

WHY HEALTH ECONOMICS?

Learning Objectives

After reading this chapter, students will be able to:

- **describe** the value of economics for managers,
- **identify** major challenges for healthcare managers,
- **find** current national and international information about healthcare outcomes, and
- **distinguish** between positive and normative economics.

Key Concepts

- Economics helps managers focus on key issues.
- Economics helps managers understand goal-oriented decision making.
- Economics helps managers understand strategic decision making.
- Economics gives managers a framework for understanding costs.
- Economics gives managers a framework for understanding market demand.
- Economics gives managers a framework for assessing profitability.
- Healthcare managers must deal effectively with risk and uncertainty.
- Healthcare managers must contend with the management problems that insurance presents.
- Information asymmetries create a number of problems for healthcare managers.
- Not-for-profit organizations create unique problems for managers.
- Rapid change in the healthcare system forces managers to lead their organizations into unfamiliar territory on a routine basis.

1.1 Why Health Economics?

Why should working healthcare managers study economics? This simple question is really two questions. Why is economics valuable for managers? What special challenges do healthcare managers face? These questions motivate this book.

Why is economics valuable for managers? There are six reasons. We will briefly touch on each of them to highlight the themes we will develop in later chapters.

1. Economics helps managers focus on key issues. Economics helps managers wade through the deluge of information they confront and identify the data they need.
2. Economics outlines strategies for realizing goals given the available resources. One of the primary tasks of economics is to explore carefully the implications of rational decision making.
3. Economics gives managers ground rules for strategic decision making. When rivals are not only competing against them but watching what they do, managers must be prepared to think strategically (i.e., be prepared to use the insights of game theory).
4. Economics gives managers a framework for making sense of costs. Managers need to understand costs, as good decisions are unlikely without this understanding.
5. Economics gives managers a framework for thinking about value. The benefits of the goods and services successful organizations provide to customers exceed the costs of producing those goods and services. Good management decisions require an understanding of how customers perceive value.
6. Most important, economics sensitizes managers to fundamental ideas that affect the operations of every organization. Effective management begins with the recognition that consumers are sensitive to price differences, that organizations compete to advance the interests of their stakeholders, and that success comes from providing value to customers.

1.2 Economics as a Map for Decision Making

Economics provides a map for decision making. Maps do two things. They highlight key features and suppress unimportant features. To drive from Des Moines, Iowa, to Dallas, Texas, you need to know how the major highways connect. You do not want to know the name and location of each street in each town you pass through. Of course, what is important and what is unimportant depend on the task at hand. If you want to drive from Burch Street and Ridgeview Road in Olathe, Kansas, to the Truman homestead in Independence, Missouri, a map that describes only the interstate highway system will be of limited value to you. You need to know which map is the right tool for your situation.

Using a map takes knowledge and skill. You need to know what information you need, or you may choose the wrong map and be swamped in extraneous data or lost without key facts. Having the right map is no

guarantee that you can use it, however. You need to practice to be able to use a map quickly and effectively. In the same sense, economics is a map for decision making.

Like a map, economics highlights some issues and suppresses others. For example, economics tells managers to focus on incremental costs, which makes understanding and managing costs much simpler, but economics has little to say about the belief systems that motivate consumer behavior. If you are seeking to make therapeutic regimens easier to adhere to by making them more consistent with consumers' belief systems, economics is not a helpful map. If, on the other hand, you want to decide whether setting up an urgent care clinic is financially feasible, economics helps you focus on how your project will change revenues and costs.

Economics also gives managers a framework for understanding rational decision making. By *rational decision making*, we mean making choices that further one's goals given the resources available. Whether those goals include maximizing profits, securing the health of the indigent, or other objectives, the framework is much the same. It entails looking at benefits and costs to realize the largest net benefit. (We will explore this question further in section 1.5.)

Managers must understand costs and be able to explain costs to others. Confusion about costs is common, so confusion in decision making is also common. Confusion about benefits is even more widespread than confusion about costs. As a result, management decisions in healthcare often leave much to be desired.

Economists typically speak about economics at a theoretical level, using "perfectly competitive markets" (which are, for the most part, mythical social structures) as a model, which makes application of economics difficult for managers competing in real-world markets. Yet, economics offers concrete guidance about pricing, contracting, and other quandaries that managers face. Economics also offers a framework for evaluating the strategic choices managers must make. Many healthcare organizations have rivals, so good decisions must take into account what the competition is doing. Will being the first to enter a market give your organization an advantage, or will it give your rivals a low-cost way of seeing what works and what does not? Will buying primary care practices bring you increased market share or buyer's remorse? Knowing economics will not make these choices easy, but it can give managers a plan for sorting through these issues.

1.3 Special Challenges for Healthcare Managers

What special challenges do healthcare managers face? Five issues face healthcare managers more than other managers:

Sidebar 1.1 Not All Management Decisions Are Good Ones

During the 1980s and 1990s, many hospitals acquired physician practices. Nearly all of those hospitals are losing money on what were once profitable practices. Economics provides two important insights into why these acquisition decisions failed to produce desirable results.

First, most purchases were knee-jerk responses to what competitors were doing, rather than well-thought-out business plans. Enamored by the fact that physicians typically generate large inpatient revenues for each dollar of outpatient revenue they generate, hospitals neglected to ask two key questions: How will buying these practices change the amount of inpatient revenues physicians will bring us? Why are physicians willing to sell? We still do not know the answer to the first question. The answer to the second question is simple—hospitals overpaid. They started buying just as practice valuations began dropping as a result of the growth of managed care and increasing competition for patients.

Second, hospitals ignored incentives. Most hospitals converted compensation based on billings to salaries after they acquired practices, which was a significant mistake. Economics reminds us that incentives matter. For physicians whose earnings depend on billings, the marginal patient—the patient squeezed in at the end of the day, or the patient booked in anticipation that someone will cancel—is highly profitable. For physicians whose earnings depend on salaries, the marginal patient is financially unrewarding. Not surprisingly physicians in independent practice saw 28 percent more patients and performed 16 percent more procedures per patient than those in practices owned by hospitals (Greene et al. 2002). In recent years, hospitals have been returning to incentive-based pay. Productivity has turned around as a result, again confirming economists' emphasis on incentives.

Managers of MultiCare Health System in Tacoma, Washington, concluded that continuing losses at MultiCare Medical Group were not acceptable and took steps to improve its financial performance (Stover, Sauter, and James 2004). They decided to return control of operations to the group's physicians and prepared reports to help the physicians improve their financial performance. During a three-year period, MultiCare Medical Group revised its compensation system and productivity goals and significantly improved its profitability. Managers can effect great change if they are armed with good information and given authority to act.

1. The central roles of risk and uncertainty
2. The complexities created by insurance
3. The perils produced by information asymmetries
4. The problems posed by not-for-profit organizations
5. The rapid and confusing course of technical and institutional change

Let's look at each of these challenges in more depth.

1.3.1 Risk and Uncertainty

Risk and uncertainty are defining features of healthcare markets and healthcare organizations. Both the incidence of illness and the effectiveness of medical care should be described in terms of probabilities. For example, the right therapy, provided the right way, usually carries some risk of failure. A proportion of patients will experience harmful side effects, and a proportion of patients will not benefit. As a result, management of costs and quality presents difficult challenges. Has a provider produced bad outcomes because he was unlucky and had to treat an extremely sick panel of patients, or because he encountered a panel of patients for whom standard therapies were ineffective? Did his colleagues let him down? Or was he incompetent, sloppy, or lazy? The reason is not always evident.

1.3.2 Insurance

Because risk and uncertainty are inherent in healthcare, most consumers have medical insurance. As a result, healthcare organizations have to contend with the management problems insurance presents. First, insurance creates confusion about who the customer is. Customers use the products, but insurance plans often pay most of the bill. Moreover, most people with private medical insurance receive coverage through their employer (in large part because the tax system makes this arrangement advantageous). Although economists generally agree that employees ultimately pay for insurance via wage reductions, most employees do not know the costs of their insurance alternatives (and unless they are changing jobs, have limited interest in finding out). As a result of the employer plan default, employees remain unaware of the true costs of care and are not eager to balance cost and value. If insurance is footing the bill, most patients choose the best, most expensive treatment—a choice they might not make if they were paying the full cost of care.

In addition, insurance makes even simple transactions complex. Most transactions involve at least three parties (the patient, the insurer, and the provider), and many involve more. To add to the confusion, most providers deal with a wide array of insurance plans and face blizzards of disparate claim forms and payment systems. Increasing numbers of insurance plans have negotiated individual payment systems and rates, so many healthcare providers look wistfully at industries that simply bill customers to obtain revenues. The complexity of insurance transactions also increases opportunity for error and fraud. In fact, both are fairly common.

Despite this bewildering array of insurance plans, many providers still rely on a select few plans for their revenue (a circumstance most managers seek to avoid). For example, most hospitals receive at least a third of their revenue from Medicare. As a result, changes in Medicare regulations or payment methods can profoundly alter a healthcare organization's prospects.

Overnight, changes to reimbursement terms may transform a market that is profitable for everyone to one in which only the strongest, best-led, best-positioned organizations can survive.

1.3.3 Information Asymmetries

Information asymmetries are common in healthcare markets and create a number of problems. An *information asymmetry* occurs when one party in a transaction has less information than the other party. In this situation, the party with more information has an opportunity to take advantage of the party with less information. Recognizing that he or she is at a disadvantage, the party with less information may become skeptical of the other party's motivation and decline a recommendation that would have been beneficial to him or her. For example, physicians and other healthcare providers usually understand patients' medical options better than patients do. Unaware of their choices, patients may accept recommendations for therapies that are not cost-effective or, recognizing their vulnerability to physicians' self-serving advice, may resist recommendations made in their best interest.

From a manager's perspective, asymmetric information means that providers have a great deal of autonomy in recommending therapies. Because providers' recommendations largely define the operations of insurance plans, hospitals, and group practices, managers need to ensure that providers do not have incentives to use their superior information to their advantage. Conversely, in certain situations, patients have the upper hand and are likely to forecast their healthcare use more accurately than insurers. Patients know whether they want to start a family, whether they seek medical attention whenever they feel ill, or whether they have symptoms that indicate a potential condition. As a result, health plans are vulnerable to *adverse selection*—differential enrollment of high-cost customers.

1.3.4 Not-for-Profit Organizations

Most not-for-profit organizations have worthy goals that their managers take seriously, but these organizations can create problems for healthcare managers as well. For example, not-for-profit organizations usually have multiple stakeholders. Multiple stakeholders mean multiple goals, so organizations become much harder to manage, and managers' performance becomes harder to assess. The potential for managers to put their own needs before their stakeholders' needs exists in all organizations but is more difficult to detect in not-for-profit organizations because they do not have a simple bottom line. In addition, not-for-profit organizations may be harder to run well. They operate amid a web of regulations designed to prevent them from being used as tax avoidance schemes. These regulations make setting up incentive-based compensation systems for managers, employees, and contractors (the most important of whom are physicians)

Sidebar 1.2 Questions about Tax Exemptions

Questions about the tax exempt status of hospitals continue to increase. For example, in 2008 the attorney general of Ohio began an investigation of executive pay, billing practices, and provision of charity care. Over 80 percent of hospitals are not-for-profit organizations that do not have to pay federal income tax, state income tax, or local property tax. Recently, the chairman of the House Ways and Means Committee posed the following question: What is the taxpayer getting in return for the tens of billions of dollars per year in tax subsidy? These tax breaks do not appear to result in significantly higher levels of charity care. A recent study by the Government Accountability Office found that the volume of charity care provided by not-for-profit hospitals was only marginally greater than the volume of charity care provided by for-profit hospitals (U.S. Government Accountability Office 2005).

Hospitals began as refuges for the poor, with clearly charitable missions. But the increasing use of hospitals by paying customers, the resulting expansion of the hospital sector, and higher tax rates necessitated clear standards for tax exemption. In 1956 the Internal Revenue Service published a statement requiring that a tax-exempt hospital “be operated to the extent of its financial ability for those not able to pay for the services rendered.” In addition, a tax-exempt hospital could not “refuse to accept patients in need of hospital care who cannot pay for such services,” nor was it dispensing charity if it operated “with the expectation of full payment” and incurred bad debt as a result of nonpayment.

Thirteen years later, following the introduction of Medicare and Medicaid, the Internal Revenue Service substituted a broader “community benefit” standard, which expanded the definition of activities eligible for tax exemption. After lying dormant for a number of years, the issue resurfaced in the 1980s when local groups began complaining about hospitals’ tax exemptions. In the 1990s, the conversion of not-for-profit hospitals to for-profit status seemed to have little effect on taxes (other than increases in local tax revenues), and concern spread.

At present the issue is not settled. Clearly, though, losing tax-exempt status can have a major impact on a hospital’s financial circumstances. This issue is a major concern for any not-for-profit manager. Most economists are skeptical of a subsidy without a clear link to the desired outcome. At a minimum, the manager must be able to explain what taxpayers are receiving in return.

more difficult. Further, when a project is not successful, not-for-profit organizations have greater difficulty putting the resources invested in the failed idea to other uses. For example, the trustees of a not-for-profit organization may have to get approval from a court to sell or repurpose its assets. Because of these special circumstances, managers of not-for-profit organizations can always claim that substandard performance reflects their more complex environment.

1.3.5 Technological and Institutional Change

This fifth challenge makes the others pale in comparison. The healthcare system is in a state of flux. Virtually every part of the healthcare sector is reinventing itself, and no one seems to know where the healthcare system is headed. Leadership is difficult to provide if you don't know where you are going. Because change presents a pervasive test for healthcare managers, we will examine it in greater detail.

1.4 Turmoil in the Healthcare System

Why is the healthcare system of the United States in such turmoil? One explanation is common to the entire developed world: rapid technical change. The pace of medical research and development is breathtaking, and the public's desire for better therapies is manifest. These demands challenge healthcare managers to regularly lead their organizations into unmapped territory. To make matters worse, changes in technology or changes in insurance can quickly affect healthcare markets. In healthcare, as in every other sector of the economy, new technologies can create winners and losers. For example, between 2000 and 2007 Medicare payments to ambulatory surgery centers more than doubled (Medicare Payment Advisory Commission 2008). This represents an opportunity for hospitals, but it also represents a threat. Unaffiliated ambulatory surgery centers and physicians' offices are rapidly expanding competitors. In addition, which ambulatory surgeries can be done profitably depends on insurers' payment decisions. What appears profitable today may not be profitable tomorrow if rates change significantly.

1.4.1 The Pressure to Reduce Costs

The economics of high healthcare costs are far simpler than the politics of high healthcare costs. To reduce costs, managers must reallocate resources from low-productivity uses to high-productivity uses, increase productivity wherever feasible, and reduce prices paid to suppliers and sectors where there is excess supply. They also must recognize that cost cutting is politically difficult. Reallocating resources and increasing productivity will cost some people their jobs. Reducing prices will lower some people's incomes. These steps are difficult for any government to take, and many of those who will be affected (physicians, nurses, and hospital employees) are politically well organized.

The fragmentation of healthcare bills compounds the political problem. Most Americans see only a part of the cost of healthcare. A typical American pays his or her share of healthcare costs through a mixture of direct payments for care; payroll deductions for insurance premiums; lower wages; higher prices for goods and services; and federal, state, and

Sidebar 1.3 Why Is the Pressure to Reduce Healthcare Costs So Strong?

The United States spends far more on healthcare than other wealthy industrial countries do but, according to health indicators, fares worse than most of them (Cylus and Anderson 2007). Spending per person is nearly double the spending per person in Germany, Canada, and France (see Table 1.1). Differences this large should be reflected in the outcomes of care.

<i>Country</i>	<i>1996</i>	<i>2004</i>
Canada	\$2,002	\$3,165
France	\$1,978	\$3,139
Germany	\$2,222	\$3,005
United Kingdom	\$1,304	\$2,546
United States	\$3,708	\$6,102

TABLE 1.1
Spending per
Person*

*Spending figures have been converted into U.S. dollars.
SOURCE: Cylus and Anderson (2007).

As you can see in Table 1.2, of the six countries listed, the United States has the shortest life expectancy at birth. In an analysis of potentially avoidable deaths, Nolte and McKee (2008) noted that the United States had a relatively high rate of potentially avoidable deaths a decade ago and had slower rates of improvement than other wealthy industrialized countries. Greater spending should not produce these results.

<i>Country</i>	<i>Males</i>	<i>Females</i>
Canada	77.8 years	82.6 years
France	76.7 years	83.8 years
Germany	76.2 years	81.1 years
Japan	76.6 years	85.5 years
United Kingdom	76.9 years	81.1 years
United States	75.2 years	80.4 years

TABLE 1.2
Life
Expectancy
at Birth,
2005

SOURCE: Organisation for Economic Co-operation and Development (2008).

local taxes. Because so much of the payment system is hidden, most Americans cannot track healthcare costs. The exceptions, notably employers who write checks for the entire cost of insurance policies and the trustees of the Medicare system, understand the need to reduce costs. Because so few Americans recognize how much their healthcare system costs, the complex system of public regulations and subsidies will change slowly, at best.

1.5 What Does Economics Study?

What does economics study? Economics analyzes the allocation of scarce resources. Although this answer appears straightforward, several definitions are needed to make this sentence understandable. Resources include anything useful in consumption or production. From the perspective of a manager, resources include the flow of services from supplies or equipment the organization owns and the flow of services from employees, buildings, or other entities the organization hires. A resource is scarce if it has alternative uses, which might include another use within the organization or use by another person or organization. Most issues that managers deal with involve scarce resources, so economics is potentially useful for nearly all of them.

Economics focuses on rational behavior—that is, it focuses on individuals' efforts to best realize their goals, given their resources. Because time and energy spent in collecting and analyzing information are scarce resources (i.e., the time and energy have other uses), complete rationality is irrational. Everyone uses shortcuts and rules to make certain choices, and doing so is rational, even though better decisions are theoretically possible.

Much of economics is positive. *Positive economics* uses objective analysis and evidence to answer questions about individuals, organizations, and societies. Positive economics might describe the state of healthcare, for example, in terms of hospital occupancy rates over a certain period. Positive economics also proposes hypotheses and assesses how consistent the evidence is with them. For example, one might examine whether the evidence supports the conjecture that reductions in direct consumer payments for medical care (measured as a share of spending) have been a major contributing factor in the rapid growth of healthcare spending per person. Although values do not directly enter the realm of positive economics, they do shape the questions economists ask (or do not ask) and how they interpret the evidence.

Normative economics often addresses public policy issues, but not always. The manager of a healthcare organization who can identify additional services or additional features that customers are willing to pay for is

Sidebar 1.4 Why Does the United States Spend More on Medical Care than Other Wealthy Countries Spend?

Positive economics has been used to answer this question. Spending on a product equals the amount bought times its price, so analysts break down differences in spending into differences in volumes and differences in prices. Analysis shows us that there is little evidence that Americans use more medical care than other wealthy countries, but there is ample evidence that American prices are substantially higher (Docteur, Suppanz, and Woo 2003). For example, compared to patients in other wealthy countries, American patients typically use 27 percent fewer prescriptions but spend 41 percent more, implying that Americans are buying more expensive pharmaceuticals. Similarly, American patients typically have 36 percent fewer physician visits, yet spend 183 percent more (Cylus and Anderson 2007). The price per visit is much higher in the United States.

Americans also spend far more on hospital care, even though they are less likely to be admitted and usually have a shorter stay if they are admitted. Some of the difference can be attributed to prices, but higher levels of staffing and equipment in American hospitals are also factors. Sorting out how much of the difference in the cost per hospitalization is attributable to price differences and how much is attributable to higher levels of staffing and equipment would be categorized as positive economics. Sorting out whether higher levels of staffing and equipment are worth the extra cost takes us into the realm of normative economics.

demonstrating normative economics. Likewise, the manager who can identify features or services that customers do not value is also demonstrating normative economics.

Normative economics takes two forms. In one, citizens use the tools of economics to answer public policy questions. Usually these questions involve ethical and value judgments (which economics cannot supply) as well as factual judgments (which economics can support or refute). A question like, “Should the Medicare program provide coverage for prescription drugs?” involves balancing benefits and harms. Economic analysis can help assess the facts that underlie the benefits and harms but cannot provide an answer. The second form of normative analysis is the basis for this book’s content. This form tells us how to analyze what we *should* do, given the circumstances that we face. In this part of normative analysis, market transactions indicate value. For example, we may believe that a drug is overpriced, but we must treat that price as a part of the environment and react appropriately if no one will sell it for less. Most managers find themselves in such an environment.

To best realize our goals within the constraints we face, economics gives us explicit guidance.

1. First, identify plausible alternatives. Breakthroughs usually occur when someone realizes there is an alternative to the way things have always been done.
2. Second, consider modifying the standard choice (e.g., charging a slightly higher price or using a little more of a nurse practitioner's time).
3. Next, pick the best choice by determining the level at which its *marginal benefit* equals its *marginal cost*. (We will explain these terms shortly.)
4. Finally, examine whether the total benefits of this activity exceed the total cost.

Skilled managers routinely perform this sort of analysis. For example, a profit-seeking organization might conclude that a clinic's profits would be as large as possible if it hired three physicians and two nurse practitioners, but that the clinic's profits would be unacceptably low if it did. Profits would fall even further if it increased or decreased the number of physicians and nurse practitioners, so the profit-seeking organization would choose to close the clinic.

Let's back up and define some terms to make this discussion clearer. *Cost* is the value of a resource in its next best use. For example, the cost of a plot of land for a medical office would be the most another user would pay for it, not what it sold for 20 years ago. The next best use of that land might be for housing, for a park, for a store, or for some other use. Usually the next best use of a resource is someone else's use of it, so a resource's cost is the price we must pay for it. If 30 Lipitor tablets are worth \$80 to another consumer, that will be our cost for it. *Benefit* is the value we place on a desired outcome. We describe this value in terms of our willingness to trade one desired outcome for another. Often, but not always, our willingness to pay money for an outcome is a convenient measure of value. A *marginal* or an *incremental* amount is the increased cost we incur from using more of a resource or the increased benefit we realize from a greater outcome. So, if a 16-ounce soda costs 89 cents and a 24-ounce soda costs 99 cents, the incremental cost of the larger size is $(99 - 89) \div (24 - 16)$, or 1.25 cents per ounce. A rational consumer might conclude that:

1. the incremental benefit of the larger soda exceeds its incremental cost and buy the larger size;
2. the incremental cost of the larger soda exceeds its incremental benefit and buy the smaller size; or
3. the total benefit of both sizes was less than their total cost and buy neither.

Remember, however, that rational decisions are defined by the goals that underpin them. A consumer with a train to catch might buy an expensive small soda at the station to save time.

1.6 Conclusion

Why should healthcare managers study economics? To be better managers. Economics offers a framework that can simplify and improve management decisions. This framework is valuable to all managers. It is especially valuable to clinicians who assume leadership roles in healthcare organizations.

Managers are routinely overwhelmed with information, yet lack the key facts that they need to make good decisions. Economics offers a map that makes focusing on essential information easier.

Homework

- 1.1 Why is the idea that value depends on consumers' preferences radical?
- 1.2 Mechanics usually have better information about how to fix automobiles than their customers. What sorts of problems does this advantage create? Do mechanics or their customers do anything to limit these problems?
- 1.3 A mandatory health insurance plan costs \$4,000. There are three workers. One gets \$24,500 in employment income and \$500 in investment income. One gets \$48,000 in employment income and \$2,000 in investment income. The third gets \$68,000 in employment income and \$7,000 in investment income. A premium-based system would cost each worker \$4,000. A wage-tax based system would cost each worker 8.5 percent of wages. An income-tax based system would cost each worker 8 percent of income. For each worker, calculate the cost of the insurance as a share of total income.

E = Employment income	\$24,500	\$48,000	\$68,000
I = Investment income	\$ 500	\$ 2,000	\$ 7,000
P = Premium cost of insurance	\$ 4,000	\$ 4,000	\$ 4,000

Premium as a percentage of income = $P/(E + I)$

W = Wage tax cost of insurance = $0.085 \times E$

Wage tax as a percentage of income = $W/(E + I)$

T = Income tax cost of insurance = $0.080 \times (E + I)$

Income tax cost as a percentage of income = $T/(E + I)$

- 1.4 Which plan would be fairer?
- 1.5 Which of the preceding questions can you answer using positive economics?
- 1.6 For which must you use normative economics?
- 1.7 Below are data for Australia, Canada, and the United States.
 - a. How did female life expectancy at birth change between 1995 and 2005?
 - b. How did expenditure per person change between 1995 and 2005?
 - c. What conclusions do you draw from these data?
 - d. If you were the “manager” of the healthcare system in the United States, what would be a sensible response to data like these?

	<i>Life Expectancy</i>			<i>Expenditure per Person</i>		
	<i>1995</i>	<i>2005</i>	<i>Change</i>	<i>1995</i>	<i>2005</i>	<i>Change</i>
Australia	80.8	83.3		\$2,056	\$3,080	
Canada	81.1	82.7		\$2,543	\$3,496	
United States	78.9	80.4		\$4,593	\$6,498	

Life expectancy is female life expectancy at birth.

Expenditure per person has been translated into US\$ and adjusted for inflation.

Chapter Glossary

Cost. The value of a resource in its next best use

Incremental. A small change from the current situation

Marginal. A small change from the current situation

Marginal analysis. Assessment of the effects of small changes in a decision variable (such as price or the volume of output) on outcomes (such as costs, profits, or the probability of recovery)

Marginal cost pricing. The use of information about marginal costs and the price elasticity of demand to set profit-maximizing prices

Marginal or incremental cost. The cost of producing an additional unit of output

Normative economics. Using values to identify the best options

Positive economics. Using objective analysis and evidence to answer questions about individuals, organizations, and societies

Rational decision making. Choosing the course of action that gives you the best outcomes, given the constraints you face

Scarce resources. Anything useful in consumption or production that has alternative uses

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