods, it is only a minuscule part of the national economy. ■ Who decided that the particular goods and services available at the mall and in the broader economy should be produced? How did the producers determine which technology and types of resources to use in producing these particular goods? Who will obtain these products? What accounts for the new and improved products among these goods? ■ In Chapter 3 we saw how equilibrium prices and quantities are established in *individual* product and resource markets. We now widen our focus to take in *all* product markets and resource markets—*capitalism*, also called the *private-enterprise system* or simply the *market system*. In this chapter we examine the characteristics of the market system and how that system answers questions such as those posed above.

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### ■ Characteristics of the Market System

The market system, as practiced in industrially advanced economies, has several notable characteristics. Let's look at them in some detail.

#### *Private Property*


In a market system, private individuals and firms, not the government, own most of the property resources (land and capital). In fact, it is this extensive

private ownership of capital that gives capitalism its name. This right of **private property**, coupled with the freedom to negotiate binding legal contracts, enables individuals and businesses to obtain, use, and dispose of property resources as they see fit. The right to bequeath—the right of property owners to designate who will receive their property when they die—sustains the institution of private property.

Property rights encourage investment, innovation, exchange, maintenance of property, and economic growth. Why would anyone stock a store, build a factory, or clear land for farming if someone

else, or the government itself, could take that property for his or her own benefit?

Property rights also extend to intellectual property through patents, copyrights, and trademarks. Such long-term protection encourages people to write books, music, and computer programs and to invent new products and production processes without fear that others will steal them and the rewards they may bring.

Property rights also facilitate exchange. The title to an automobile or the deed to a cattle ranch assures the buyer that the seller is the legitimate owner. Moreover, property rights encourage owners to maintain or improve their property so as to preserve or increase its value. Finally, property rights enable people to use their time and resources to produce more goods and services, rather than using them to protect and retain the property they have already produced or acquired.  4.1

### Freedom of Enterprise and Choice

Closely related to private ownership of property is freedom of enterprise and choice. The market system requires that various economic units make certain choices, which are expressed and implemented in the economy's markets:

- **Freedom of enterprise** ensures that entrepreneurs and private businesses are free to obtain and use economic resources to produce their choice of goods and services and to sell them in their chosen markets.
- **Freedom of choice** enables owners to employ or dispose of their property and money as they see fit. It also allows workers to enter any line of work for which they are qualified. Finally, it ensures that consumers are free to buy the goods and services that best satisfy their wants.

These choices are free only within broad legal limitations, of course. Illegal choices such as selling human organs or buying illicit drugs are punished through fines and imprisonment. (Global Perspective 4.1 reveals that the degree of economic freedom varies greatly from nation to nation.)

### Self-Interest

In the market system, **self-interest** is the motivating force of all the various economic units as they express their free choices. Self-interest means that each economic unit tries to do what is best for itself. Entrepreneurs try to maximize profit or minimize

## GLOBAL PERSPECTIVE 4.1

### Index of Economic Freedom, Selected Economies

The Index of Economic Freedom measures economic freedom using 10 broad categories such as trade policy, property rights, and government intervention, with each category containing more than 50 specific criteria. The index then ranks 156 economies according to their degree of economic freedom. A few selected rankings for the year 2000 are listed below.

#### FREE

1 Hong Kong

4 New Zealand

5 United States

#### MOSTLY FREE

13 Chile

14 Canada

20 Germany

#### MOSTLY UNFREE

75 Malaysia

93 Brazil

106 Poland

#### REPRESSED

144 Vietnam


151 Iran

152 Cuba

Source: Heritage Foundation and *The Wall Street Journal*.

loss. Property owners try to get the highest price for the sale or rent of their resources. Workers try to maximize their utility (satisfaction) by finding jobs that offer the best combination of wages, hours, fringe benefits, and working conditions. Consumers try to obtain the products they want at the lowest possible price and apportion their expenditures to maximize their utility. The motive of self-interest gives direction and consistency to what might otherwise be a chaotic economy.

Recall that the pursuit of self-interest is not the same as selfishness. Self-interest involves maximizing some benefit, and it does not preclude helping others. A stockholder may invest to receive maximum corporate dividends and then donate a portion of them to the United Way or give them to grandchildren. A worker may take a second job to help pay

college tuition for her or his children. An entrepreneur may make a fortune and donate much of it to a charitable foundation.  4.1

## Competition

The market system depends on **competition** among economic units. The basis of this competition is freedom of choice exercised in pursuit of a monetary return. Very broadly defined, *competition* requires:

- Independently acting sellers and buyers operating in a particular product or resource market.
- Freedom of sellers and buyers to enter or leave markets, on the basis of their economic self-interest.

Competition diffuses economic power within the businesses and households that make up the economy. When there are independently acting sellers and buyers in a market, no one buyer or seller is able to dictate the price of the product.

Consider the supply side of the product market. When a product becomes scarce, its price rises. An unseasonable frost in Florida may seriously reduce the supply of citrus crops and sharply increase the price of oranges. Similarly, if a single producer can somehow restrict the total output of a product, it can raise the product's price. By controlling market supply, a firm can “rig the market” to its own advantage. But that is not possible in markets where suppliers compete. A firm that raises its price will lose part or all of its business to competitors.

The same reasoning applies to the demand side of the market. Because there are multiple buyers, single buyers cannot manipulate the market to their own advantage by refusing to pay the market price.

Competition also implies that producers can enter or leave an industry; there are no insurmountable barriers to an industry's expanding or contracting. This freedom of an industry to expand or contract provides the economy with the flexibility needed to remain efficient over time. Freedom of entry and exit enables the economy to adjust to changes in consumer tastes, technology, and resource availability.

*The diffusion of economic power inherent in competition limits the potential abuse of that power.* A producer that charges more than the competitive market price will lose sales to other producers. An employer who pays less than the competitive market wage rate will lose workers to other employers. A firm that fails to exploit new technology will lose profits to firms that do. Competition is the basic regulatory force in the market system.

## Markets and Prices

Markets and prices are key characteristics of the market system. They give the system its ability to coordinate millions of daily economic decisions. We know from Chapters 2 and 3 that a market is a mechanism that brings buyers (demanders) and sellers (suppliers) into contact. A market system is necessary to convey the decisions made by buyers and sellers of products and resources. The decisions made on each side of the market determine a set of product and resource prices that guide resource owners, entrepreneurs, and consumers as they make and revise their free choices and pursue their self-interest.

Just as competition is the regulatory mechanism of the market system, the market system itself is the organizing mechanism. It serves as an elaborate communication network through which innumerable individual free choices are recorded, summarized, and balanced. Those who respond to market signals and obey market dictates are rewarded with greater profit and income; those who do not respond to these signals and choose to ignore market dictates are penalized. Through this mechanism society decides what the economy should produce, how production can be organized efficiently, and how the fruits of production are to be distributed among the various units that make up the economy.

### QUICK REVIEW 4.1

- The market system rests on the private ownership of property and on freedom of enterprise and freedom of choice.
- The market system permits economic entities—businesses, resource suppliers, and consumers—to pursue and further their self-interest. It prevents any single economic entity from dictating the prices of products or resources.
- The coordinating mechanism of the market system is a system of markets and prices.

## Reliance on Technology and Capital Goods

Another characteristic of the market system is the extensive use of capital goods. In the market system, competition, freedom of choice, self-interest, and personal reward provide the opportunity and motivation for technological advance. The monetary

rewards for new products or production techniques accrue directly to the innovator. The market system therefore encourages extensive use and rapid development of complex capital goods: tools, machinery, large-scale factories, and facilities for storage, communication, transportation, and marketing.

Advanced technology and capital goods are important because the most direct methods of production are often the least efficient. The only way to avoid that inefficiency is to rely on **roundabout production**. It would be ridiculous for a farmer to go at production with bare hands. There are huge benefits—in the form of more efficient production and, therefore, more abundant output—to be derived from creating and using such tools of production (capital equipment) as plows, tractors, storage bins, and so on.

## Specialization

The extent to which market economies rely on **specialization** is extraordinary. The majority of consumers produce virtually none of the goods and services they consume, and they consume little or nothing of what they produce. The worker who devotes 8 hours a day to installing windows in Fords may own a Honda. Many farmers sell their milk to the local dairy and then buy margarine at the local grocery store. Society learned long ago that self-sufficiency breeds inefficiency. The jack-of-all-trades may be a very colorful individual but is certainly not an efficient producer.

**Division of Labor** Human specialization—called the **division of labor**—contributes to a society's output in several ways:


- **Specialization makes use of differences in ability.** Specialization enables individuals to take advantage of existing differences in their abilities and skills. If caveman A is strong and swift and good at tracking animals, and caveman B is weak and slow but patient, their distribution of talents can be most efficiently used if A hunts and B fishes.
- **Specialization fosters learning by doing.** Even if the abilities of A and B are identical, specialization may still be advantageous. By devoting all your time to a single task, you are more likely to develop the skills it requires and to devise improved techniques than you would by working at a number of different tasks. You

learn to be a good hunter by going hunting every day.

- **Specialization saves time.** By devoting all your time to a single task, you avoid the loss of time incurred in shifting from one job to another.

For all these reasons, specialization increases the total output society derives from limited resources.

**Geographic Specialization** Specialization also works on a regional and international basis. It is conceivable that oranges could be grown in Nebraska, but because of the unsuitability of the land, rainfall, and temperature, the costs would be very high. And it is conceivable that wheat could be grown in Florida. But for similar reasons such production would be costly. So Nebraskans produce products—wheat in particular—for which their resources are best suited, and Floridians do the same, producing oranges and other citrus fruits. By specializing, both economies produce more than is needed locally. Then, very sensibly, Nebraskans and Floridians swap some of their surpluses—wheat for oranges, oranges for wheat.

Similarly, on an international scale, the United States specializes in producing such items as commercial aircraft and computers, which it sells abroad in exchange for video recorders from Japan, bananas from Honduras, and woven baskets from Thailand. Both human specialization and geographical specialization are needed to achieve efficiency in the use of limited resources.  4.2

## Use of Money

A rather obvious characteristic of the market system is the extensive use of money. Money performs several functions, but first and foremost it is a **medium of exchange**. It makes trade easier.

*A convenient means of exchanging goods is required for specialization.* Exchange can, and sometimes does, occur through **barter**—swapping goods for goods, say, wheat for oranges. But barter poses serious problems for the economy because it requires a *coincidence of wants* between the buyer and the seller. In our example, we assumed that Nebraskans had excess wheat to trade and wanted oranges. And we assumed that Floridians had excess oranges to trade and wanted wheat. So an exchange occurred. But if such a coincidence of wants is missing, trade is stymied.

Suppose that Nebraska has no interest in Florida's oranges but wants potatoes from Idaho.

And suppose that Idaho wants Florida's oranges but not Nebraska's wheat. And, to complicate matters, suppose that Florida wants some of Nebraska's wheat but none of Idaho's potatoes. We summarize the situation in Figure 4.1.

In none of the cases shown in the figure is there a coincidence of wants. Trade by barter clearly would be difficult. Instead, people in each state use **money**, which is simply a convenient social invention to facilitate exchanges of goods and services. Historically, people have used cattle, cigarettes, shells, stones, pieces of metal, and many other commodities, with varying degrees of success, as a medium of exchange. But to serve as money, an item needs to pass only one test: *It must be generally acceptable to sellers in exchange for their goods and services.* Money is socially defined; whatever society accepts as a medium of exchange is money.

Most economies use pieces of paper as money. The use of paper dollars (currency) as a medium of exchange is what enables Nebraska, Florida, and Idaho to overcome their trade stalemate, as demonstrated in Figure 4.1.

On a global basis the fact that different nations have different currencies complicates specialization and exchange. However, markets in which currencies are bought and sold make it possible for U.S. residents, Japanese, Germans, Britons, and Mexicans, through the swapping of dollars,

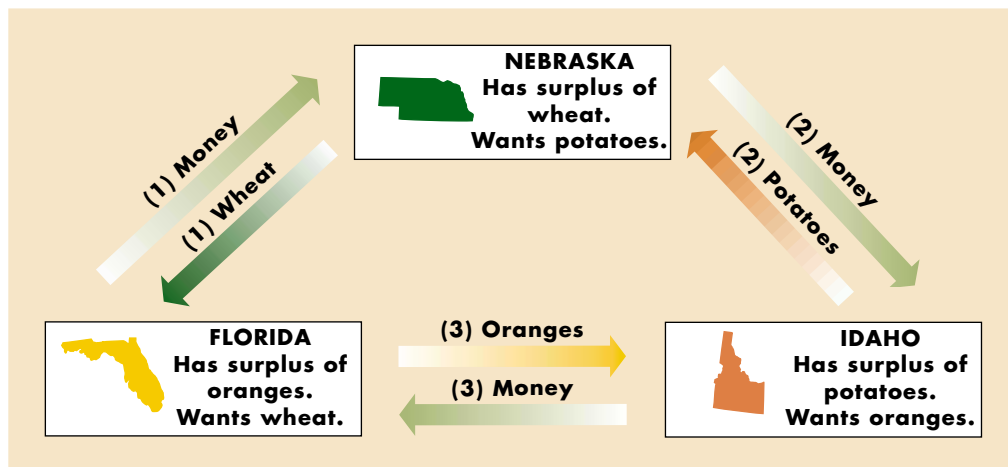
yen, euros, pounds, and pesos, one for another, to exchange goods and services. **! 4.2**

## Active, but Limited, Government

The final characteristic of the market system, as evidenced in modern economies, is an active, but limited, government. Although a market system promotes a high degree of efficiency in the use of its resources, it has certain shortcomings. We will discover in Chapter 5 that government can increase the overall effectiveness of the economic system in several ways.

### QUICK REVIEW 4.2

- The market systems of modern industrial economies are characterized by extensive use of technologically advanced capital goods. Such goods help these economies achieve greater efficiency in production.
- Specialization is extensive in market systems; it enhances efficiency and output by enabling individuals, regions, and nations to produce the goods and services for which their resources are best suited.
- The use of money in market systems facilitates the exchange of goods and services that specialization requires.



**Figure 4.1**

**Money facilitates trade when wants do not coincide.** The use of money as a medium of exchange permits trade to be accomplished despite a noncoincidence of wants. (1) Nebraska trades the wheat that Florida wants for money from Floridians; (2) Nebraska trades the money it receives from Florida for the potatoes it wants from Idaho; (3) Idaho trades the money it receives from Nebraska for the oranges it wants from Florida.

## I The Market System at Work

We have noted that a market system is characterized by competition, freedom of enterprise, and choice. Consumers are free to buy what they choose; entrepreneurs and firms are free to produce and sell what they choose; and resource suppliers are free to make their property and human resources available in whatever use or occupation they choose. We may wonder why such an economy does not collapse in chaos. If consumers want breakfast cereal but businesses choose to produce aerobic shoes and resource suppliers decide to manufacture computer software, production would seem to be deadlocked by the apparent inconsistency of these free choices.

In reality, the millions of decisions made by households and businesses are highly consistent with one another. Firms *do* produce the goods and services that consumers want, and households *do* provide the kinds of labor that businesses want.

To understand the operation of the market system, you must first recognize that every economy must respond to Four Fundamental Questions:

- What goods and services will be produced?
- How will the goods and services be produced?
- Who will get the goods and services?
- How will the system accommodate change?

The **Four Fundamental Questions** highlight the economic choices underlying the production possibilities curve discussed in Chapter 2. These questions are relevant because of scarce resources in a world of unlimited wants. Let's examine how the market system answers each of these questions and thus addresses the economizing problem.

### What Will Be Produced?

With product and resource prices in place, established through competition in both the product and the resource markets, how will a market system decide on the specific types and quantities of goods to be produced? *Because businesses seek profits and avoid losses, the goods and services produced at a continuing profit will be produced and those produced at a continuing loss will not.* Profits and losses depend on the difference between the total revenue a firm receives from selling its product and the total cost of producing the product:

$$\text{Economic profit} = \text{total revenue} - \text{total cost}$$

Total revenue (TR) is found by multiplying the product price by the quantity of the product sold. Total

cost (TC) is found by multiplying the price of each resource used by the amount employed and summing the results.

**Economic Costs and Profits** Saying that the products that can be produced profitably *will* be produced and those that cannot *will not* is an accurate generalization only if the meaning of **economic costs** is clearly understood.

Let's think of businesses as simply organizational charts—that is, businesses “on paper,” as distinct from the capital, raw materials, labor, and entrepreneurial ability that make them function. To become actual producing firms, these “on-paper” businesses must secure all four types of resources. *Economic costs are the payments that must be made to secure and retain the needed amounts of those resources.* The per-unit size of those costs—the resource prices—are determined by supply and demand in the resource market. As with land, labor, and capital, entrepreneurial ability is a scarce resource that carries a price tag. Consequently, costs must include not only wage and salary payments to labor, and interest and rental payments for capital and land, but also payments to the entrepreneur for organizing and combining the other resources to produce a commodity. The payment for (cost of) the entrepreneur's contributions is called **normal profit**.

A product is produced only if total revenue is large enough to pay wages, interest, rent, and a normal profit (a cost) to the entrepreneur. That way all the economic costs are covered, including the opportunity cost of the entrepreneur's time and talent. If the total revenue from the sale of a product exceeds all these economic costs, the remainder goes to the entrepreneur as an added reward. That return is called *pure profit* or **economic profit**. Economic profit is an above-normal profit, and it *is* what lures other producers to a particular industry.

**Profits and Expanding Industries** An example will help explain how the market system determines what goods will be produced. With current technology, suppose the most favorable relationship between total revenue and total cost in producing product X occurs when a firm's output is 15 units. Assume, too, that the least-cost combination of resources in producing 15 units of X is 2 units of labor, 3 units of land, 1 unit of capital, and 1 unit of entrepreneurial ability, selling at prices of \$2, \$1, \$3, and \$3, respectively. Finally, suppose that the 15 units of X that these resources produce can be sold

for \$1 per unit, or \$15 total. Will firms produce X? Yes, because each firm will be able to pay wages, rent, interest, and normal profit (a cost) of \$13 [=  $(2 \times \$2) + (3 \times \$1) + (1 \times \$3) + (1 \times \$3)$ ]. The difference between total revenue of \$15 and total cost of \$13 is an economic profit of \$2.

This economic profit is evidence that industry X is prosperous. It will become an **expanding industry** as new firms, attracted by the above-normal profits, are formed or shift from less profitable industries.

But the entry of new firms will be self-limiting. As new firms enter industry X, the market supply of product X will increase relative to the market demand. This will lower the market price of X, as in Figure 3.6c, and economic profit will gradually diminish and finally disappear. The market supply and demand conditions prevailing when economic profit reaches zero will determine the total amount of X produced. At this point the industry will be at its “equilibrium size,” at least until a further change in market demand or supply upsets that equilibrium.


**Losses and Declining Industries** But what if the initial market situation for product X were less favorable? Suppose that demand conditions in the product market were such that a firm could sell the 15 units of X at a price of just \$.75 per unit. Total revenue would then be \$11.25 (=  $15 \times \$.75$ ). After paying wage, rental, and interest costs of \$10, and figuring in the normal profit (a cost) of \$3, the firm’s total cost would again be \$13. But because its total revenue is only \$11.25, it would incur a loss of \$1.75 (=  $\$11.25 - \$13$ ).

Certainly, firms would not be attracted to this unprofitable **declining industry**. In fact, if these losses persisted, some of the firms in industry X would go out of business or migrate to more prosperous industries where normal or even economic profits prevailed. However, as that happened, the market supply of X would fall relative to the market demand. Product price would rise (as in Figure 3.6d), and the losses in industry X would eventually disappear. The industry would then stop shrinking. The supply and demand situation that prevailed when economic profit became zero would determine the total output of product X. Again, the industry would for the moment reach its equilibrium size.

**Consumer Sovereignty and Dollar Votes** In the market system, consumers are sovereign (in command). **Consumer sovereignty** works through consumer demand, and consumer demand is crucial in

determining the types and quantities of goods produced. Consumers spend the income they earn from the sale of their resources on the goods they are most willing and able to buy. Through these “**dollar votes**” consumers register their wants via the demand side of the product market. If the dollar votes for a certain product are great enough to provide a normal profit, businesses will produce that product. If there is an increase in consumer demand, so that enough dollar votes are cast to provide an economic profit, the industry will expand, as will the output of the product.

Conversely, a decrease in consumer demand—meaning fewer dollar votes cast for the product—will result in losses, and, in time, the industry will contract. As firms leave the industry, the output of the product will decline. Indeed, the industry may even cease to exist. Again, the consumers are sovereign; they collectively direct resources away from industries that are not meeting consumer wants.

The dollar votes of consumers determine not only which industries will continue to exist but also which products will survive or fail. Example: In 1991, responding to doctors and nutritionists, McDonald’s introduced its low-fat McLean burger. Good idea? Not really. Most consumers found the new product “too dry” and “not tasty,” so sales were meager. In 1996 McDonald’s quietly dropped the McLean burger from its menu at the same time that it introduced its higher-fat Arch Deluxe burger. In effect, consumers had collectively “voted out” the McLean burger.  4.3

**Market Restraints on Freedom** In short, firms are not really free to produce whatever they wish. Consumers’ buying decisions make the production of some products profitable and the production of other products unprofitable, thus restricting the choice of businesses in deciding what to produce. Businesses must match their production choices with consumer choices or else face losses and eventual bankruptcy.

The same holds true for resource suppliers. The demand for resources is a **derived demand**—derived, that is, from the demand for the goods and services that the resources help produce. There is a demand for autoworkers because there is a demand for automobiles. There is no demand for buggy-whip braiders because there is no demand for buggy whips. Resource suppliers are not free to allocate their resources to the production of goods that consumers do not value highly. Consumers register their

preferences on the demand side of the product market; producers and resource suppliers, prompted by their own self-interest, respond appropriately.

## How Will the Goods and Services Be Produced?

The market system steers resources to the industries whose products consumers want—simply because those industries survive, are profitable, and pay for resources. Within each industry, the firms that survive to do the producing also are the ones that are profitable. Because competition weeds out high-cost producers, continued profitability requires that firms produce their output at minimum cost. Achieving least-cost production necessitates, for example, that firms locate their production facilities optimally, considering such factors as resource prices, resource productivity, and transportation costs.

Least-cost production also means that firms must employ the most economically efficient technique of production in producing their output. The most efficient production technique depends on:

- The available technology, that is, the various combinations of resources that will produce the desired results.
- The prices of the needed resources.

A technique that requires just a few inputs of resources to produce a specific output may be highly *inefficient* economically *if* those resources are valued very highly in the market. *Economic efficiency means obtaining a particular output of product with the least input of scarce resources, when both output and resource inputs are measured in dollars and cents.* The combination of resources that will produce, say, \$15 worth of product X at the lowest possible cost is the most efficient.

Suppose there are three possible techniques for producing the desired \$15 worth of product X.

Suppose also that the quantity of each resource required by each production technique and the prices of the required resources are as shown in Table 4.1. By multiplying the required quantities of each resource by its price in each of the three techniques, we can determine the total cost of producing \$15 worth of X by means of each technique.

Technique 2 is economically the most efficient, because it is the least costly. It enables society to obtain \$15 worth of output by using a smaller amount of resources—\$13 worth—than the \$15 worth required by the two other techniques. Competition will dictate that producers use technique 2. Thus, the question of how goods will be produced is answered. They will be produced in a least-cost way.

A change in either technology *or* resource prices, however, may cause a firm to shift from the technology it is using. If the price of labor falls to \$.50, technique 1 becomes more desirable than technique 2. Firms will find they can lower their costs by shifting to a technology that uses more of the resource whose price has fallen. Exercise: Would a new technique involving 1 unit of labor, 4 of land, 1 of capital, and 1 of entrepreneurial ability be preferable to the techniques listed in Table 4.1, assuming the resource prices shown there? (**Key Question 7**)

## Who Will Get the Goods and Services?

The market system enters the picture in two ways when solving the problem of distributing total output. Generally, any product will be distributed to consumers on the basis of their ability and willingness to pay its existing market price. If the price of some product, say, a pocket calculator, is \$15, then buyers who are able and willing to pay that price will

**Table 4.1**  
**Three Techniques for Producing \$15 Worth of Product X**

Resource	Price per Unit of Resource	Units of Resource					
		Technique 1		Technique 2		Technique 3	
		Units	Cost	Units	Cost	Units	Cost
Labor	\$2	4	\$ 8	2	\$ 4	1	\$ 2
Land	1	1	1	3	3	4	4
Capital	3	1	3	1	3	2	6
Entrepreneurial ability	3	1	3	1	3	1	3
Total cost of \$15 worth of X			\$15		\$13		\$15

get a pocket calculator; those who are not, will not. This is the rationing function of equilibrium prices.

The ability to pay the equilibrium prices for pocket calculators and other products depends on the amount of income that consumers have along with their preferences for various goods. If they have sufficient income and want to spend their money on a particular good, they can have it. And the amount of income they have depends on (1) the quantities of the property and human resources they supply and (2) the prices those resources command in the resource market. Resource prices (wages, interest, rent, profit) are key in determining the size of each household's income and therefore each household's ability to buy part of the economy's output.

### How Will the System Accommodate Change?

Market systems are dynamic: Consumer preferences, technology, and supplies of resources all change. This means that the particular allocation of resources that is now the most efficient for a *specific* pattern of consumer tastes, range of technological alternatives, and amount of available resources will become obsolete and inefficient as consumer preferences change, new techniques of production are discovered, and resource supplies change over time. Can the market economy adjust to such changes and still use resources efficiently?

**Guiding Function of Prices** Suppose consumer tastes change. For instance, assume that consumers decide they want more fruit juice and less milk than the economy currently provides. Those changes in consumer tastes will be communicated to producers through an increase in demand for fruit and a decline in demand for milk. Fruit prices will rise and milk prices will fall.

Now, assuming that firms in both industries were enjoying precisely normal profits before these changes in consumer demand set in, the higher fruit prices will mean economic profit for the fruit industry and the lower milk prices will mean losses for the milk industry. Self-interest will induce new competitors to enter the prosperous fruit industry and will in time force firms to leave the depressed milk industry.

The economic profit that initially follows the increase in demand for fruit will not only induce that industry to expand but will also give it the revenue needed to obtain the resources essential to its growth. Higher fruit prices will permit fruit producers to pay

higher prices for resources, thereby increasing resource demand and drawing resources from less urgent alternative employment. The reverse occurs in the milk industry, where resource demand declines and fewer workers and other resources are employed. These adjustments in the economy are appropriate responses to the changes in consumer tastes. This is consumer sovereignty at work.

The market system is a gigantic communications system. Through changes in prices it communicates changes in such basic matters as consumer tastes and elicits appropriate responses from businesses and resource suppliers. By affecting product prices and profits, changes in consumer tastes direct the expansion of some industries and the contraction of others. Those adjustments are conveyed to the resource market as expanding industries demand more resources and contracting industries demand fewer; the resulting changes in resource prices guide resources from the contracting industries to the expanding industries.

This *directing* or **guiding function of prices** is a core element of the market system. Without such a system, some administrative agency such as a government planning board would have to direct businesses and resources into the appropriate industries. A similar analysis shows that the system can and does adjust to other fundamental changes—for example, to changes in technology and in the availability of various resources.

**Role in Promoting Progress** Adjusting to changes is one thing; initiating desirable changes is another. How does the market system promote technological improvements and capital accumulation—two changes that lead to greater productivity and a higher level of material well-being for society?

**Technological Advance** The market system provides a strong incentive for technological advance and enables better products and processes to brush aside inferior ones. An entrepreneur or firm that introduces a popular new product will gain revenue and economic profit. Technological advance also includes new and improved methods that reduce production or distribution costs. By passing part of its cost reduction on to the consumer through a lower product price, the firm can increase sales and obtain economic profit at the expense of rival firms. Moreover, the market system is conducive to the *rapid spread* of technological advance throughout an industry. Rival firms must follow the lead of the most innovative firm or else suffer immediate losses and

eventual failure. In some cases, the result is **creative destruction**: The creation of new products and production methods completely destroys the market positions of firms that are wedded to existing products and older ways of doing business. Example: The advent of personal computers and word processing software demolished the market for electric typewriters.

**Capital Accumulation** Most technological advances require additional capital goods. The market system provides the resources necessary to produce those goods by adjusting the product market and the resource market through increased dollar votes for capital goods. In other words, the market system acknowledges dollar voting for capital goods as well as for consumer goods.

But who will register votes for capital goods? Entrepreneurs and owners of businesses, as receivers of profit income, often use part of that income to purchase capital goods. Doing so yields even greater profit income in the future if the technological innovation is successful. Also, by paying interest or selling ownership shares, the entrepreneur and firm can attract some of the income of households to cast dollar votes for the production of more capital goods. (**Key Question 9**)

## ■ Competition and the “Invisible Hand”

In his 1776 book *The Wealth of Nations*, Adam Smith first noted that the operation of a market system creates a curious unity between private interests and social interests. Firms and resource suppliers, seeking to further their own self-interest and operating within the framework of a highly competitive market system, will simultaneously, as though guided by an “invisible hand,” promote the public or social interest. For example, we have seen that in a competitive environment, businesses use the least-costly combination of resources to produce a specific output because it is in their self-interest to do so. To act otherwise would be to forgo profit or even to risk business failure. But, at the same time, to use scarce resources in the least-costly (most efficient) way is clearly in the social interest as well.

In our more fruit juice–less milk illustration, it is self-interest, awakened and guided by the competitive market system, that induces responses appropriate to the change in society’s wants. Businesses seeking to make higher profits and to avoid losses, and resource suppliers pursuing greater monetary rewards, negotiate changes in the allocation of resources

and end up with the output that society demands. Competition controls or guides self-interest in such a way that it automatically, and quite unintentionally, furthers the best interests of society. The invisible hand ensures that when firms maximize their profits, they also maximize society’s output and income.

Of the many virtues of the market system three merit special emphasis:

- **Efficiency** The basic economic argument for the market system is that it promotes the efficient use of resources, by guiding them into the production of the goods and services most wanted by society. It forces the use of the most efficient techniques in organizing resources for production, and it encourages the development and adoption of new and more efficient production techniques.
- **Incentives** The market system encourages skill acquisition, hard work, and innovation. Greater work skills and effort mean greater production and higher incomes, which usually translate into a higher standard of living. Similarly, the assuming of risks by entrepreneurs can result in substantial profit incomes. Successful innovations generate economic rewards.
- **Freedom** The major noneconomic argument for the market system is its emphasis on personal freedom. In contrast to central planning, the market system coordinates economic activity without coercion. The market system permits—indeed, it thrives on—freedom of enterprise and choice. Entrepreneurs and workers are free to further their own self-interest, subject to the rewards and penalties imposed by the market system itself.

### QUICK REVIEW 4.3

- The output mix of the market system is determined by profits, which in turn depend heavily on consumer preferences. Economic profits cause efficient industries to expand; losses cause inefficient industries to contract.
- Competition forces industries to use the least-costly (most efficient) production methods.
- In a market economy consumer income and product prices determine how output will be distributed.
- Competitive markets reallocate resources in response to changes in consumer tastes, technological advances, and changes in supplies of resources.
- The “invisible hand” of the market system channels the pursuit of self-interest to the good of society.

## Shuffling the Deck

### **Economist Donald Boudreaux marvels at the way the market system systematically and purposefully arranges the world's tens of billions of individual resources.**

In *The Future and Its Enemies*, Virginia Postrel notes the astonishing fact that if you thoroughly shuffle an ordinary deck of 52 playing cards, chances are practically 100 percent that the resulting arrangement of cards has never before existed. *Never*. Every time you shuffle a deck, you produce an arrangement of cards that exists for the first time in history.

The arithmetic works out that way. For a very small number of items, the number of possible arrangements is small. Three items, for example, can be arranged only six different ways. But the number of possible arrangements grows very large very quickly. The number of different ways to arrange five items is 120 . . . for ten items it's 3,628,800 . . . for fifteen items it's 1,307,674,368,000.

The number of different ways to arrange 52 items is  $8.066 \times 10^{67}$ . This is a *big* number. No human can comprehend its enormousness. By way of comparison, the number of possible ways to arrange a mere 20 items is 2,432,902,008,176,640,000—a number larger than the total number of seconds that have elapsed since the beginning of time ten billion years ago—and this number is Lilliputian compared to  $8.066 \times 10^{67}$ .

What's the significance of these facts about numbers? Consider the number of different resources available in the world—my labor, your labor, your land, oil, tungsten, cedar, coffee beans, chickens, rivers, the Empire State Building, Windows 2000, the wharves at Houston, the classrooms at Oxford, the airport at Miami, and on and on and on. No one can possibly count all of

the different productive resources available for our use. But we can be sure that this number is at least in the tens of billions.

When you reflect on how incomprehensibly large is the number of ways to arrange a deck containing a mere 52 cards, the mind boggles at the number of different ways to arrange all the world's resources.

If our world were random—if resources combined together haphazardly, as if a giant took them all into his hands and tossed them down like so many [cards]—it's a virtual certainty that the resulting combination of resources would be useless. Unless this chance arrangement were quickly rearranged according to some productive logic, nothing worthwhile would be produced. We would all starve to death. Because only a tiny fraction of possible arrangements serves human ends, any arrangement will be useless if it is chosen randomly or with inadequate knowledge of how

each and every resource might be productively combined with each other.

And yet, we witness all around us an arrangement of resources that's productive and serves human goals. Today's arrangement of resources might not be perfect, but it is vastly superior to most of the trillions upon trillions of other possible arrangements.

How have we managed to get one of the minuscule number of arrangements that works? The answer is private property—a social institution that encourages mutual accommodation.

Private property eliminates the possibility that resource arrangements will be

random, for each resource owner chooses a course of action only if it promises rewards to the owner that exceed the rewards promised by all other available courses.

[The result] is a breathtakingly complex and productive arrangement of countless resources. This arrangement emerged over time (and is still emerging) as the result of billions upon billions of individual, daily, small decisions made by people seeking to better employ their resources and labor in ways that other people find helpful.

Source: Abridged from Donald J. Boudreaux, "Mutual Accommodation," *Ideas on Liberty*, May 2000, pp. 4–5. Reprinted with permission.



## SUMMARY

1. The market system—known also as the private-enterprise system or capitalism—is characterized by the private ownership of resources, including capital, and the freedom of individuals to engage in economic activities of their choice to advance their material well-being. Self-interest is the driving force of such an economy, and competition functions as a regulatory or control mechanism.
2. In the market system, markets and prices organize and make effective the many millions of individual decisions that determine what is produced, the methods of production, and the sharing of output.
3. Specialization, use of advanced technology, and the extensive use of capital goods are common features of market systems.
4. Functioning as a medium of exchange, money eliminates the problems of bartering and permits easy trade and greater specialization, both domestically and internationally.
5. Every economy faces Four Fundamental Questions: (a) What goods and services will be produced? (b) How will the goods and services be produced? (c) Who will get the goods and services? (d) How will the system used accommodate changes in consumer tastes, resource supplies, and technology?
6. The market system produces products whose production and sale yield total revenue sufficient to cover all costs, including a normal profit (a cost). It does not produce products that do not yield a normal profit, or more.
7. Economic profit indicates that an industry is prosperous and promotes its expansion. Losses signify that an industry is not prosperous and hasten its contraction.
8. Consumer sovereignty means that both businesses and resource suppliers are subject to the wants of consumers. Through their dollar votes, consumers decide on the composition of output.
9. Competition forces firms to use the lowest-cost and therefore the most economically efficient production techniques.
10. The prices that a household receives for the resources it supplies to the economy determine that household's income. This income determines the household's claim on the economy's output. Those who have income to spend get the products produced in the market system.
11. By communicating changes in consumer tastes to resource suppliers and entrepreneurs, the market system prompts appropriate adjustments in the allocation of the economy's resources. The market system also encourages technological advance and capital accumulation.
12. Competition, the primary mechanism of control in the market economy, promotes a unity of self-interest and social interests; as though directed by an invisible hand, competition harnesses the self-interest motives of businesses and resource suppliers to further the social interest.

## TERMS AND CONCEPTS

private property	division of labor	normal profit	guiding function of prices
freedom of enterprise	medium of exchange	economic profit	creative destruction
freedom of choice	barter	expanding industry	“invisible hand”
self-interest	money	declining industry	
competition	Four Fundamental Questions	consumer sovereignty	
roundabout production	economic costs	dollar votes	
specialization		derived demand	

## STUDY QUESTIONS

1. Explain each of the following statements:
  - a. The market system not only accepts self-interest as a fact of human existence; it relies on self-interest to achieve society's material goals.
  - b. The market system provides such a variety of desired goods and services precisely because no single individual or small group is deciding what the economy will produce.
  - c. Entrepreneurs and businesses are at the helm of the economy, but their commanders are consumers.
2. Why is private property, and the protection of property rights, so critical to the success of the market system?
3. What are the advantages of “roundabout” production? What is meant by the term “division of labor”?

What are the advantages of specialization in the use of human and material resources? Explain: “Exchange is the necessary consequence of specialization.”

4. What problem does barter entail? Indicate the economic significance of money as a medium of exchange. What is meant by the statement “We want money only to part with it.”?
5. Evaluate and explain the following statements:
  - a. The market system is a profit-and-loss system.
  - b. Competition is the indispensable disciplinarian of the market economy.
  - c. Production methods that are inferior in the engineering sense may be the most efficient methods in the economic sense, once resource prices are considered.
6. Explain the meaning and implications of the following quotation:

The beautiful consequence of the market is that it is its own guardian. If output or prices or certain kinds of remuneration stray away from their socially ordained levels, forces are set into motion to bring them back to the fold. A curious paradox thus ensues: the market, which is the acme of individual economic freedom, is the strictest taskmaster of all. One may appeal the ruling of a planning board or win the dispensation of a [government] minister; but there is no appeal, no dispensation, from the anonymous pressures of the market mechanism. Economic freedom is thus more illusory than at first appears. One can do as one pleases in the market. But if one pleases to do what the market disapproves, the price of individual freedom is economic ruin.<sup>1</sup>

7. **Key Question** Assume that a business firm finds that its profit will be at a maximum when it produces \$40 worth of product A. Suppose also that each of the three techniques shown in the following table will produce the desired output:

Resource	Price per Unit of Resource	Resource Units Required		
		Technique 1	Technique 2	Technique 3
Labor	\$3	5	2	3
Land	4	2	4	2
Capital	2	2	4	5
Entrepreneurial ability	2	4	2	4

<sup>1</sup>Robert L. Heilbroner, *The Worldly Philosophers*, 7th ed. (New York: Simon & Schuster, 1999), pp. 57–58.

- a. With the resource prices shown, which technique will the firm choose? Why? Will production entail profit or losses? Will the industry expand or contract? When will a new equilibrium output be achieved?
  - b. Assume now that a new technique, technique 4, is developed. It combines 2 units of labor, 2 of land, 6 of capital, and 3 of entrepreneurial ability. In view of the resource prices in the table, will the firm adopt the new technique? Explain your answer.
  - c. Suppose that an increase in the labor supply causes the price of labor to fall to \$1.50 per unit, all other resource prices remaining unchanged. Which technique will the producer now choose? Explain.
  - d. “The market system causes the economy to conserve most in the use of resources that are particularly scarce in supply. Resources that are scarcest relative to the demand for them have the highest prices. As a result, producers use these resources as sparingly as is possible.” Evaluate this statement. Does your answer to part c, above, bear out this contention? Explain.
8. Suppose the demand for bagels rises dramatically while the demand for breakfast cereal falls. Briefly explain how the competitive market economy will make the needed adjustments to reestablish an efficient allocation of society’s scarce resources.
  9. **Key Question** Some large hardware stores such as Home Depot boast of carrying as many as 20,000 different products in each store. What motivated the producers of those products—everything from screwdrivers to ladders to water heaters—to make them and offer them for sale? How did the producers decide on the best combinations of resources to use? Who made those resources available, and why? Who decides whether these particular hardware products should continue to get produced and offered for sale?
  10. In a single sentence, describe the meaning of the phrase “invisible hand.”
  11. **(Last Word)** What explains why millions of economic resources tend to get arranged logically and productively rather than haphazardly and unproductively?
  12. **Web-Based Question: Sparkly things—interested in buying one?** Go to the Internet auction site eBay at [www.ebay.com/index.html](http://www.ebay.com/index.html) and click the category Jewelry and Gemstones. How many diamonds are for sale at the moment? How many rubies, sapphires, and opals? Note the wide array of sizes and prices of the gemstones. In what sense is there competition among the sellers in these markets? How does that competition influence prices? In what sense is there

competition among buyers? How does that competition influence prices? Do you see something interesting there or elsewhere on eBay? Go ahead and buy it!

13. **Web-Based Question: *Barter and the IRS*** Bartering occurs when goods or services are exchanged without the exchange of money. For some, barter's popularity is that it enables them to avoid paying taxes to the government. How might such

avoidance occur? Does the Internal Revenue Service (IRS), [www.irs.ustreas.gov/](http://www.irs.ustreas.gov/), treat barter as taxable or nontaxable income? (Click Taxpayer Help and Education, then Tele-Tax Topics, and then Types of Income.) How is the value of a barter transaction determined? What are some IRS barter examples? What does the IRS require of the members of so-called barter exchanges?