The Economic Way of Reasoning: Models and Marginal Analysis

A chief goal of economic analysis is to help us understand the functions of the economy and the forces influencing the choices people make under the constraints they face. Much of economic theory is based on the premise that our behavior is quite predictable. Economists often assume that we systematically pursue certain objectives, such as seeking the greatest satisfaction from our purchases or the highest profit from the sale of a product.

A method economists use to study decision making, **marginal analysis**, is based on the idea that it's possible for you to gain from engaging in more of an activity if the extra benefits exceed the extra costs of doing so.

We need to establish cause-and-effect relationships so we can understand the basic economic forces and the way individuals cope with the problem of scarcity. Therefore, we use theories to interpret actions and outcomes. A **theory** is a framework that helps us understand the relationships between cause and effect. It is a simplification of actual relationships. The purpose of theory in all scientific analysis is to explain the causes of phenomena we observe. To conduct economic analysis, we frequently need to make assumptions about the economic environment and human motivation. Economic **variables** are quantities or dollar amounts that can have more than one value. For example, the price of an item is an economic variable representing what we must give up in exchange for each unit of that item. Price is an economic variable because it can go up or down as changes occur in the economy. The number of unemployed workers is another economic variable that fluctuates. We develop economic theories to explain such important economic variables as the production, prices, and consumption of goods and services; the employment of workers; and levels of saving and investment.

An **economic model** is a simplified way of expressing how some sector of the economy functions. It contains assumptions that establish relationships among economic variables. It uses logic, graphs, or mathematics to determine the consequences of the assumptions. In this way, the model can make predictions about

the changes in decisions affecting economic variables that result from a change in economic conditions.

An economic model is abstract because it doesn't attempt to capture all of the relevant influences on behavior. For example, an economic model set up to explain the rates of marriage and divorce may assume that the earnings differences between males and females have an effect on marriage and divorce. The model may assume that as the gap between earnings is reduced, the gains from marriage decline. This implies that as more women pursue careers and their earning potential reaches that of men, the marriage rate will decline and the divorce rate will go up. Similarly, an assumption that sellers seek to maximize profit from the sale of their product may not capture the full complexity of business motivation. Business owners may have other goals in addition to earning profit. They may also be concerned with their public image, their sales revenue, or the dividends they pay their stockholders. However, by concentrating on only one goal, even though this is not realistic, a model can more clearly unveil basic forces of cause and effect.

Suppose we construct a theory about the relationship between population growth and the apartment rents tenants pay in a certain city. We hypothesize that an increase in population growth in a booming area, will increase rents for apartments, other things being equal. The phrase *other things being equal,* or its Latin equivalent, ***ceteris paribus***, is used to acknowledge that influences other than the one whose effect is being analyzed must be controlled for testing the hypothesis.

A key component of any economic model is the assumptions it makes about the way people behave. **Behavioral assumptions** establish the motivations of individuals so we can understand cause-and-effect relationships among economic variables. For example, it's typically assumed that the owners of business firms seek to maximize their annual profits from the sale of a product. Once we make this assumption, we can use a model to trace out the impact of a change in an economic variable, such as the wages paid to a firm's employees, on the quantity of a product the firm is willing to sell. It's also commonly assumed that consumers act to obtain the most satisfaction possible from purchasing goods and services. We can use this

assumption to examine how changes in such economic variables as the price of an item affect the quantity consumers are willing and able to purchase.

When you seek to gain by undertaking actions for which the extra benefit exceeds the associated extra cost, you're engaging in **rational behavior**. You evaluate the benefits of actions subjectively in relation to your personal objectives. The cost of an action you take is the value you place on the sacrifice you must make to enjoy the benefits of the action. Scarcity implies that you can obtain a benefit only at the cost of forgoing an alternative opportunity.

Thus, if you want to act in the dramatic society's new play and begin training for the cross-country squad, and the two activities are scheduled at the same time, you decide to bask in the glow of the footlights at the cost of the chance to win glory on foot. You behave rationally when you actively pursue your self-interest, as you evaluate it, by trying to get the greatest possible well-being from the resources you have. In this case, you've decided that you'll make the best (and perhaps most enjoyable) use of your resource, time, by acting instead of sprinting.