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Unit 1 Core Concepts

The Economic Problem

Economy is the art of making the most out of life.

—George Bernard Shaw, Irish playwright

Just as variety adds spice to life, so does choice enliven our everyday existence. Some choices are minor—which pair of shoes to buy and whether to have a pizza or a hamburger for lunch. Others are more important—where to live and what career to pursue. Because our resources are limited, every one of our choices has a price. This is a basic fact of human existence that applies equally to individuals and societies. Individuals must decide how to use their limited time and budgets. Societies, meanwhile, must decide how to employ a fixed supply of resources. Thus, both individuals and societies can use economics to analyze their choices and make the best possible decisions.

CHAPTER FOCUS

In this chapter, you will:

- consider the economic problem—the problem of having unlimited wants, but limited resources—that underlies the definition of economics
- learn about the way economists specify economic choice
- examine the production choices an entire economy faces, as demonstrated by the production possibilities model
- analyze the three basic economic questions and how various economic systems answer them

What Economists Do

economic problem: the problem of having unlimited wants but limited resources with which to satisfy them

The Economic Problem

Every day, we make choices to meet our wants. Wants vary widely from person to person; we may have a special preference for ice-cream sundaes or chocolate cakes, rock concerts or classical recitals, video games or comic books. Because we face so many choices, the sum total of wants is virtually unlimited. Our resources, however, are not. Thus, we have the **economic problem**.

THINKING ABOUT ECONOMICS

The famous Indian statesman M.K. (Mahatma) Gandhi once said, "There is enough for the needy, but not for the greedy." What are the implications of this belief for the economic problem?

Gandhi's statement reveals a way the economic problem can be solved without the help of economics—by curbing our selfish wants. Is such a scenario feasible? In some cultures, and for idealistic individuals or small groups, it can be. However, attempts to control the wants of large groups of people have tended to be spectacular failures.

Question

What are some examples of societies that have tried to curb individual wants?

economic resources:

basic items that are used in all types of production, including natural, capital, and human resources

natural resources: the resources from nature that are used in production, including land, raw materials, and natural processes

capital resources: the processed materials, equipment, and buildings used in production; also known as capital

The limited nature of resources—or scarcity—requires that we make choices based on both noneconomic factors, such as the need for security, and economic factors. For many individuals, time and money are most scarce. For societies as a whole, it is the basic items used in all types of production, known as **economic resources**, that are scarce. These resources come not only from nature but also from human effort and ingenuity. Economic resources are often categorized as natural resources, capital resources, and human resources.

NATURAL RESOURCES

Natural resources represent nature's contribution to production. These resources include not only land—used for farms, roads, and buildings—but also raw materials, such as minerals and forests. As well, natural resources include useful natural processes, such as sunlight and water power.

CAPITAL RESOURCES

In economics, the term **capital resources**, or capital, refers to the real assets of an economy—the processed materials, equipment, and buildings that are used in production. An example is a newspaper printing plant and its printing presses, as well as the processed inputs—paper and ink—used to make newspapers. Therefore, the term "capital" has a special meaning in economics. As economic resources, capital resources do not include financial capital, such as stocks and bonds. A person's shares

labour: human effort employed directly in production

entrepreneurship: initiative, risk-taking, and innovation necessary for production

economics: the study of how to distribute scarce resources among alternative ends

microeconomics: the branch of economics that focuses on the behaviour of individual participants in various markets

macroeconomics: the branch of economics that takes a wide-ranging view of the economy, studying the behaviour of economic sectors

economic models: generalizations about or simplifications of economic reality; also known as laws, principles, or theories

in Canadian Pacific, for example, do not add to the economy's stock of real capital. Similarly, the bonds issued by a company, such as Bell Canada, are viewed as financial capital by their holders, but not as real capital by economists.

HUMAN RESOURCES

There are two main types of human resources used in production. **Labour** represents human effort employed directly in production, such as the work of a computer programmer, store clerk, factory supervisor, or brain surgeon. On the other hand, **entrepreneurship** is the initiative, risk-taking, and innovation necessary for production. It includes the efforts of the inventor who brings a new product to the market, the head of a multimillion-dollar corporation, the owner of a small variety store, and the student who starts a summer house-painting business. Entrepreneurship is often difficult to pinpoint, but it is this that brings together the natural resources, capital resources, and labour in order to produce a good or service.

RESOURCE INCOMES

Economic resources have corresponding incomes, which reflect their contributions to production. When a natural resource is employed, its owner receives a rent, which is the payment for supplying the resource. Similarly, providers of capital resources (as well as providers of financial capital, such as bonds) receive an income in the form of interest. Finally, people are paid wages for their labour and profit for their entrepreneurship.

Economics Defined

Arising from unlimited wants and scarce resources, **economics** is the study of how to distribute limited resources among alternative ends. Economics is divided into two branches, which are studied separately: microeconomics and macroeconomics.

MICROECONOMICS

Microeconomics focuses on the behaviour of individual participants in various markets. How do people decide on the quantities of a particular resource they will consume? How do businesses decide on the quantities of a particular product they will produce? How are prices set within markets? What determines how incomes are distributed to the various participants in an economy? These are the sorts of questions studied in microeconomics.

MACROECONOMICS

In contrast, **macroeconomics** takes a more wide-ranging view of the economy. It is concerned with entire economic sectors, which are treated as separate entities. The four important sectors in the economy are households, businesses, government, and foreign markets. How these sectors interact determines a country's unemployment rate, general level of prices, and total economic output. Explaining these larger economic forces is the central task of macroeconomics.

Economic Models

Economists use models to help them understand economic behaviour. **Economic models**—also known as laws, principles, or theories—are generalizations or simplifications of economic reality. As an example, think about the Canadian economy, in which literally millions of separate transactions—sales and purchases—are made each day. Trying to keep track of every sale and purchase for the purpose of understanding economic

activity would be impossible. Instead, economists build useful abstractions of reality that allow them to see the basic workings of the economy. In other words, a good economic model allows economists to see the forest instead of the trees.

Without even realizing it, we regularly use models. When driving in unfamiliar territory, for example, we often depend on maps. Although an aerial photograph of our route would be the most realistic representation, it is virtually useless as a driving guide. A road map, however, gives exactly the detail needed to find the way. Similarly, a good economic model can help us understand some facet of economic behaviour without overwhelming us with details.

CAUSE AND EFFECT

variables: factors that have measurable values

independent variable: the variable in a causal relationship that causes change in another variable

dependent variable: the variable in a causal relationship that is affected by another variable

inverse relationship: a relationship in which a change in the independent variable causes a change in the opposite direction of the dependent variable

direct relationship: a relationship in which a change in the independent variable causes a change in the same direction of the dependent variable

***ceteris paribus*:** the assumption that all other things remain the same

positive economics: the study of economic facts and how the economy operates as it does

How can economic models help explain economic trends and behaviour? Usually, by including two or more **variables**, or factors that have measurable values. For example, the price of an item and the quantity that is purchased of that item are two variables. In a model, variables are connected by a causal relationship, meaning that one variable is assumed to affect another. Suppose a model states that a rise in the price of cellular phones reduces the number of cellular phones purchased. In this case, the variable that is causing the other to change—known as the **independent variable**—is the price of cellular phones. The variable that is being affected—called the **dependent variable**—is the number of cellular phones purchased.

INVERSE AND DIRECT RELATIONSHIPS

A model proposes what effect one variable will have on another. If the value of one variable is expected to increase as the value of another variable decreases, the variables have an **inverse relationship**. An increase in cellular phone prices that reduces the number of phones sold is an example of an inverse relationship. Two variables can have a **direct relationship**, meaning that when the independent variable rises or falls, the dependent variable moves in the same direction. A rise in the hourly wage of bank tellers that causes a corresponding rise in the number of people who wish to work in this occupation is an example of a direct relationship.

THE NEED FOR ASSUMPTIONS

In order to focus on the relationship between two variables, economists must make assumptions to temporarily simplify the real world. Let us return to the relationship that states that the quantity of cellular phones purchased is inversely related to their price. Economists must assume that another factor—such as consumer incomes—is not affecting purchases of cellular phones. Assuming that all other factors affecting a dependent variable remain constant is common in economics. This assumption is known as ***ceteris paribus*** (pronounced kay'-teh-rees pah'-ri-bus), which is the Latin expression for "all other things remaining the same." The *ceteris paribus* assumption, as well as any other assumptions that are made, should be outlined explicitly in an economic model.

POSITIVE AND NORMATIVE ECONOMICS

In using economic models, we need to distinguish between two types of economic enquiry: positive and normative economics.

Positive economics (sometimes called *descriptive economics*) is the study of economic reality and why the economy operates as it does. It is based purely on economic facts rather than on opinions. This type of economics is made up of positive statements,

which can be accepted or rejected through applying the scientific method. "Canadians bought five million CDs last year" is a positive statement—a simple declaration of fact. A positive statement can also take the form of a condition that asserts that if one thing happens, then so will another: "If rent controls are eliminated, then the number of available rental units will increase." Both declarations of fact and conditional statements can be verified or disproved using economic data.

normative economics:

the study of how the economy ought to operate

In contrast, **normative economics** (also called policy economics) deals with how the world ought to be. In this type of economics, opinions or value judgements—known as normative statements—are common. "We should reduce taxes" is an example of a normative statement. So is "A 1 percent rise in unemployment is worse than a 1 percent rise in inflation." Even people who agree on the facts can have different opinions regarding a normative statement, since the statement relates to questions of ethical values.

Brief Review

1. The basic economic problem faced by both individuals and societies is that while human wants are virtually unlimited, the resources to fulfil them are limited or scarce.
2. Economic resources can be categorized as natural resources, capital resources, and human resources. Each resource has a corresponding income.
3. Whereas microeconomics concentrates on the ways consumers and businesses interact in various markets, macroeconomics takes a broader look at the economy as a whole and highlights such variables as unemployment, inflation, and total output.
4. Economic models contain causal relationships between variables and are based on simplifying assumptions.

Economic Choice

How do people make economic choices? They do so by using effectively the scarce resources they have. Two main factors are involved in this decision-making process: utility and cost.

Utility Maximization

Economists assume that whenever you make an economic choice, you are trying to maximize your own utility. **Utility** can be defined as the satisfaction or pleasure you derive from any action. Let us examine utility maximization with the illustration of you and your lunch. Economists assume first the **self-interest motive**, that is, that you are primarily concerned with your own welfare. So, when deciding among lunch options that cost the same amount of money, you pick the one that gives the most utility. For example, suppose someone has \$2 to spend at a fast-food restaurant. Two options are available: a pizza slice or a low-calorie veggieburger, each with a price of \$2. How does this person make a choice? According to economists, the person decides by making a rational comparison of the utility gained from either product. If the satisfaction from a pizza slice outweighs the pleasures of a veggieburger, they will buy the pizza. If the opposite applies, the veggieburger will win out.

utility: the satisfaction gained from any action

self-interest motive: the assumption that people act to maximize their own welfare

opportunity cost: the utility that could have been gained by choosing an action's best alternative

Opportunity Cost

Maximizing utility is only one part of making economic decisions. Acquiring anything prevents someone from pursuing an alternative. Instead of measuring cost in terms of money, economists use a concept that accounts for the tradeoffs resulting from any economic choice: opportunity cost. The **opportunity cost** of any action is the utility that could have been gained by choosing the best possible alternative.

The notion of opportunity cost involves more than money. To illustrate, the person who spends \$2 to buy a pizza slice at the fast-food restaurant faces an opportunity cost equal to the utility that could have been gained by eating a low-calorie burger instead. If the person chooses the veggieburger, the opportunity cost is the sacrificed pleasure of eating a pizza slice. For a weight-conscious consumer, for example, the utility gained from eating the burger probably outweighs the pleasure from eating the pizza slice. This means that the burger's opportunity cost is lower than the opportunity cost of the pizza slice (even though both have the same monetary price), making the burger the preferred choice for this individual.

The concept of opportunity cost also relates to how we spend time, since time passed in one activity means less devoted to another. Suppose a student is deciding whether to spend a free hour watching a TV program or reading a paperback mystery. The opportunity cost of watching the TV program is the pleasure that could have been gained from reading the mystery. Likewise, the opportunity cost of reading the mystery is the benefit sacrificed by not watching the program.

The Production Possibilities Model

The production possibilities model illustrates the tradeoffs that society faces in using its scarce resources. Like all models, it is an abstraction of the real world based on various simplifications. In this case, the following assumptions are made: only two items are produced, resources and technology are fixed, and all economic resources are employed to their full potential.

Two Products

An immense range of goods and services are produced in the Canadian economy. The production possibilities model, however, narrows the list to only two; for example, computers and hamburgers.

Fixed Resources and Technology

For the model, it is assumed that there is a set amount of available economic resources and that technology remains constant. However, resources can be moved from the production of one good to the other. Workers who make hamburgers, for example, can be shifted to the assembly of computers.

Full Production

In the production possibilities model, all economic resources are employed, that is, there is no excess. Also, resources are used to their greatest capacity, no matter which good they are producing—in this case, computers and hamburgers.

The Production Possibilities Curve

In order to maximize the welfare of its citizens, a society must make economic choices. How much of each good should be produced in a certain year, given the resources

production possibilities schedule: a table that shows the possible output combinations for an economy

production possibilities curve: a graph that illustrates the possible output combinations for an economy

at the society's disposal? A choice is necessary because producing more of one item means making do with less of the other. This choice is illustrated in Figure 1.1. On the left is the economy's **production possibilities schedule**—a table outlining, in this case, the possible combinations of computers and hamburgers. Expressing the schedule in a graph gives us the economy's **production possibilities curve**. Because making more of one good means making less of the other, there is an inverse relationship between the quantities of computers and hamburgers produced. Therefore, the curve has a negative slope—from left to right, the curve falls.

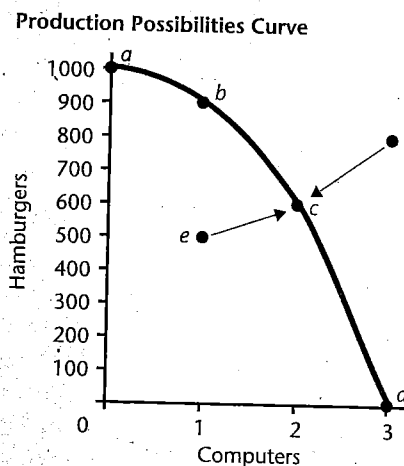
As Figure 1.1 demonstrates, it might be possible for the economy to make 900 hamburgers and assemble 1 computer in a given year (point *b*). If the output of hamburgers is reduced to 600, it might also be feasible for the economy to produce 2 computers (point *c*). The extreme cases serve as useful reference points: when all the economy's resources are devoted to the making of hamburgers, a total of 1000 can be produced annually (point *a*), but when the economy devotes all its resources to making only computers, 3 can be made (point *d*).

The Role of Scarcity

As well as depicting the economic choices a society faces, the production possibilities curve highlights the scarcity of economic resources. The curve is a boundary between all those output combinations that are within the reach of an economy and all those combinations that are unattainable. Anywhere inside the curve, such as point *e* in Figure 1.1, represents a feasible combination of the two products. At point *e*, for example, 500 hamburgers and 1 computer can be produced. The production of both hamburgers and computers could be increased by moving towards point *c* on the curve. At any point, such as *e*, some of an economy's resources are not being fully employed or used to their greatest capacity. Hence, all the points inside the curve represent a situation where resources are not being used effectively.

Figure 1.1 The Production Possibilities Model

Hamburgers	Computers	Point on Graph
1000	0	<i>a</i>
900	1	<i>b</i>
600	2	<i>c</i>
0	3	<i>d</i>



A society must choose among possible combinations of two goods. These combinations are shown in the production possibilities schedule and represented by points on the production possibilities curve. Both the schedule and the curve show that more computers can be assembled only if fewer hamburgers are produced. Any points within the curve, as illustrated by *e*, are feasible. Those outside the curve, like *f*, are not.

In contrast, point *f* in Figure 1.1 is outside the curve. In this case, the economy would be producing 800 hamburgers and 3 computers annually. As long as the economy's resources remain constant, this point cannot be reached. More of both hamburgers and computers could be made if point *f* were attainable, but the economy's resources are already being fully utilized at point *c*.

Increasing Opportunity Costs

law of increasing opportunity costs: the concept that as more of one item is produced by an economy, the opportunity cost of additional units of that product rises

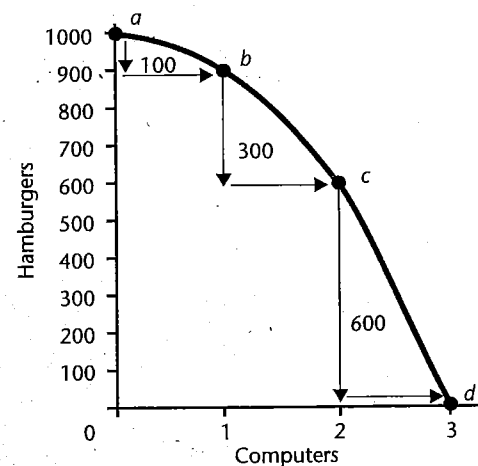
The notion of opportunity cost is best seen when moving from one point to another on the production possibilities curve. Notice that the curve in Figure 1.1 bows out to the right. This shape reflects what is called the **law of increasing opportunity costs**, which states that as more of one product is produced, its opportunity cost in terms of the other product increases. This law arises from the fact that economic resources do not shift perfectly from one use to another. For example, because of training and experience, some workers are better at making hamburgers than assembling computers. When the first computer is assembled, it is made using resources suited to computer assembly rather than to making hamburgers. Hence, the number of hamburgers sacrificed is relatively small. But if further computers are assembled, resources that are not as well suited to this new task must be shifted from making hamburgers. Therefore, more and more hamburgers have to be given up in order to gain each new computer.

The law of increasing opportunity costs is illustrated in Figure 1.2. Assume that society begins by producing only hamburgers (point *a* on the curve) and then decides that 1 computer should be assembled (point *b*). The opportunity cost of this first computer is the number of hamburgers that must be given up. Since hamburger production falls from 1000 to 900, the new computer costs 100 hamburgers. This is shown on the schedule and, on the curve, appears as the height of the triangle connecting points *a* and *b*. The same reasoning can be applied in moving from points *b* to *c*—as a second computer is added, hamburger production drops from 900 to 600. The opportunity cost of

Figure 1.2 The Law of Increasing Opportunity Costs

Hamburgers	Opportunity Cost of Computers (hamburgers)	Computers	Point on Graph
1000	100	0	<i>a</i>
900	300	1	<i>b</i>
600	600	2	<i>c</i>
0		3	<i>d</i>

Production Possibilities Curve



As the production of computers rises from 0 to 1 unit (from points *a* to *b*), the opportunity cost of the first computer is 100 hamburgers. Further expansion in the output of computers comes at higher opportunity costs: 300 hamburgers for the second computer (from points *b* to *c*), and 600 hamburgers for the third computer (from points *c* to *d*).

this extra computer is, therefore, 300 hamburgers. Finally, in moving from points *c* to *d*, hamburger production drops another 600 to zero, meaning that the opportunity cost of the third computer is 600 hamburgers. The opportunity cost of each new computer, in terms of hamburgers, therefore, rises from 100, to 300, and then to 600.

Economic Growth

economic growth: an increase in an economy's total output of goods and services

In the long run, this society may experience **economic growth**, or an increase in the total output of goods and services, either due to a rise in the amount of available resources or an improvement in technology. Both trends cause an outward shift in the production possibilities curve, which means that the area of feasible output combinations expands. As a result, the society can choose output combinations that were previously unattainable—more of both items can now be produced.

THINKING ABOUT ECONOMICS

If computers are considered a capital good and hamburgers a consumption good, then how does a society's choice between the two affect the position of its future production possibilities curve?

By choosing to produce more capital goods, such as computers, and fewer consumption goods, such as hamburgers, a society can increase its amount of available resources, shifting out its future production possibilities curve. Indeed, the focus on capital resources is an important reason why high-income

countries—Canada included—have been able to achieve healthy rates of economic growth in comparison with poorer parts of the world.



<http://www.oecd.org/statistics>

Question

How is the information revolution, including the increased use of computer-based technology, affecting rates of economic growth in such countries as Canada?

Brief Review

1. Economists assume that individuals make economic choices among scarce items by maximizing their own utility while minimizing opportunity cost.
2. The production possibilities curve shows the range of choices faced by an economy. It assumes only two products, fixed resources and technology, and full production.
3. Points inside the production possibilities curve are feasible but indicate that not all resources are being used effectively. Conversely, points outside the curve cannot be reached unless resources increase or technology improves.
4. The fact that economic resources are specialized leads to the law of increasing opportunity costs. As the economy's production of any item is expanded, that item's opportunity cost rises.