

CHAPTER 2

The Role of Economics

LEARNING OBJECTIVES

By the end of this chapter, the student will be able to:

1. Understand the role of economics in health care.
2. Distinguish between health economics and other forms of economic inquiry.
3. Define common economic terms used in modeling real-world phenomena.
4. Develop simple economic frameworks to explain phenomena.

INTRODUCTION

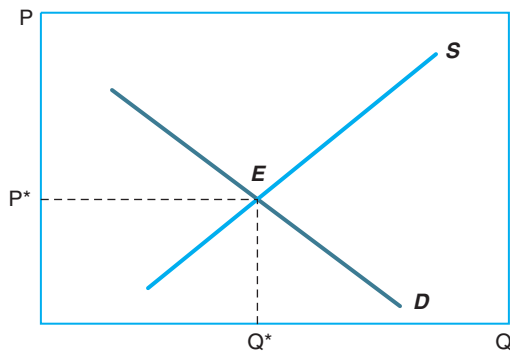
Economics provides a framework to study the implications of individual behavior in decisions concerning efficient consumption and production given scarce resources. This chapter discusses the basic terms and ideas of economics as they apply to health care.

HEALTH ECONOMICS AS A FIELD OF ECONOMICS

Health economists examine a wide range of issues, from the nature and production of health and demand for health care, the production of health care, and the market for health care to the economic evaluation of policies and interventions. In his seminal work, Grossman (1972) developed an economic framework for the study of healthcare demand where health care is just one factor used to produce health, with others being income, wealth, biology/genetics, education, sociodemographics/environment, and lifestyle choices. These factors interact with the effectiveness of health care to improve or maintain health status.

In the United States, health economists focus on the health services market. The demand for health services includes consumption and production aspects. The consumption aspects are the perceptions of looking and feeling healthy. The production aspect is the investment in human capital. Factors affecting the demand for medical care include patient demographics, health insurance, prices of the health care in question as well as prices of substitute services or services that are complementary to the use of the good or service in question, and the role of providers in prescribing the services. The supply of health care is determined by factors such as input markets, technology, size of the healthcare market in question, and managerial effectiveness. The demand and supply functions for health care intersect with one another to establish market **equilibrium**, as denoted in **Figure 2-1**. Markets are able to efficiently allocate scarce resources for the healthcare services in question by establishing a market clearing price level.

Analysis of the overall goals and objectives regarding equity and efficiency of the healthcare system is the scope of macroeconomic evaluations. For example, how does the U.S. healthcare system compare with other countries in terms of cost, access, quality, and outcomes? In these evaluations, trends in healthcare expenditures and production are analyzed and compared frequently to other healthcare systems around the world. Cost, access, and quality of health care and associated population health outcomes are considered in later chapters.

FIGURE 2-1 Market equilibrium.

THE IMPORTANCE OF HEALTH ECONOMICS

Economic analysis of the healthcare market is important due to the sheer size of the market in the overall economy (Evans, 2013; Reinhardt, Hussey, & Anderson, 2004). As Grossman posits (1972), on a micro level health care is one way of modifying the incidence and effect of ill health and disease as it interacts with other determinants of health production. Economic analysis offers ways to predict healthcare utilization and supply using a macro (system) and micro (individual) framework.

Further, healthcare provision and policy interventions are influenced by system constraints, social norms, and political-economic realities. Global, national, and local reforms and interventions are informed by economic theory. In countries ranging from the profit-driven system in the United States to centrally planned health economies as found in Britain, economic analysis is essential to understand and predict efficient levels of production and consumption of health care as well as to understand the effects of financial incentives on market outcomes.

Health economics is a field of economics that analyzes the behavior of consumers, producers, financiers, and the role of government in the healthcare economy. Although health economics is based in neoclassical economic theory, it also draws on related disciplines such as epidemiology, psychology, and sociology in understanding decision making in the health economy. Like other forms of economics, it also draws on statistics and mathematics in developing and testing theories related to the markets under consideration.

KEY ECONOMIC CONCEPTS

The following basic terms are used in economics as well as health economics:

- **Scarcity:** Addresses the problem of limited resources and the need to make choices given unlimited human wants.
- **Opportunity costs:** In microeconomics, given limited resources, choices must be made among mutually exclusive alternatives. The cost associated with the choice is the value of the foregone alternative. This valuation is a crucial component of determining and ensuring efficiency in the market. For example, the opportunity cost of purchasing this text is the money that could have been spent on leisure pursuits instead.
- **Marginal analysis:** Recognizes that choices are made incrementally. In this environment, optimal decision making is based on the incremental benefits and the costs of an alternative, where, in equilibrium, the incremental benefits equal the incremental costs of the alternative.
- **Market:** The market accomplishes its pricing and exchange of goods and services through a free-price system. Prices increase when more is desired, and they decrease when less is desired. The market reaches equilibrium when the quantity supplied of a good or service equals the quantity demanded of a good or service at a given price level.
- **Supply and demand:** Serves as the foundation of price determination in microeconomic analysis. In equilibrium, price converges where the quantity demanded by the consumer equals the quantity supplied by the producer.
- **Competition:** Productive resources are allocated to highly valued and specialized uses and therefore encourage efficiency. Competition takes production out of the hands of the less competitive and places it into the hands of the more efficient—constantly promoting the efficient methods of production. This causes firms to develop new, similar products cheaply, improving the selection of products available to consumers.
- **Efficiency:** Measures how well resources are being used to maximize the production of goods and services. Economic efficiency occurs if nothing more can be achieved given limited resources.
- **Market failure:** Arises when the free market fails to promote efficient allocation of goods and services. Sources of “failures”—of the free market—include natural monopoly, oligopoly, externalities of production or consumption, public goods, and incomplete information.

THE ECONOMIC FRAMEWORK

Economics is the oldest social science that attempts to explain human behavior. It is unique among other social sciences in that it explains constrained optimization. In other words, economics explains how scarce resources are allocated among alternatives to satisfy unlimited human wants. This analysis stems from the concept of scarcity, implying that using resources in one alternative has the trade-off of not being able to use the same resources in a competing activity or alternative. For example, if more resources are applied to the health economy they cannot be simultaneously applied to another sector of the economy due to competing demands.

The key assumption of economics that makes this discipline different from other social sciences is that decisions to choose an alternative given scarcity are determined rationally. The implication of rationality is that the choices made are optimal for achieving the intended goals of the producer or consumer. Here, choices are made to maximize profits or utility/satisfaction, for example. Often, particularly in the healthcare market, decision makers formulate choices based on incomplete information that can yield nonoptimal results compared to when information is freely available.

THE ECONOMIC MODEL

As in any model building, it is necessary to simplify the behaviors of market participants into their essential parts and to tease out extraneous factors. Simplification is accomplished through the construction of models.

Microeconomic models examine the behavior of individual decision makers, such as consumers, producers, and government agents. For example, microeconomic models are used to study how consumer demand for health care can be determined by changes in insurance copayments or how hospitals provide services if faced with a nursing shortage.

Economic Optimization

Optimization is the determination of the best action given the decision maker's goals and objectives. For example, producers are faced with maximization of output or minimization of cost, and consumers are faced with maximization of utility/satisfaction. Constrained optimization takes into account scarcity of resources. For example, how much medical care should a consumer purchase given that the price of the service has changed and that there are other goods and services that the person would need to purchase with a limited income at a given time period?

The traditional framework in economic optimization is the neoclassical model with its assumption of rational

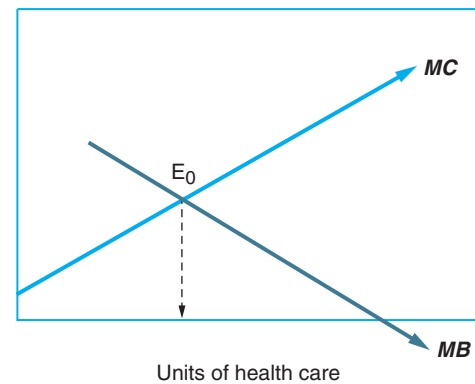
decision making. Firms maximize output given technology and the prices of the resources; consumers maximize utility or satisfaction from consuming various amounts of goods and services given limited income and the prices of goods and services considered in a given period. This relatively independent behavior on the part of economic actors leads to equilibrium in the market considered, which is the intersection of the supply and demand curves.

Within this framework, the optimal consumption of goods and services is where the **marginal benefit** from consumption (i.e., the additional benefit received from consuming the next unit of the good or service) equals the **marginal cost** of consumption (i.e., the additional cost of consuming the next unit of a good or service). Individuals will continue to purchase goods or services as long as $MB > MC$ (see **Figure 2-2**). The consumption increases to the point where the additional benefit equals the additional cost of consuming the next unit of a good or service, or the point of break even.

SUMMARY

Several important economic concepts are introduced in this chapter. First, health economics is growing in importance due to the sheer size and scope of the healthcare economy relative to other sectors of the economy. Second, resources are scarce related to relatively unlimited wants. In today's world, trade-offs are inevitable because consumers cannot

FIGURE 2-2 Economic optimization.



always get what they want. Third, medical decisions involve costs and benefits. Rational decision making results in optimal choices where $MB = MC$ in equilibrium. Fourth, it is important to strike a balance between choices based on opportunity costs. For example, if more is spent on genetic counseling, then less will need to be spent on other services given scarce resources.

KEY WORDS

- **Competition**
- **Efficiency**

- **Equilibrium**
- **Marginal analysis**
- **Marginal benefit**
- **Marginal cost**
- **Market**
- **Market failure**
- **Opportunity costs**
- **Scarcity**
- **Supply and demand**

Questions

1. How does health economics analysis aid in the study of the healthcare economy?
2. One way to choose among alternative treatments of care delivery models is through economic optimization. Discuss this concept.
3. Why is marginal analysis important in economics?

PROFILE: JAMES J. HECKMAN

James J. Heckman was born in Chicago in 1944 and spent his early and high school years in the South and Colorado, respectively. While in high school, he worked under the guidance of physicist Frank Oppenheimer, brother of J. Robert Oppenheimer, who was the scientific director of the Manhattan Project that developed the atomic bomb in World War II. During this time, Heckman learned to appreciate the scientific method and evidence-based theories.

Heckman was an undergraduate at the Colorado College in Colorado Springs, where he majored in mathematics and studied the works of noted economists Adam Smith and Paul Samuelson. He graduated with a BA in mathematics in 1965 and then briefly attended graduate school at the University of Chicago to study economics.

Heckman transferred to Princeton University to study development economics under Arthur Lewis. However, with the growth of microdata in labor statistics, he moved on to study labor economics and econometrics. The econometrics group was very lively at this university and encouraged the application of econometrics to policy problems.

After earning a PhD in economics in 1971, Heckman was offered a position at Columbia University, which was

intellectually open and encouraging. Here, he studied the empirical issues of the demand for new, good, and dynamic labor market problems and learned how to write for professional economists.

In 1973, Heckman returned to the University of Chicago and benefitted from numerous intellectual gatherings and the encouragement of colleagues and top-rate students. He also has enjoyed support from the American Bar Foundation, the National Science Foundation, and the National Institutes of Health. Currently, he is the Henry Schultz Distinguished Service Professor of Economics at the University of Chicago, where he also serves as professor in the University of Chicago's Law School and Harris School of Public Policy. He is also a professor at the University College Dublin and a senior research fellow in the American Bar Foundation. In 2000, Heckman won the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel.

Data from Nobelprize.org. (2015). James J. Heckman: Biographical. Retrieved May 6, 2014, from http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2000/heckman-bio.html.

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