PART I CHAPTER KEY OBJECTIVES AND CONCEPTS

CHAPTER 1

THE ROLE AND METHOD OF ECONOMICS

SECTION 1.1 ECONOMICS: A BRIEF INTRODUCTION

This section covers three basic questions: What is economics? Why study economics? How does microeconomics differ from macroeconomics?

- **Economists** do not limit themselves to studying the stock market and corporate finance. Economics is a unique and relevant way to analyze a broad range of topics, including discrimination, education, crime, divorce, political favoritism and many other issues that concern or should concern us.
- One definition of **economics** is that it is the study of the allocation of our limited resources to satisfy our unlimited wants.
- **Resources** are inputs that are used to produce goods and services. Resources are **scarce** because our wants exceed what our limited resources can produce. Scarcity forces us to make choices on how to best use our limited resources. By choosing one alternative we are necessarily forgoing other valuable alternatives. Therefore, every choice involves a cost - the opportunities we are forced to give up. Almost everything we do involves making choices between conflicting wants and desires in a world of limited resources. Therefore most of our decisions have an economic dimension and insight may be gained by considering our decisions with the economic way of thinking.
- The aspects of life usually considered "non-economic" have an economic dimension. Because love, sexual activity and religion, time, family commitment all have value and opportunity costs, these issues have economic dimensions.
- Economics is a social science, concerned with reaching generalizations about human behaviour. Other social sciences study the same problems but from a different perspective. The study of economics develops a disciplined method of analyzing problems and the problem-solving tools you learn studying economics will prove valuable to you in your personal and professional life.
- **Macroeconomics** deals with the aggregate economy and covers topics such as inflation, unemployment, business cycles and economic growth. **Microeconomics** deals with the decision-making behaviour of firms and households and their interaction in markets for goods and services.

SECTION 1.2 ECONOMIC THEORY

This section considers the use of theories to perform economic analysis. What are economic theories? Why do we need to abstract from "real life"? What are the components of a theory? What are some common errors people make in doing analysis? And lastly, why do economists disagree?

- A **theory** is an established explanation of known facts or phenomena. Economic theories are statements or propositions about patterns of human behaviour that are expected to take place under certain circumstances.
- Economic theories cannot take into account every event that may have influenced an action. As a result, we **abstract** from some aspects of reality to better focus on the important explanations for the facts we want to explain. Like a road map, economic theories must abstract from many of the particular details of situations to better focus on the behavior to be explained. An economic theory provides a broad view, not a detailed examination, of human economic behavior.
- A **hypothesis** is a testable proposition about how people will behave or react to a change in economic circumstances.
- **Empirical analysis** must be used to test a hypothesis to see if the theory fits the facts. Testing a hypothesis is more difficult in economics than it is in the natural or physical sciences because economists do not usually work in a laboratory where variables can be adjusted in a controlled environment. If an economic hypothesis is supported by facts, it can then be tentatively accepted as an economic theory. However, it is always on probation - it is accepted until it no longer predicts well.
- The Latin phrase **ceteris paribus** means "let everything else be equal" or "holding everything else constant". In order to assess the effect one variable has on another, researchers must be careful to hold other things constant.
- The fact that two events occur together **(correlation)** does not necessarily mean that one caused the other to occur **(causation).** One must be careful not to confuse correlation with causation and to be clear on the direction of causation.
- The **fallacy of composition** is that if something is true for an individual, it is not necessarily true for a group. Arriving early to class to get a preferred seat works if only you take this action. If everyone in the class arrived early, seats would be as difficult to find as before.
- **Positive analysis** looks at how people do behave, not how they should behave. **Normative analysis** involves a judgment about what should be or what should happen.
- Like all other scientists, economists frequently disagree but there is probably less disagreement than is commonly believed. Disagreement may arise from normative beliefs or from differing views on the validity of an economic theory. However, surveys of economists show there is wide agreement on many issues including rent control, import tariffs, and the minimum wage.

SECTION 1.3 SCARCITY

This section looks at the idea of scarcity, a condition that exists when we cannot satisfy all of our potential wants.

- **Scarcity** exists when we try to satisfy our unlimited wants in a word of limited resources.
- The scarce resources used in production can be grouped into four categories. **Labour** is the total of both physical and mental effort expended by people. **Land** includes natural resources such as trees, water, minerals and so on. **Capital** is equipment and structures such as office buildings, tools and factories. **Entrepreneurship** is the process of combining the other resources together to produce goods and services.
- **Goods** are those items we value and tend to be tangible. **Services** are intangible acts that we value. All goods and services are produced from scarce resources.
- **Bads** are items that we do not want, like garbage and pollution.

Business Connection: *Economics in Business*

SECTION 1.4 OPPORTUNITY COST

This section explores the concept of opportunity cost, a concept that arises from the existence of scarcity.

- We are all faced with scarcity and, as a consequence, must make choices. The value of the highest or best foregone opportunity resulting from making a choice is the **opportunity cost** of that choice.
- The money price of a good is the money required to purchase the good. The opportunity (or economic) cost of the good includes all opportunity costs of acquiring the good. The opportunity cost of buying groceries includes the money cost but also the value of time spent shopping.
- The expression *"there's no such thing as a free lunch"* clarifies the relationship between scarcity and opportunity cost. Although a lunch may be free to you, the scarce resources that were used to create that lunch could have been put to alternate uses. Therefore, even a free lunch has an opportunity cost. that makes some type of

SECTION 1.5 MARGINAL THINKING

This section develops the idea of marginal thinking, looking at the incremental effects of choices. It is argued that this approach is central to rational choice.

- Most choices involve how much of something to do, rather than whether or not to do something. **Marginal thinking** focuses on the effects of adding to or subtracting from the current situation.

- The **rule of rational choice** is that people will alter their behaviour if they expect that the marginal benefit differs from the marginal cost. Individuals will increase their participation in an activity if the expected marginal benefit exceeds that expected marginal cost.
- The optimal (or best) levels of pollution or crime is not zero but where marginal benefit equals marginal cost. A rational decision as to whether we should reduce crime should be made by comparing the marginal benefits (safer society) and the marginal costs (enforcement, courts).

Debate: *Should we view Economics as a rational science?*

SECTION 1.6 INCENTIVES MATTER

- Much of human behaviour can be explained or predicted as a response to incentives, which affect the expected costs and benefits of economic activity. Incentives include prices, wages, profits, taxes and subsidies.
- Positive incentives increase benefits or reduce costs and negative incentives decrease benefits or increase costs.

Active Learning Exercise: *Do incentives matter?*

SECTION 1.7 SPECIALIZATION AND TRADE

- People are specializing when they concentrate their energies on only one or a few activities. Specialization is evident not only among individuals but among regions and countries as well.

Active Learning Exercise: *Comparative Advantage*

- As the size of a company increases, each employee can increase their level of specialization. The advantages are that employees acquire greater skill from repetition, they avoid wasted time in shifting from one task to another, they do the types of work for which they are best suited and it promotes the use of specialized equipment.
- **Trade**, or **voluntary exchange**, increases wealth. Trade increases wealth by allowing a person, region, or nation to specialize in those products that it produces at a lower opportunity costs and to trade for those products that others produce at a lower opportunity cost.

SECTION 1.8 MARKET PRICES COORDINATE ECONOMIC ACTIVITY

- Market prices communicate information about the relative availability of products to buyers, and they provide sellers with critical information about the relative value that consumers place on those products.
- The price system guides people's choices and produces solutions the questions of what goods to produce and how to produce and distribute those goods. In countries that do not rely on the market system, there is no clear communication between buyers and sellers.

- **Price controls** are government policies that force prices above or below what they would be in a market economy. Price controls effectively strip the market price of its meaning to buyers and sellers.
- **Market failure** is when the market mechanism fails to allocate resources efficiently on its own. This usually occurs when an economic agent does not face all of the costs and benefits of an economic activity, e.g. pollution and scientific research. In this case, the government may be able to improve society's well-being by intervening in the market.
- There is sometimes a painful tradeoff between efficiency and equity. There is no guarantee that the market economy will provide everyone with adequate amounts of food, shelter, and transportation.

APPENDIX: WORKING WITH GRAPHS

- Graphs are important tools that allow economists to better understand the workings of the economy. Graphs are used throughout this text to enhance the understanding of important economic relationships.

Exhibit 1: *Plotting a Graph*

- Three common types of graphs are **pie charts**, **bar graphs**, and **time-series graphs**.

Exhibit 2: *Pie Chart, Bar Graph and Time-Series Graph*

- A **variable** is something that is measured by a number. Relationships between two variables can be expressed in a two-dimensional graph.
- A **direct,** or **positive, relationship** means that two variables move in the same direction. That is, an increase in one variable (practice time) is accompanied by an increase in another variable (overall score) or a decrease in one variable is accompanied by a decrease in another variable.

Exhibit 3: *A Positive Relationship*

- When two variables move in different directions, there is an **inverse,** or **negative, relationship** between the two variables. When one variable rises, the other variable falls.
- A downward-sloping line, the demand curve, shows the different combinations of price and quantity purchased. The higher you go up on the vertical (price) axis, the smaller the quantity purchased on the horizontal axis, and the lower you go down along the vertical (price) axis, the greater the quantity purchased.

Exhibit 4: *Relationship with a Maximum*

- Many relationships in economic models have maximum or minimum values. For example, firms maximize profits and minimize costs. Exhibit 4 plots the *Laffer curve*, which illustrates the relationship between tax rates and tax revenue. When the tax rate is zero, the government collects zero revenue. As the tax rate rises, the government collects an increasing amount of tax revenue. However, as the tax rate rises, there is less incentive to work and eventually, this causes tax revenue to fall. In the exhibit, tax revenue begins to fall at a tax rate of 50%. If the tax rate was 100%, no one would work and tax revenue would be zero.

Exhibit 5: *Relationship with a Minimum*

- Exhibit 5 illustrates the case when a relationship has a minimum. In this case, as the bicycle manufacturer increases production, per bike costs of production begin to fall. At a level of 600 bikes per day, the cost per bike is minimized. As production is increased beyond 600 bikes per day, the cost per bike increases.

Exhibit 6: *Variables That Are Not Related*

- There are cases in economics when the change in one variable has no impact on the value of another variable. Exhibit 6 provides a graphical depiction of the relationship between a student's grade in economics and the lunar cycle. Since the lunar cycle has no effect on the student's grade, the students gets 75%. If grades are plotted on the horizontal axis, the graph is a vertical line.

Exhibit 7: *Unrelated Y Constant*

- Exhibit 7 illustrates the lack of a relationship between the price of blueberries in Ontario and the rainfall per month in Peru. The price remains at $2 regardless of the level of rainfall in Peru. If price is measured on the vertical axis, the graph is a horizontal line.

Exhibit 8: *A Negative Relationship*

- One of the most important graphs in all of economics is the demand curve. Exhibit 8 shows Emily's individual demand curve for CDs, with quantity of CDs purchased on the horizontal axis and the price of CDs on the vertical axis.
- The demand curve is a downward sloping line. The higher you go up the vertical (price) axis, the smaller the quantity purchased and the lower you go on the price axis, the greater the quantity purchased.

Exhibit 9: *Shifting a Curve*

- Although only two variables are shown on the axes, graphs can be used to show the relationship between three variables. If we introduce income as a third variable, as Emily's income rises, she is able to buy more CDs than before at each possible price. This can be illustrated by shifting the entire demand curve outward (rightward) compared to the old curve. This is seen in the graph in Exhibit 9(a). If her income falls, this causes the demand curve to shift inward (leftward) compared to the old curve. This is seen in graph 9(b).

Exhibit 10: *Shifts versus Movements*

- It is important to remember the difference between a movement between one point and another along a curve and a shift in the whole curve. A change in one of the variables on the graph will cause a movement along the curve, like from point A to point B in Exhibit 10. A change in one of the variables not shown will cause the whole curve to shift. The change from D_1 to D_2 in Exhibit 10 shows such a shift.

- The steepness of the lines or curves on graphs is called the **slope**- the ratio of the rise to the run. A slope can either be positive (upward sloping) representing a positive relationship or negative (downward sloping) representing a negative relationship. The numeric value of the slope shows the number of units of change of the Y – axis variable for each unit change of the X-axis variable. Slope provides the direction (positive or negative) as well as the magnitude of the relationship between the two variables. Examples are illustrated in Exhibit 11.

Exhibit 11: *Downward- and Upward Sloping Linear Curves*

- A straight line curve is called a **linear curve**. In Exhibit 12, we show two linear curves, one with a positive slope and one with a negative slope. In Exhibit 12(a), we can measure the slope from A to B as ½, because the rise is 1 (from 2 to 3) and the run is 2 (from 1 to 3). In Exhibit 12(b), the curve has a slope of -4, with a rise of -8 (a fall from 10 to 2) and a run of 2 (from 2 to 4).

Exhibit 12: *Slopes of Positive and Negative Curves*

Exhibit 13: *The Slope of a Nonlinear Curve*

- A non-linear curve is a line that actually curves. In Exhibit 13, the slope of the curve varies from point to point along the curve. We can find the slope of this curve at any given point by drawing a straight line tangent to that point on the curve. A tangent is when a straight line just touches the curve without actually crossing it.
- Many students have problems with economics simply because they fail to understand graphs.
- The determination of the **percentage change** in a quantity is a common calculation in economics. Percentage change provides a more accurate measure of the magnitude of the change compared with simple absolute change.
- The formula for percentage change of a variable that changes from X_0 to X_1 is:

  $(X_1 – X_0) \times 100 \div X_0$

