

## Introduction

*I've often wondered what goes into a hot dog. Now I know and I wish I didn't.*  
—William Zinsser

If each of us could get all the food, clothing, and toys we want without working, no one would study economics. Unfortunately, most of the good things in life are scarce—we can't all have as much as we want. Thus scarcity is the mother of economics.

**Microeconomics** is the study of how individuals and firms make themselves as well off as possible in a world of scarcity and the consequences of those individual decisions for markets and the entire economy. In studying microeconomics, we examine how individual consumers and firms make decisions and how the interaction of many individual decisions affects markets.

Microeconomics is often called *price theory* to emphasize the important role that prices play. Microeconomics explains how the actions of all buyers and sellers determine prices and how prices influence the decisions and actions of individual buyers and sellers.

1. **Microeconomics: the allocation of scarce resources:** Microeconomics is the study of the allocation of scarce resources.
2. **Models:** Economists use models to make testable predictions.
3. **Uses of microeconomic models:** Individuals, governments, and firms use microeconomic models and predictions in decision making.

*In this chapter,  
we examine  
three main  
topics*

### 1.1 MICROECONOMICS: THE ALLOCATION OF SCARCE RESOURCES

Individuals and firms allocate their limited resources to make themselves as well off as possible. Consumers pick the mix of goods and services that makes them as happy as possible given their limited wealth. Firms decide which goods to produce, where to produce them, how much to produce to maximize their profits, and how to produce those levels of output at the lowest cost by using more or less of various inputs such as labor, capital, materials, and energy. The owners of a depletable natural resource such as oil decide when to use it. Government decision makers—to benefit consumers, firms, or government bureaucrats—decide which goods and services the government produces and whether to subsidize, tax, or regulate industries and consumers.

**Trade-Offs**

People make trade-offs because they can't have everything. A society faces three key trade-offs:

- **Which goods and services to produce:** If a society produces more cars, it must produce fewer of other goods and services, because there are only so many *resources*—workers, raw materials, capital, and energy—available to produce goods.
- **How to produce:** To produce a given level of output, a firm must use more of one input if it uses less of another input. Cracker and cookie manufacturers switch between palm oil and coconut oil, depending on which is less expensive.
- **Who gets the goods and services:** The more of society's goods and services you get, the less someone else gets.

**Who Makes the Decisions**

These three allocation decisions may be made explicitly by the government or may reflect the interaction of independent decisions by many individual consumers and firms. In the former Soviet Union, the government told manufacturers how many cars of each type to make and which inputs to use to make them. The government also decided which consumers would get a car.

In most other countries, how many cars of each type are produced and who gets them are determined by how much it costs to make cars of a particular quality in the least expensive way and how much consumers are willing to pay for them. More consumers would own a handmade Rolls-Royce and fewer would buy a mass-produced Ford Taurus if a Rolls were not 21 times more expensive than a Taurus.

**Application****OREGON DECIDES WHICH MEDICAL TREATMENTS TO PROVIDE**

In 1989, to restrain the skyrocketing costs of Medicaid, which provides health care for low-income people, Oregon excluded some previously covered poor people. Almost immediately, state decision makers changed their mind. They decided that rather than reduce the number of poor people who receive aid, the government would further limit the range of services provided.

After a great deal of debate, the new plan went into effect in 1994. The state ranked 688 medical procedures using factors that included a treatment's medical effectiveness, its cost, and subjective social values about which treatments or conditions are most important to treat.

Medicaid covered only the top 568 of these procedures. Treatments were provided for all major diseases of women and children; all preventive and screening services; some treatments not currently covered by Medicaid requirements, such as dental procedures, hospice services, prescription drugs, most transplants, and routine physicals; preventive services such as maternity and newborn care and immunizations; and comfort care and diagnostic services. The plan did not pay to treat conditions that get better on their own, such as a viral sore throat, dizziness, and benign cysts in the eye; conditions for which home treatments are effective; and conditions for which treatment is generally ineffective, such as aggressive medical intervention for advanced cancer.

By 1999, the plan was being criticized on the grounds that there was little medical evidence to support the government's choice of which procedures to cover, that only half of the originally uninsured population was being covered, and that costs had risen 160% in the five years since the plan took effect. To avoid bankruptcy, the state further reduced the number of covered conditions by 32 and started requiring that recipients pay a fixed amount per year. In 2002, about 75% of all Medicaid recipients in Oregon received care in their homes or in community centers rather than in nursing homes. In contrast, three-quarters of Medicaid payments in Georgia go to nursing homes.

Thus Oregon's government makes two of the three main allocation decisions itself rather than leaving these decisions to individuals.<sup>1</sup> The government decides who gets medical care: It provides some care to more Oregonians than just the poorest of the poor. The government also decides which services are provided.<sup>2</sup>

### Prices Determine Allocations

An Economist's Theory of Reincarnation: *If you're good, you come back on a higher level. Cats come back as dogs, dogs come back as horses, and people—if they've been real good like George Washington—come back as money.*

Prices link the decisions about *which goods and services to produce, how to produce them, and who gets them*. Prices influence the decisions of individual consumers and firms, and the interactions of these decisions by consumers, firms, and the government determine price.

Interactions between consumers and firms take place in a **market**, which is an exchange mechanism that allows buyers to trade with sellers. A market may be a town square where people go to trade food and clothing, or it may be an international telecommunications network over which people buy and sell financial securities. Typically, when we talk about a single market, we refer to trade in a single good or group of goods that are closely related, such as soft drinks, movies, novels, or automobiles.<sup>3</sup>

<sup>1</sup>Since 1997, Oregon has been the only state to allow physician-assisted suicide. In 2002, the U.S. Ninth Circuit Court of Appeals rejected U.S. Attorney General John Ashcroft's challenge to Oregon's law (though he has appealed this decision). Attorney General Ashcroft opposes giving individuals such choices. (Presumably his objection to this law has nothing to do with his losing a U.S. Senate race to a dead man in 2000.)

<sup>2</sup>Sources for Applications appear at the end of the book.

<sup>3</sup>We use the term *market* loosely to illustrate economic concepts rather than to provide a legal definition. For example, when we say that "an increase in the price of gasoline in the Chicago market affects the price of gasoline in the St. Louis market," we mean that gasoline prices in the two cities are related. Lawyers use a more explicit definition of a market that turns on exactly how closely these prices are related. Whether there are two separate markets or a single combined market is a key issue in many legal cases.

*Most of this book concerns how prices are determined within a market. We show that the number of buyers and sellers in a market and the amount of information they have help determine whether the price equals the cost of production. We also show that if there is no market—and hence no market price—serious problems, such as high levels of pollution, result.*

## Application

### TWINKIE TAX

There are proposals in many U.S., Canadian, U.K., and Australian jurisdictions to impose a “Twinkie tax” on unhealthful fatty and sweet foods to reduce obesity and cholesterol problems, particularly among children. According to one survey, 45% of adults would support a 1¢ tax per pound of soft drinks, chips, and butter, with the revenues used to fund health education programs.

Many proponents and opponents of these new laws seem unaware that 19 U.S. states and cities already have taxes on soft drinks, candy, chewing gum, or snack foods such as potato chips (Jacobson and Brownell, 2000). Since 1933, California has imposed a 7.25% sales tax on soft drinks, which currently raises about \$218 million in tax revenues. From 1951 on, West Virginia has had a 1¢ tax per half-liter of carbonated and noncarbonated soft drinks, fruit drinks, and chocolate milk. Since 1961, Texas has imposed a 6.25% tax on these soft drinks and candy. In Canada, the federal government and seven provinces apply a sales tax to soft drinks, candy, and snack foods but not to other foods. In 2002, Los Angeles and several other school districts banned soft-drink sales.

New taxes will affect *which foods are produced*, as firms offer new low-fat and low-sugar programs, and *how fast-foods are produced*, as manufacturers reformulate their products to lower their tax burden. These taxes will also influence *who gets these goods* as consumers, especially children, substitute to less expensive, untaxed products.

## 1.2

## MODELS

*Everything should be made as simple as possible, but not simpler.*

—Albert Einstein

To *explain* how individuals and firms allocate resources and how market prices are determined, economists use a **model**: a description of the relationship between two or more economic variables. Economists also use models to *predict* how a change in one variable will affect another.

## Application

## INCOME THRESHOLD MODEL AND CHINA

According to an *income threshold model*, no one who has an income level below a threshold buys a particular consumer durable, which is a good that can be used for long periods of time such as a refrigerator or car. The theory also holds that almost everyone whose income is above the threshold does buy the durable.

If this theory is correct, we predict that, as most people's incomes rise above that threshold in less-developed countries, consumer durable purchases will go from near zero to large numbers virtually overnight. This prediction is consistent with evidence from Malaysia, where the income threshold for buying a car is about \$4,000.

Given such evidence from other countries, many firms believe that this model's predictions will apply to China. Incomes are rising rapidly in China and are approaching the threshold levels for many types of durable goods. As a result, these companies are predicting that the greatest consumer durable goods sales boom in history will take place there over the next decade. Anticipating this boom, these companies have greatly increased their investments in durable goods manufacturing plants in China. Annual foreign investments went from \$916 million a year in 1983 to more than \$111 billion in 1993 (but fell to \$41 billion by 1999 due to China's government controls). Anticipating this growth potential, even traditional political opponents of the People's Republic—Taiwan, South Korea, and Russia—have been investing in China.

Simplifications  
by Assumption

We stated the income threshold model verbally, but we could have presented it using graphs or mathematics. Regardless of how the model is described, an economic model is a simplification of reality that contains only its most important features. Without simplifications, it is difficult to make predictions because the real world is too complex to analyze fully.

By analogy, if the manual accompanying your new videocassette recorder (VCR) has a diagram showing the relationships between all the parts in the VCR, the diagram will be overwhelming and useless. In contrast, if it shows a photo of the buttons on the front of the machine with labels describing the purpose of each button, the manual is useful and informative.

Economists make many *assumptions* to simplify their models.<sup>4</sup> When using the income threshold model to explain car purchasing behavior in Malaysia, we *assume*

<sup>4</sup>An economist, an engineer, and a physicist are stranded on a desert island with a can of beans but no can opener. How should they open the can? The engineer proposes hitting the can with a rock. The physicist suggests building a fire under it to build up pressure and burst the can open. The economist thinks for a while and then says, "Assume that we have a can opener. . . ."

that factors other than income, such as the color of cars, are irrelevant to the decision to buy cars. Therefore, we ignore the color of cars that are sold in Malaysia in describing the relationship between average income and the number of cars consumers want. If this assumption is correct, by ignoring color, we make our analysis of the auto market simpler without losing important details. If we're wrong and these ignored issues are important, our predictions may be inaccurate.

Throughout this book, we start with strong assumptions to simplify our models. Later, we add complexities. For example, in most of the book, we assume that consumers know the price each firm charges. In many markets, such as the New York Stock Exchange, this assumption is realistic. It is not realistic in other markets, such as the market for used automobiles, in which consumers do not know the prices each firm charges. To devise an accurate model for markets in which consumers have limited information, we need to add consumer uncertainty about price into the model, as we do in Chapter 19.

## Testing Theories

Economic *theory* is the development and use of a model to test *hypotheses*, which are predictions about cause and effect. We are interested in models that make clear, testable predictions, such as “If the price rises, the quantity demanded falls.” A theory that said “People’s behavior depends on their tastes, and their tastes change randomly at random intervals” is not very useful because it does not lead to testable predictions.

Economists test theories by checking whether predictions are correct. If a prediction does not come true, they may reject the theory.<sup>5</sup> Economists use a model until it is refuted by evidence or until a better model is developed.

A good model makes sharp, clear predictions that are consistent with reality. Some very simple models make sharp predictions that are incorrect, and other more complex models make ambiguous predictions—any outcome is possible—which are untestable. The skill in model building is to chart a middle ground.

The purpose of this book is to teach you how to think like an economist in the sense that you can build testable theories using economic models or apply existing models to new situations. Although economists think alike in that they develop and use testable models, they often disagree. One may present a logically consistent argument that prices will go up next quarter. Another, using a different but equally logical theory, may contend that prices will fall. If the economists are reasonable, they agree that pure logic alone cannot resolve their dispute. Indeed, they agree that they’ll have to use empirical evidence—facts about the real world—to find out which prediction is correct.

Although one economist’s model may differ from another’s, a key assumption in most microeconomic models is that individuals allocate their scarce resources so as to make themselves as well off as possible. Of all affordable combinations of goods,

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<sup>5</sup>We can use evidence on whether a theory’s predictions are correct to *refute* the theory but not to *prove* it. If a model’s prediction is inconsistent with what actually happened, the model must be wrong, so we reject it. Even if the model’s prediction is consistent with reality, however, the model’s prediction may be correct for the wrong reason. Hence we cannot prove that the model is correct—we can only fail to reject it.

consumers pick the bundle of goods that gives them the most possible enjoyment. Firms try to maximize their profits given limited resources and existing technology. That resources are limited plays a crucial role in these models. Were it not for scarcity, people could consume unlimited amounts of goods and services, and sellers could become rich beyond limit.

As we show throughout this book, the maximizing behavior of individuals and firms determines society's three main allocation decisions: which goods are produced, how they are produced, and who gets them. For example, diamond-studded pocket combs will be sold only if firms find it profitable to sell them. The firms will make and sell these combs only if consumers value the combs at least as much as it costs the firm to produce them. Consumers will buy the combs only if they get more pleasure from the combs than they would from the other goods they could buy with the same resources.

**Positive  
Versus  
Normative**

The use of models of maximizing behavior sometimes leads to predictions that seem harsh or heartless. For instance, a World Bank economist predicted that, if an African government used price controls to keep the price of food low during a drought, food shortages would occur and people would starve. The predicted outcome is awful, but the economist was not heartless. The economist was only making a scientific prediction about the relationship between cause and effect: Price controls (cause) lead to food shortages and starvation (effect).

Such a scientific prediction is known as a **positive statement**: a testable hypothesis about cause and effect. "Positive" does not mean that we are certain about the truth of our statement—it only indicates that we can test the truth of the statement.

If the World Bank economist is correct, should the government control prices? If the government believes the economist's predictions, it knows that the low prices help those consumers who are lucky enough to be able to buy as much food as they want while hurting both the firms that sell food and the people who are unable to buy as much food as they want, some of whom may die. As a result, the government's decision whether to use price controls turns on whether the government cares more about the winners or the losers. In other words, to decide on its policy, the government makes a value judgment.

Instead of first making a prediction and testing it and then making a value judgment to decide whether to use price controls, the government could make a value judgment directly. The value judgment could be based on the belief that "because people *should* have prepared for the drought, the government *should* not try to help them by keeping food prices low." Alternatively, the judgment could be based on the view that "people *should* be protected against price gouging during a drought, so the government *should* use price controls."

These two statements are *not* scientific predictions. Each is a value judgment or **normative statement**: a conclusion as to whether something is good or bad. A normative statement cannot be tested because a value judgment cannot be refuted by evidence. It is a prescription rather than a prediction. A normative statement concerns what somebody believes *should* happen; a positive statement concerns what *will* happen.



Although a normative conclusion can be drawn without first conducting a positive analysis, a policy debate will be more informed if positive analyses are conducted first.<sup>6</sup> Oregon's Health Services Commission, in deciding which medical treatments to provide poor people, used both positive analyses—scientific evidence on the cost and effectiveness of treatment—and normative judgments—subjective judgments about which treatments or conditions were more important.

Suppose your normative belief is that the government should help the poor. Should you vote for a candidate who advocates a higher minimum wage (a law that requires that firms pay wages at or above a specified level), a European-style welfare system (guaranteeing health care, housing, and other basic goods and services), an end to our current welfare system, a negative income tax (in which the less income a person has, the more the government gives that person), or job training programs? Positive economic analysis can be used to predict whether these programs will benefit poor people but not whether they are good or bad. Using these predictions and your value judgment, you can decide for whom to vote.

Economists' emphasis on positive analysis has implications for what we study and even our use of language. For example, many economists stress that they study people's *wants* rather than their *needs*. Although people need certain minimum levels of food, shelter, and clothing to survive, most people in developed economies have enough money to buy goods well in excess of the minimum levels necessary to maintain life. Consequently, in wealthy countries, calling something a "need" is often a value judgment. You almost certainly have been told by some elder that "you *need* a college education." That person was probably making a value judgment—"you *should* go to college"—rather than a scientific prediction that you will suffer terrible economic deprivation if you do not go to college. We can't test such value judgments, but we can test a hypothesis such as "One-third of the college-age population *wants* to go to college at current prices."

### 1.3 USES OF MICROECONOMIC MODELS

*Have you ever imagined a world without hypothetical situations?* —Steven Wright

Because microeconomic models *explain* why economic decisions are made and allow us to make *predictions*, they can be very useful for individuals, governments, and firms in making decisions. Throughout this book, we consider examples of how microeconomics aids in actual decision making. Here we briefly look at some uses by individuals and governments and then examine a series of recent decisions by General Motors.

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<sup>6</sup>Some economists draw the normative conclusion that, as social scientists, we economists *should* restrict ourselves to positive analyses. Others argue that we shouldn't give up our right to make value judgments just like the next person (who happens to be biased, prejudiced, and pigheaded, unlike us).



**Uses of  
Microeconomics  
by Individuals  
and  
Governments**

Individuals use microeconomics to make purchasing and other decisions. In Chapter 5, we examine how inflation and adjustments for inflation affect individuals. In Chapter 16, we show how to determine whether it pays financially to go to college.

Another use of microeconomics is helping you decide for whom to vote based on candidates' views on economic issues. Does your candidate advocate increasing government spending on education or reducing regulation of businesses to stimulate growth? Will these policies actually stimulate growth? Will they have other desirable or undesirable side effects?

Your government's elected and appointed officials use (or could use) economic models in many ways. Recent administrations have placed increased emphasis on economic analysis. Today, economic and environmental impact studies are required before many projects can commence. The President's Council of Economic Advisers and other federal economists analyze and advise national government agencies on the likely economic effects of all major policies.

Indeed, probably the major use of microeconomic models by governments is to predict the probable impact of a policy before it is adopted. In Chapter 3, we show how to predict the likely impact of a tax on the prices consumers pay and on the tax revenues raised.

In some cases, microeconomic analysis suggests solutions to problems, such as how countries may protect themselves against harmful coordinated actions of firms. Groups of firms—including many international groups of producers of commodities such as oil, mercury, peppers, and diamonds—try to coordinate their activities to raise prices. Some of these organizations, called *cartels*, keep prices above noncartel levels for years, while others fail miserably. Microeconomic theory predicts which cartels will succeed and which will fail. By using this theory, governments can act to undermine cartels by prohibiting certain actions by firms or by altering their buying behavior, as we discuss in Chapter 13. For example, how governments let firms bid on major projects may determine whether a cartel succeeds or fails.

**Application****PUTTING SATURN IN ORBIT**

Many firms have staffs of economists to make predictions and evaluate policies. In Chapter 5, we discuss how General Motors (GM) uses a study by one of its staff economists to predict consumer demand for its cars.

Microeconomic analysis was particularly important to GM when it started selling its line of Saturn cars in 1991. The company broke a lot of its old rules. It built Saturns differently from the way it built its other cars and changed its relationship with its dealers so that they would sell and service the cars in a new way. Did GM's gamble work?

**Manufacturing Costs.** Starting up the Saturn line was a major risk; GM spent an estimated \$5 billion to get Saturn going. (We examine investment policies in Chapter 16.) To keep manufacturing costs down, GM built a new plant that uses modern technology and a team approach and other Japanese-style management

methods to assemble cars. One of these, just-in-time inventories, allows GM to keep its inventory costs down by having suppliers ready to deliver parts almost immediately when needed. The Saturn plant produces relatively few models, and its sharing of engines and other major parts reduces production costs. (We analyze how firms minimize costs in Chapter 7.)

In building its new plant and designing its new car, GM had to take into account the federal government's emissions standards and other pollution regulations. (In Chapter 18, we analyze how firms react to such regulations and the effects of the regulations.)

Some industry experts believe that GM lost \$500 million a year in the first few years because it couldn't make enough cars to cover its investment. Does it make sense to run a plant at a loss for a while? (We first examine shut-down decisions in Chapter 8.) In keeping the plant operating, GM was counting on Saturn managers' and workers' gaining experience in producing cars, which would lower the costs of production in the future. (In Chapter 7, we discuss learning by doing.)

**Pricing.** GM does not sell Saturns the way it sells its other cars. Knowing consumers' tastes with respect to the cars' features, service, and purchasing negotiations was an essential part of GM's new strategy. (Consumer decision making is analyzed in Chapters 4 and 5.)

Saturn's most striking marketing innovation was the "no-dicker sticker." Saturn dealers charge a fixed price for a car—they don't negotiate with customers as do most dealers. Why? One reason is that, according to a J. D. Power survey, 78% of American car buyers dislike negotiating for a new car. At the very least, this negotiation process is time consuming.

Why do traditional firms want to bargain with customers? It allows them to charge customers different prices. Such price discrimination can raise a firm's profits. (We address price discrimination in Chapter 12.)

In the past, some consumers who did not bargain well or had little information about costs and prices paid substantially more than the dealer's cost for a car. One dealer claims that car dealers often marked up their price over cost by 24% in the 1960s. Now, information about dealers' costs is available on the Internet. Using such information, some consumers are able to strike better deals than they could previously. (In Chapter 19, we examine the roles of unequal information on the prices consumers pay.) As a result, price markups have fallen to about 6.7% over cost.

Saturn's approach is slowly winning converts. A few dealers of other brands have used no-dicker prices. In 2002, about 2,000 dealers used no-dicker pricing strategies.

**Dealers.** GM wanted its Saturn dealers not only to charge a fixed price, but also to provide superior service. With superior service, they could compete more effectively with dealers of high-quality imported cars and attract repeat customers. How could GM induce its dealers to provide superior service?

(Chapter 20 discusses how one firm gives another incentives to ensure the desired behavior.)

Because of its pricing method and its emphasis on service, by the end of the millennium, Saturn was one of consumers' top-rated brands for service, along with Cadillac, Jaguar, Volvo, Land Rover, Mercedes-Benz, and Lexus. When Saturn held a "homecoming" in its fifth year of operation, between 30,000 and 40,000 Saturn owners, including a contingent from Japan, convened at the company's factory south of Nashville.

GM ensured that its dealers would earn unusually high profits by limiting the number of Saturn dealers. Initially, GM had only 230 Saturn dealers nationally, compared with 5,000 Chevy dealers. As a result, a Saturn dealer's markup of its price above its costs is greater than it would be if the dealer had to compete with many other local Saturn dealers (see Chapter 13). According to one expert, the typical Saturn price markup is 13% over dealer costs, whereas traditional dealer markups average about half that.

Are higher dealer prices and profits good for GM? On the one hand, the higher retail price cuts current sales of Saturns, which hurts GM. On the other hand, the resulting high profits give dealers an incentive to provide superior service. As one dealer said, "If there were more Saturn dealers, with more competition among ourselves, we couldn't afford to give extra service. The trouble with non-Saturn GM dealers is that they cut their own throats by charging too little and taking most profit out of deals." Extra service should increase the demand for Saturns, which helps GM.

Because its sales staff does not have to spend time negotiating with each customer, Saturn dealers need fewer salespeople. Some dealers calculate that traditional dealers need 30% to 40% more sales staff. Thus the ratio of labor to capital in traditional dealers is different from that in fixed-price dealers. (Chapters 6 and 7 analyze substitution between inputs.)

At traditional dealerships, a salesperson gets a commission of about a quarter of the markup on a final sale. Because they make money from each extra sale, these salespeople use cold calls (phone calls to strangers) and personal contacts to attract customers. In contrast, Saturn sales staff are paid a salary. As a result, Saturn salespeople have less incentive to pursue customers aggressively than salespeople who earn a commission (see Chapter 20). To offset this effect, some Saturn dealers boost advertising to generate showroom traffic (see Chapter 14).

**Strategy.** Why did GM change the way it did business? The reason was that its old approach was not working: GM was losing business and profits to other auto manufacturers.

By the very way it designed the Saturn, GM went after a particular type of customer. Only relatively short customers can fit comfortably in a Saturn. Customers who want sporty or other special features are not going to buy a Saturn. Saturn was apparently designed for customers who want to minimize the hassles in their life. A Saturn customer does not have to negotiate over price



and is assured a well-built, well-serviced car—with a loaner available if repairs take a long time. (Chapter 13 discusses how firms aim at specific market niches.) Noting that consumers were switching to larger cars, Saturn decided in 1999 to extend its line to include full-size cars and sport utility vehicles. In 2003, Saturn introduced the Ion, a new small car.

Other dealers and auto manufacturers did not stand still. In picking its strategies, a firm forms beliefs about how its rival will react to its actions (see Chapters 13 and 14). When GM drops its wholesale price, Ford and Honda respond to prevent the loss of sales and profits. When GM started selling Saturns and some of its other cars at fixed prices, Ford began using fixed prices on two of its vehicles. Rival manufacturers have also aimed for the customer profile that Saturn targeted. (Chapter 13 examines how large firms compete with each other in setting their prices or quantities. Chapter 14 looks at more complex investment strategies that firms use to gain at the expense of their competitors.)

Thus GM made many production, marketing, and strategy decisions based on microeconomic models and predictions. The test that GM uses to determine whether its models and predictions are correct is whether Saturn makes a profit.

## Summary



1. **Microeconomics: the allocation of scarce resources:** Microeconomics is the study of the allocation of scarce resources. Consumers, firms, and the government must make allocation decisions. The three key trade-offs a society faces are which goods and services to produce, how to produce them, and who gets them. These decisions are interrelated and depend on the prices that consumers and firms face and on government actions. Market prices affect the decisions of individual consumers and firms, and the interaction of the decisions of individual consumers and firms determines market prices. The organization of the market, especially the number of firms in the market and the information consumers and firms have, plays an important role in determining whether the market price is equal to or higher than marginal cost.
2. **Models:** Models based on economic theories are used to predict the future or to answer questions

about how some change, such as a tax increase, affects various sectors of the economy. A good theory is simple to use and makes clear, testable predictions that are not refuted by evidence. Most microeconomic models are based on maximizing behavior. Economists use models to construct *positive* hypotheses concerning how a cause leads to an effect. These positive questions can be tested. In contrast, *normative* statements, which are value judgments, cannot be tested.

3. **Uses of microeconomic models:** Individuals, governments, and firms use microeconomic models and predictions to make decisions. For example, to maximize its profits, a firm needs to know consumers' decision-making criteria, the trade-offs between various ways of producing and marketing its product, government regulations, and other factors. For large companies, beliefs about how a firm's rivals will react to its actions play a critical role in how it forms its business strategies.