



Chapter 1: The Subject Matter of Economics

Learning Objectives

After studying this chapter, you should be able to

- 1.1** Explain the importance of understanding economics.
- 1.2** Discuss economics as a profession.
- 1.3** Discuss the subject matter of economics.
- 1.4** Define resources, classify them into categories, and discuss the incomes derived from each category of resources.
- 1.5** Explain the scientific method and discuss economic methodology.
- 1.6** Identify positive and normative economics and explain why economists sometimes disagree.
- 1.7** Recognize different types of variables and cause-effect relations.
- 1.8** Distinguish between microeconomics and macroeconomics.

Assess Your Knowledge

Answers to these questions can be found on

- 1.** Identify two topics that you would expect to study in economics.
- 2.** Identify one resource that is not scarce.

3. Why do people have to make choices?
4. Can someone make a choice without giving up something?
5. Identify two social science disciplines.

LO 1.1 Explain the importance of understanding economics.

Why Study Economics?

We study economics to understand how the economy works. Economics helps us learn concepts, theories, and skills that are useful for analyzing real-world problems. It teaches us how to think about prices, jobs, trade, and government policies. Economics also shows us how to read data, compare options, and make better decisions. By studying economics, we can see how policies affect people, businesses, and the economy as a whole.

Why Knowledge Is Power

Knowledge is powerful because it helps people make good decisions, solve problems, and find new opportunities.

1. **Better Decisions**
People use knowledge to make choices based on facts and evidence. This lowers uncertainty and increases the chance of success.
2. **Solving Problems**
Knowledge helps us understand the cause of a problem and think through possible solutions. This is useful in everyday life, school, and work.
3. **Creating Opportunities**
Learning new skills and ideas allows people to adapt and grow. This can lead to starting a business, getting a better job, or improving their community.
4. **Gaining Confidence and Control**
Knowledge gives people the ability to think for themselves, ask questions, and spot false information. This leads to a stronger, more independent society.

5. **Leading and Inspiring Others**

People who know their subject well can guide others, build trust, and lead change. Strong leaders use knowledge to help groups reach their goals.

Sources of Knowledge

We gain knowledge from many different sources that help us understand the world and make better decisions.

Experience

People learn by doing things and thinking about what went well or what went wrong. Real-life experiences help build useful skills and insight.

Education

Schools, colleges, and universities provide organized learning. Education teaches basic facts, how to think critically, and how to become an expert in a subject.

Observation

Watching people, nature, or events can help us learn. Scientists use observation to gather data and discover how things work.

Authority

Experts—like teachers, researchers, and professionals—share what they know through books, papers, or speeches. Learning from trusted sources helps us build on existing knowledge.

Reasoning

People can also learn by thinking carefully. Using logic, they can reach new conclusions based on what they already know.

Intuition

Sometimes, people know something without thinking it through. This kind of “gut feeling” may not be based on facts, but it can still be useful and lead to new questions.

Tradition and Culture

Families and communities pass down beliefs, values, and practices. These shared customs shape how people think and live.

The Scientific Method

This method uses careful observation, testing, and analysis to find out what is true. It helps us build knowledge based on evidence.

These different sources work together to help people understand the world and solve problems more effectively.

Knowledge of Economics

Understanding economics is essential in today's world. The economy is a frequent topic in the media, appearing in newspapers, on the radio, on TV, and online. Whether for governments, large corporations, or individuals, grasping economic challenges is crucial.

Economics helps explain global issues and personal decisions. It sheds light on supply chain problems, the impact of new technologies like artificial intelligence, climate change debates, price-fixing cases, natural disasters, recession strategies, and protests about income inequality. Economics also influences daily choices, such as deciding between summer school or a vacation, buying a car or taking public transport, finding a place to live, and understanding currency exchange rates for shopping abroad. For instance, economics can help us understand why the Canadian dollar fell from US \$69.47 on February 1, 2025, to US \$69.13 by February 28, 2025.

Insight into the Economy and Society

Understanding how the economy functions is essential for addressing national issues and improving performance. The economy deeply impacts society. It affects our relationships, environment, wealth distribution, jobs, and income. Past and present economic choices, like prioritizing military spending over education and healthcare, influence our lives long-term.

Control over Our Future

A deeper understanding of economics and society provides more control over our future. The recent global economic crisis related to COVID-19 may have been far worse without economists' knowledge of how the economy works and how to manage its risks.

Understanding Global Affairs

The world is changing rapidly, and information technology allows us to stay informed. Major global events, such as climate change, economic tensions between China and the US, and migration risks in Africa and the Middle East, are widely covered in the media. Ongoing conflicts, like the war in Ukraine and the Gaza war, continue to claim lives, while the 2020 pandemic affected the entire globe. Extremism and ethnic nationalism are on the rise worldwide.

Economics helps us understand why these events happen and how they affect countries, governments, and individuals.

Being a Well-Informed Citizen

For college students, learning to manage income is critical. It is about getting the most satisfaction from purchases but also understanding how individual decisions affect the economy and society. In a democracy, being well-informed means recognizing the consequences of choices and figuring out which ones will benefit everyone.

Pressing Economic Questions

Several economic questions highlight the complexities of government decisions. Why does the federal government spend more than it collects during economic downturns? Does this strategy effectively stimulate economic recovery? During the early phase of COVID-19, support was provided to individuals,

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small businesses, and companies. Was this the right approach? What were its effects on Canadians, and did it have any drawbacks?

In response to rising inflation, the Bank of Canada increased interest rates. Was this the best decision, and what actions can the government take to address unemployment? The debate over whether Canada should protect its industries by restricting trade and whether subsidies for specific sectors represent sound economic policy deserves closer attention.

Let us explore some pressing economic questions that illustrate the complexity of government decision-making. Why does the federal government spend more than it collects in revenue during economic downturns, and can this strategy effectively stimulate economic recovery as intended? Consider the government's response during the early phase of COVID-19, where support was extended to individuals, small businesses, and companies. Was this intervention the correct approach? What effects did it have on Canadians, and were there any drawbacks? In the face of rising inflation, the Bank of Canada opted to increase interest rates. Was this a prudent decision, and what measures can the government take to address unemployment? The debate on whether Canada should protect its industries by restricting trade and whether subsidies for certain sectors represent sound economic policy requires further discussion.

Even during elections, the choices we make, influenced by political platforms, are tied to economic issues. Understanding economics equips us with the ability to make informed decisions, relying on logic rather than solely on emotions.

Developing Logical Thinking

Studying economics goes beyond memorizing facts and figures; it involves developing a distinct approach to thinking and decision-making. Good decision-making requires carefully weighing the benefits and drawbacks of each option. Economic analysis is an exercise in applying logic, improving our ability to think rationally and use common sense effectively.

Finding Personal Fulfillment

Studying economics offers both personal fulfillment and practical benefits. The intellectual challenge and excitement of exploring economic theories and applications can be highly rewarding. Excelling in

economics can lead to prestigious roles, such as corporate leadership positions or economic advisory roles within government agencies, often accompanied by a significant six-figure salary. Economists are among the highest-paid professionals in the social sciences.

Reading Comprehension

1. Present an argument to support the claim that economics is worth studying.
2. If you were to purchase a car, what benefits would you consider? What costs would you consider?
3. Describe a recent international event that is related to economics.

Many economists believe that issues, whether personal, organizational, national, or international, often have economic elements. Therefore, studying economics is essential.

Learning Objective 1.2: Discuss economics as a profession

Economics as a Profession

People with university degrees in economics have a broad range of career opportunities across various sectors. They can pursue roles as economists in diverse organizations or enter academia as teachers and professors at educational institutions. Below is a closer look at where they can work:

As Economists

Private Sector: Economists work for banks, insurance companies, and large manufacturing firms. They analyze market trends, assess economic risks, and provide strategic advice. A significant part of their work involves assessing the impact of tariffs on the economy. Tariffs, as taxes on imported goods, influence market prices, consumer choices, and international trade relations. Economists analyze how tariffs affect production costs, industry competitiveness, and consumer prices. These factors ultimately affect overall economic performance.

Labor Unions

Economists working for labor unions play a crucial role in supporting the union's objectives through economic analysis and strategic advice. Their work typically includes:

- **Wage Negotiations:** They analyze wage data and labor market trends to support the union's bargaining for higher wages or better employment conditions for members.

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- **Benefit Analysis:** They evaluate the cost and benefits of employment packages, including health insurance, retirement plans, and other benefits, to negotiate favorable terms for union members.
- **Economic Impact Studies:** They conduct studies to understand the economic impact of proposed job actions, such as strikes or lockouts, and assess potential effects on the industry and economy.
- **Policy Advocacy:** They analyze economic policies and labor laws to help unions advocate for policies that improve labor standards and promote workers' interests.
- **Labor Market Research:** They research labor market trends, employment rates, and industry-specific issues to inform the union's strategy and initiatives.
- **Education and Training:** They provide education and training to union leaders and members on economic issues affecting the labor market and workers' rights.

Government Departments and Agencies

Economists play key roles in formulating economic policies, conducting economic research, and analyzing data to aid in decision-making processes. Their work may involve evaluating the impact of tariffs and trade restrictions on domestic industries. Tariffs create economic distortions. Economists help governments decide whether to implement them or seek trade agreements that may minimize negative effects on consumers and industries.

Research Organizations

Economists conduct detailed studies and produce reports on a wide range of economic issues. Many studies examine the broader effects of tariffs on trade balance, inflation, and national income.

Nonprofit Organizations

Economists contribute to the development of policies and strategies to address social, environmental, and economic challenges. They also analyze the consequences of tariffs on global poverty, the environment, and access to affordable goods, particularly in developing economies.

Independent Consulting Firms

Economists offer expert advice on economic strategies, market analysis, and policy evaluation to businesses and governments. The impact of tariffs on business operations and profitability is a common area of analysis. Economists advise companies on how to navigate international trade policies.

International Organizations and Agencies

Economists work for entities like the United Nations, the World Bank, and the International Monetary Fund. They address global economic issues, from development challenges to financial crises. They analyze the effects of tariffs on global trade dynamics and advocate for policies that reduce trade barriers and promote economic cooperation.

Leadership

In some cases, economists serve in high-ranking government positions, such as ministers. They directly

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influence national economic policies. In these roles, economists advise on tariff strategies, considering their impact on domestic industries, inflation, and international trade relations.

These examples highlight the versatility of a career in economics. Economists impact various aspects of society and the global economy through their work in different sectors.

As Teachers and Professors

Economists can also work in educational institutions: high schools, colleges, and universities.

This distinction highlights the dual career paths available to individuals with degrees in economics: as professional economists and as educators.

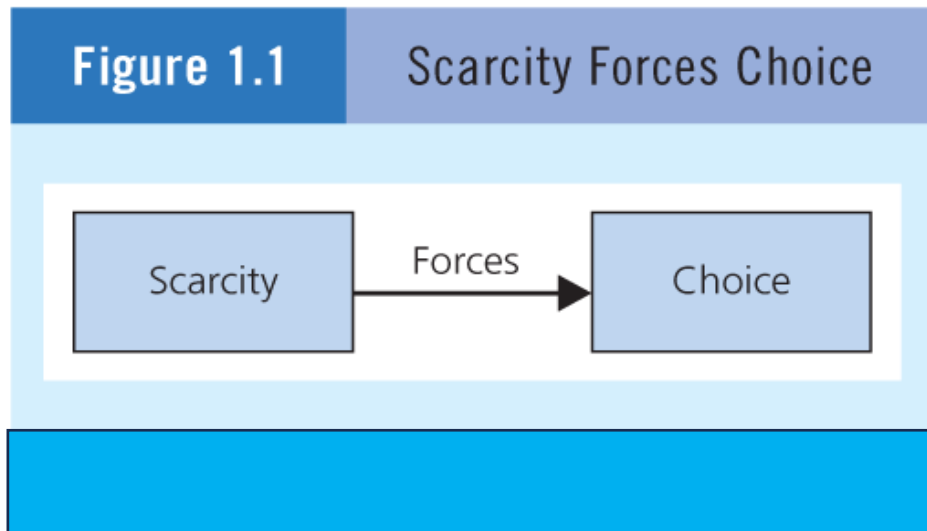
Economists play a crucial role in various organizations by applying their knowledge of theories, models, and methodologies to address a wide range of problems. Major tech companies, Amazon, Google, and Apple, hire economists to analyze product demand and the effects of pricing changes on profits. This analysis aids in strategic decision-making regarding product development, marketing, and pricing. Similarly, banks rely on economists to forecast interest rates and assess loan demand. These tasks are essential for formulating lending policies and managing financial risk. At the governmental level, economists evaluate the impact of tax policies on government revenue and overall economic activity, providing valuable insights for policymaking and budget planning. Labor unions employ economists to research wage, employment, and working condition issues, supporting advocacy for better member terms. Through these varied roles, economists contribute significantly to strategic planning and decision-making across multiple sectors.

What Is Economics All About?

Scarcity

Our desires outstrip the available resources needed to satisfy them. We yearn for a wide array of things, such as cars, homes, clothing, technology, education, transportation, food, healthcare, and entertainment. Although our wants appear limitless, the resources to fulfill them are not.

Figure 1.1: The relationship between scarcity and choice



Consider if it were possible to identify every product and service Canadians dream of. Could our economy make all those dreams a reality? The answer is definitively 'no.' Canada lacks sufficient factories, natural resources, machinery, and workforce to meet every desire. The situation, where our wants exceed our resources, is known as scarcity. Despite Canada's abundant resources and high standard of living, scarcity remains a persistent problem.

***scarcity:** the situation in which resources are inadequate to produce all the goods and services that people want*

Scarcity arises because of two fundamental conditions. First, there are limited resources available to individuals and societies. By resources we mean natural resources, human resources (labor and skills), physical capital (like machinery and infrastructure), and time. Second, people's desires and wishes are limitless. When we compare these finite resources to the limitless desires of individuals, scarcity arises. Scarcity is a relative concept, dependent on the interplay between available resources and unbounded human wants and needs.

Choices and trade-offs

Because of scarcity, where resources are limited and our desires are endless, we are constantly faced with the need to make decisions. The decision-making process inherently involves making choices. For

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example, if you have a budget of \$800 to spend, you might decide between buying a high-end smartphone for \$800 or a high-quality jacket for \$400. In this case, buying the smartphone means you cannot afford two jackets at \$400 each, a direct trade-off between choices. Similarly, when a government has an additional budget, say \$300 million, it must decide between competing priorities, like constructing a new hospital or upgrading the public transportation system. Choosing one project means the other cannot be pursued with the same funds. This scenario illustrates how, even on a larger scale, choices must be made because resources are insufficient to cover all wants.

Even individuals as wealthy as Jeff Bezos and Elon Musk face scarcity and must make choices, given their finite resources, particularly time. Their situation highlights that choice is a direct consequence of scarcity. **Figure 1.1** illustrates the relationship between scarcity and choice.

Society confronts the persistent problem of scarcity and, as a result, must choose among different available alternatives. Choices arise, for example, in deciding whether to invest in more schools or hospitals, upgrade roads or enlarge recreational facilities, allocate resources for constructing more submarines or for boosting environmental protection efforts, and so on. The presence of scarcity highlights the need to make decisions.

Scarcity forces trade-offs on individuals, businesses, governments, and societies at large. As a result, economists say, "there is no free lunch."

Business Situation 1.1
John Adams owns a corner grocery store. He has just obtained a loan of \$25 000 from his bank. He is thinking of using this money to increase the size of his stock.
What element of economics does this situation illustrate?

What is economics?

Economics can be defined in two main ways, depending on what one wants to emphasize: its nature as a discipline or its methodology.

Economics as a Discipline: This definition emphasizes economics as a field of study. It

Reading Comprehension

1. Why is it necessary for individuals, businesses, and governments to make decisions?
2. Is the definition of economics as the study of scarcity and choice sufficient in your view?
3. Would you experience scarcity personally if you could acquire all the goods and services you desire?
4. What attributes qualify economics as a social science?

defines economics as a social science that focuses on the production, distribution, and consumption of goods and services in society. In this context, economics explores how societies manage resources to meet their needs and wants.

Economics as a Methodology: This definition highlights the approach economists take in their analysis. It defines economics as a social

science that studies how limited resources are allocated among competing uses. This perspective underscores the fundamental concept of scarcity and how choices are made to address it. While both definitions are valid, many economists adhere to the second definition, which emphasizes the central role of scarcity and the allocation of resources in economic analysis.

Economics is the social science that studies how people use limited means to satisfy their unlimited wants.

What is a Social Science?

Social science is the study of societies and the relationships among individuals and groups within them. It includes various disciplines that examine different aspects of society. Psychology focuses on the mind and behavior. Sociology studies society, its institutions, social interactions, and groups. Anthropology explores humanity, including its origins, development, and cultural diversity. Political science investigates political systems, government structures, political behavior, and the theory and practice of politics. Although these disciplines differ, they often

overlap. For example, both economics and political science explore the functions of the state, though from different angles.

Social science is the study of societies and the relationships among individuals and groups within societies.

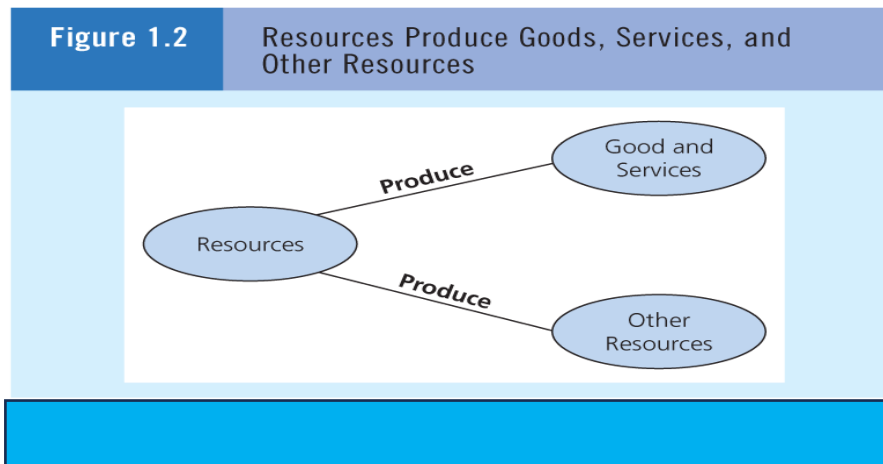
Resources

Learning Outcomes 1.4 Define resources, classify them into categories, and discuss the income derived from each category of resources.

To produce goods and services, we need inputs. Inputs are more generally referred to as resources or factors of production.

Figure 1.2 illustrates that resources not only satisfy consumer wants through the production of goods and services but also generate inputs for further production. For example, trees are transformed into paper, rivers facilitate navigation and fishing, buildings provide spaces for living and storage, humans operate machinery, and nuclear power plants produce electricity. Factories produce a diverse array of products, from shoes to clothing. The utilization of these resources supports the complexity of our economic system.

Figure 1.2 Resources and Production



What is the difference between goods and services?

The primary distinction between goods and services lies in their tangibility. Goods are tangible, physical items that can be physically handled, serving various needs and desires. In contrast, services are

intangible; they cannot be held or touched, but they fulfill needs just as goods do. For example, products such as computers, iPads, television sets, shoes, and textbooks represent goods, whereas activities like teaching, banking, providing transportation, and garbage collection exemplify services.

Both goods and services fulfill desires and are sought after in the market, while items categorized as "bads," such as garbage, pollution, and noise, are universally unwanted and cause dissatisfaction. Unlike goods and services, which individuals are eager to acquire, bads are things people generally wish to avoid. Interestingly, just as individuals are willing to pay for goods and services they desire, they are also willing to spend money to eliminate these undesirable "bads." This willingness to engage in financial transactions, whether to acquire satisfaction or avoid dissatisfaction, highlights the fundamental dynamics of economic exchanges.

goods tangible things that satisfy wants

- **services** intangible things that satisfy wants

commodities goods and services together

bads things that are unwanted and do not give any satisfaction

Water is an important resource that Canada is well endowed with.

The “bads” of the economy

The economy, though not designed to do so, often produces "bads." The primary aim of utilizing resources in the economy is to generate desirable outcomes; however, the process of producing goods and services often leads to the inadvertent creation of negative consequences, known as "bads." For example, the manufacturing of automobiles and steel in factories releases significant environmental pollutants. Similarly, daily activities like driving cars and heating homes contribute to environmental pollution. Therefore, it becomes clear that economic activities, though intended to produce positive outcomes, frequently result in the unintentional generation of "bads."

Classification of resources

Classification of Resources

1. **Land:** In economics, "land" encompasses all the resources that nature offers: arable land, minerals, forests, and water bodies. It refers to physical space and its contents. Land's economic value is influenced by its location, fertility, and the resources available within it.

land all natural resources

2. **Labour:** In economic terms, "labour" refers to the human effort, both physical and mental, involved in producing goods and services. It includes work performed by individuals to operate machinery, provide services, or assemble products. Labour is essential for transforming other resources into consumable goods or services.

Human Capital: Human capital refers to the skills, knowledge, experience, and education that individuals possess. It enhances the ability of the workforce to perform labour efficiently. Human capital represents the capacity and potential of the workforce, which can be developed through education, training, and experience. While labour is the effort exerted in production, human capital focuses on the quality and effectiveness of that effort, making it crucial for improving productivity and economic growth.

3. **Capital:** In economics, "capital" includes both physical—machinery, tools, factories, infrastructure—and human capital like knowledge, skills, and education. Physical capital is used in production, improving efficiency and output. Human capital represents individuals' education and experience, vital for productivity.

capital produced means of production

4. **Entrepreneurship:** This resource encompasses the ability to innovate, take risks, and coordinate production factors. Entrepreneurs spot opportunities, make decisions, and combine land, labor, and capital to launch new products or businesses that fuel economic growth and innovation.

entrepreneurship the organization of land, labour, and capital into production; the risk-taking aspect of business decision making

These economics definitions of resources differ from their everyday usage. In economics, these concepts provide a structured way to understand how resources are utilized in the production of goods and services.

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Financial capital

In economics, we distinguish between financial and real capital. While in everyday language, financial capital and physical capital are often used interchangeably, economics draws a clear distinction between the two. Financial capital refers to the funds available for purchasing real capital. In economics, the emphasis is on real capital, which refers to the physical objects produced by people, such as machines and tools, which are used in conjunction with other productive factors to manufacture goods and services. Therefore, capital can be categorized into three main types: real capital (comprising machines, tools, etc.), human capital (encompassing education, training, etc.), and financial capital (representing money).

***financial capital** financial resources (money, credit, and other funding source, as opposed to real capital (machinery, equipment, tools,)*

Incomes received by owners of resources

The factors of production—labor, land, capital, and entrepreneurial skills—generate incomes for their owners. Workers receive wages and salaries, landowners earn rent, capital owners receive interest and dividends, and entrepreneurs earn profit. Whether it's offering labor services, leasing land, or investing capital, each resource category contributes to the generation of specific forms of income, as summarized in Table 1.1."

***rent** income from land*

***interest and dividends** income from capital*

***wages and salaries** income from labour*

***profit** income from entrepreneurship*

Note that resources are the source of all income. When we sum up all wages and salaries, rent, interest and dividends, and profits in an economy, we arrive at the total income in that economy. Therefore, if we denote rent as R , wages and salaries as W , interest and dividends as i , and profits as π , the equation for total income is as follows:

$$\text{Total income} = R + W + i + \pi$$

Table 1.1 Factors of Production and Their Earnings

Factors	Earnings
Land	Rent
Labour	Wages and salaries
Capital	Interest and dividends
Entrepreneurship	Profits

For instance, if rent amounts to \$90 billion, wages and salaries add up to \$550 billion, interest and dividends add up to \$45 billion, and profits total \$110 billion, then the total income is $\$90 + \$550 + \$45 + \$110 = \$795$ billion.

Economics and the Scientific Method

Learning outcome 1.5 Explain the scientific method and discuss economic methodology.

What is science?

While the popular image of science often conjures visions of scientists in white lab coats, surrounded by test tubes and high-tech equipment, the term 'science' encompasses more than just these visual tropes. It represents a distinct approach to understanding the world, characterized by careful observation, accurate measurement, and thorough experimentation. Science is defined as "the systematic study of the structure and behavior of the physical, natural, and social world through observation, experimentation, and the testing of theories against evidence." Science is not only a method of acquiring knowledge but also the body of knowledge that results from this systematic inquiry. For our purposes, we define science, or the scientific method, as follows:

Science or the Scientific Method: A systematic approach to acquiring knowledge through observation, measurement, experimentation, and the formulation, testing, and revision of hypotheses.

Let us explore the fundamental aspects of the scientific approach, focusing on observation and measurement, hypotheses, and verification.

Observation and Measurement

An essential aspect of scientific inquiry involves careful observation and precise documentation of facts related to the phenomena under study.

Reading Comprehension

1. Scarcity of resources is an economic reality. What are these resources and how are they broadly classified?
2. Provide two examples each of land, labor, capital, and entrepreneurship.
3. What distinguishes real capital from financial capital?
4. Why can revenues generated from Alberta tar sands be categorized as rent?

This constitutes the empirical or descriptive dimension of science. To support this work, scientists rely on technical terms with clearly defined meanings. The development of such specialized terminology represents a major milestone in the advancement of any scientific discipline.

Hypotheses

Observation frequently prompts ideas, intuitions, or conjectures about possible relationships among the elements under study. From these preliminary insights, a hypothesis emerges—a statement proposing a suspected connection

between two or more variables. Unlike established facts, a hypothesis functions as a testable proposition. For instance, one might hypothesize that an increase in interest rates leads to higher unemployment. Hypotheses play a central role in the scientific method by guiding the design of experiments and the collection of evidence to support or refute the proposed relationship.

A hypothesis is a statement suggesting potential relationships between two or more variables.

There is a clear distinction between facts and hypotheses. Consider the following two statements:

Statement 1: The average grade of students who took economics last term was 70%.

Statement 2: Students who attend classes regularly and complete their homework achieve higher grades than those who do not.

The first statement reports an observed outcome and, on its own, presents a fact. The second qualifies as a hypothesis because it proposes a relationship between academic performance, class attendance, and homework completion. A hypothesis must be framed in a way that allows for empirical testing—either confirmation or rejection through evidence.

The distinction between a fact and a hypothesis depends on context. If the first statement were made prior to collecting data, it would function as a hypothesis—an expectation subject to empirical testing. In scientific research, hypotheses typically begin as informed predictions that are later examined through data collection and analysis. A statement qualifies as a hypothesis not solely because of its content, but because of its role in the process of inquiry.

Verification

Testing is at the core of the scientific process. After scientists formulate their hypotheses, they embark on a journey to assess the extent to which these hypotheses are consistent with empirical evidence. They collect, organize, and test data to determine whether their hypotheses can be validated or refuted. This process of connecting questions to concrete evidence serves as a defining feature that sets scientific inquiry apart from other forms of investigation.

In the natural sciences, scientists typically conduct controlled laboratory experiments to test their hypotheses, but in the social sciences, testing is primarily carried out through statistical analysis.

Is Economics a Science?

Economics differs from the natural sciences—physics, chemistry, and biology—where controlled experiments involving minerals, gases, or plants are standard practice. As a social science concerned with human behavior, economics faces greater constraints in conducting laboratory-style experiments.

Although economists cannot observe human behavior through laboratory instruments, economics remains a scientific discipline. Economists collect data, analyze patterns, formulate hypotheses, and test these propositions to develop generalizations about economic behavior.

To evaluate government policies, some economists have adopted experimental methods, including randomized controlled trials (RCTs). This approach, especially common in development economics, applies the scientific standards of medical research to assess policy outcomes. While RCTs provide a rigorous tool for identifying causal relationships, their use remains limited because of high costs and ethical concerns. As a result, the discipline continues to rely primarily on statistical techniques to test hypotheses.

The methodology of economics

Economists use a specific methodology to study economic phenomena. Because the economy is complex, they simplify it by constructing models. An economic model is a simplified representation of the economy or of a particular element within it. It isolates the variables considered most relevant to the question under investigation and omits details that do not directly affect the analysis. This approach reflects the principle of Occam's razor, named after the fourteenth-century philosopher William Occam, which favors simplicity when explaining complex phenomena.

***economic model** a simplified representation of economic reality*

Economists use models in much the same way engineers do. Just as an engineer designs a bridge model to assess its functionality, appearance, and safety before construction, economists develop models to explore the dynamics of specific aspects of the economy. These models allow for the prediction of outcomes, the analysis of complex interactions, and the examination of how different factors influence economic activity. Throughout this book, various economic models will be introduced and applied to enhance understanding of economic phenomena.

What are the parts of a model?

An economic model can be expressed verbally, mathematically, or graphically. Whatever form an economic model takes, it has the following components:

- **Definitions**
- **Assumptions**
- **Hypotheses**
- **Predictions**

Definitions

In economic modeling, all terms related to the model must be defined with precision. A definition specifies the meaning of a concept to avoid ambiguity and ensure consistent interpretation. Economists have developed a specialized vocabulary—terms such as land, capital, scarcity, and rent—that forms the foundation of economic analysis. As you progress through this book, you will encounter many more. The primary purpose of defining terms in a model is to clarify what each variable represents, making measurement and interpretation possible. For instance, using the term "interest rates" without clarification creates confusion—does it refer to short-term rates, long-term bond yields, mortgage rates, or deposit rates? Precise definitions of model-specific terms are essential to maintain clarity and analytical rigor in economic modeling. When testing hypotheses, it may be necessary to redefine economic terms to enable their quantification and the specific testing of hypotheses. This process, known as "operationalization," adapts concepts for empirical testing; it ensures that they are measurable and testable within the study's framework.

***definition** a set of words that explain the meaning of a term or concept.*

Assumptions: An economic model is designed to help us understand how the economy, or a part of it, works under specific conditions. These conditions are laid out as assumptions. In simple terms, assumptions are statements that tell us about the circumstances under which the model is meant to function.

In economics, we usually make two types of assumptions. One type is about how people and businesses behave. For example, we assume that consumers aim to maximize their satisfaction, while businesses strive to maximize their profits. The other type of assumption helps simplify the complexities of the real economy, making it easier for economists to analyze. For instance, if economists are not currently concerned with a country's international trade, they might assume that it does not engage in trade with other countries. These simplifications are necessary because the real economy can be quite complex.

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Admittedly, some economic assumptions might seem a bit unrealistic, but they often help us understand economic concepts better, even if they do not perfectly mirror reality.

assumptions *statements of the conditions under which a model will work.*

The Ceteris Paribus Assumptions: In economics, the ceteris paribus assumption is crucial. This Latin term translates to "other things being equal." It allows economists to isolate the effects of one variable by assuming all other variables remain constant; it facilitates a clearer analysis of cause and effect.

To analyze how a drop in iPhone prices affects sales, one might begin by predicting that lower prices lead to higher sales. But the analysis becomes more complex when other variables—income levels or preferences for iPhones over competing smartphones—are introduced. If sales rise alongside a price drop, it becomes difficult to determine whether the increase was caused by the price change alone. Higher incomes, for instance, might also contribute to greater demand. This is where the ceteris paribus assumption becomes essential. By holding all other variables constant, it isolates the effect of price on demand, making it possible to assess the relationship more clearly.

ceteris paribus *other things being equal; allows for the investigation of the effects of one variable while assuming that others remain constant.*

To discern the influence of a single factor amidst many, it is crucial to isolate it while holding all other conditions constant. In the previously discussed scenario, this involves separating the impact of variables like income and preferences, among others, from the price of iPhones. This approach aims to understand how changes in the price alone affect iPhone purchases without the interference of external factors.

The ceteris paribus assumption is our tool for simplifying complex economic scenarios. This principle enables us to keep all variables except the one under investigation—such as the price of iPhones—constant. By assuming factors like income and preferences remain unchanged, we can isolate and examine the effects of a price change on iPhone purchases. This approach helps us draw conclusions like, "If the price of a product drops, and everything else remains the same, people will buy more of it."

Hypotheses: We have discussed hypotheses earlier, but let us review them. They are essentially statements that suggest potential connections between various variables. What is intriguing about hypotheses is their testability; we can investigate whether they hold true or not. This testing process plays a crucial role in expanding our understanding of economics, and you will encounter many of these hypotheses as we progress through this book.

When hypotheses are tested and accepted, we can distill the results into economic theories. An economic theory serves as a concise summary of our beliefs about how an economy functions, either in its entirety or in its specific aspects. It is a way for us to organize and communicate our economic knowledge effectively.

Predictions: A hypothesis enables us to make predictions. If these predictions are consistent with the facts, we can make reasonably confident forecasts, within a certain margin of error, about what will happen in the economy, although not with absolute certainty. These economic predictions often take the form of "if something happens, then this will likely happen with a certain probability."

Economic predictions are different from economic forecasts. An economic prediction gives a sense of where a variable might head when specific conditions are met. On the other hand, an economic forecast assigns a future value to a variable. Predictions tend to be qualitative whereas forecasting tends to be quantitative. Let us look at some examples to make the distinction clearer.

Here are some examples to illustrate the difference:

Economic Prediction: If the government reduces taxes, consumer spending will probably increase.

Economic Forecast: If the government cuts taxes by 10%, consumer spending is projected to increase by 5% in the next quarter.

***economic prediction** a statement of the general direction of a variable resulting from the fulfillment of certain conditions.*

***economic forecast** the assignment of a future value to a variable*

Assessing the "Goodness" of an Economic Model

We can evaluate the effectiveness of an economic model by its ability to predict economic reality. The primary purpose of an economic model is to help us understand and predict aspects of economic reality. A good economic model excels in these functions. When comparing two models, if Model A provides a better explanation and prediction of economic phenomena than Model B, then Model A is considered superior. Here is an example to illustrate this.

Model A's Prediction: If people's wages and salaries increase by 10%, their purchases of goods and services will increase by 8%. **Model B's Prediction:** If people's wages and salaries increase by 10%, their purchases of goods and services will increase by 5%.

Reality (Observed Data): When wages and salaries increase by 10%, people increase their purchases of goods and services by 7.5%. In this scenario, we would favor Model A as the better model because it aligns more closely with observed reality.

If an economic model consistently fails to explain real-world observations, it may be considered inadequate and rejected. In the past, emphasis was placed on the model's assumptions, but nowadays, the primary criterion for evaluating a model's quality is its ability to explain and predict economic phenomena.

The Role of Computers and Econometrics in Economics

The advent of high-speed computers has revolutionized the field of economics. It has enabled economists to efficiently process vast quantities of data within a remarkably brief time. Consequently, testing economic hypotheses against real-world observations has become a more straightforward task.

The specialized field within economics, which employs statistical techniques to examine economic hypotheses, is known as **econometrics**. It has gained tremendous significance and has become an integral part of economic studies. Many educational institutions now mandate

economics majors to complete at least one course in economic statistics or econometrics due to its pivotal role in economic analysis.

Reading Comprehension

1. What are the fundamental elements in scientific inquiry, and to what extent do economists follow the scientific approach?
2. What is an economic model, and why do economists find it useful to construct models?
3. What are the components (parts) of an economic model?
4. Explain the role of assumptions in economic models.
5. Discuss randomized control tests in economics.

econometrics the application of economic theory, mathematics, and statistical methods to test economic hypotheses. Positive and Normative Economics and Disagreement among Economists

Learning	Outcome	1.6
Identify	positive	and
normative	economics	explain

why economists sometimes disagree.

Positive economics deals with objective facts of the economy, while normative economics is based on the views of economists about the economy or an aspect of the economy. Positive economics uses positive statements whereas normative economics uses normative statements. Positive statements are factual, objective statements, and can be verified by referring to relevant facts. These statements describe what is, was, or will be in the economic realm. An example of positive economics is the statement, "An increase in average income levels leads to higher consumption levels." This statement is subject to empirical verification based on observed data.

In contrast, normative economics deals with statements that involve value judgments, opinions, or subjective beliefs about what ought to be. These statements express opinions about what is desirable or should happen in the economy. They are not subject to empirical verification because they involve individual or societal values and preferences. An example of normative economics is the statement, "The government should increase taxes on the wealthy to reduce income inequality." This statement reflects a normative perspective on what government policy should be, based on a particular value judgment. Normative statements can be based on positive statements.

Positive economics deals with objective economic reality that can be empirically tested, while normative economics deals with a desired economic reality that expresses value judgments.

positive statements: *statements about what is, what was, and what will be.*

normative statements: *statements about what ought to be.*

Positive economics explains or describes how the economy works and the behavior of economic units. Positive economics attempts to explain what will happen under certain conditions, but it does not explain what the economic situation ought to be. It does not seek to make any judgments about whether the result of any economic action is good or bad. The concern of positive economics is to describe the economic reality as it is and how it works. What factors contribute to the price of electric vehicles falling? How did the COVID-19 pandemic affect global supply chains? Why has the stock market experienced fluctuations in response to recent changes in the rate of interest? How will an increase in minimum wage affect employment rates? Such questions relate to positive economics.

positive economics *explains or describes how the economy works.*

Normative economics is concerned with explaining how the economy should work. It attempts to judge whether economic outcomes are good or bad and to what extent they can be improved. Should the Government of Canada invest in renewable energy to combat climate change? Should the provincial governments provide universal healthcare coverage for prescription drugs? Should governments implement a universal basic income to address income inequality? Should the government incentivize electric vehicle adoption to reduce carbon emissions? Should Canada implement stricter regulations on the tech industry to protect user privacy? Should the Canadian government provide more financial assistance to developing countries for pandemic preparedness? Normative economics deals with answers to such policy-oriented questions.

normative economics *explains how the economy should work.*

There is a clear link between positive economics and normative economics. Not surprisingly, normative economics relies heavily on positive economics. Let us consider the following normative economic issue: Should Canada continue its commitment to reducing greenhouse gas emissions to combat climate change? We could answer this question based on ideology or emotion, but an answer based on an economic analysis of the situation would be preferable. What are the likely benefits of these environmental commitments? What are the economic

costs? Answers to such questions will help us answer the normative question about climate change policy.

Disagreement among economists

Economists disagree, but there is much more agreement among economists than disagreement. This fact may surprise you in view of all the stories of disagreement among economists. Physicists disagree among themselves; so, do biologists, geologists, and chemists. Scientists do not always see eye to eye. But let us explore why economists sometimes have varying opinions. Economists, like anybody else, have different values, and they may assess economic situations and events differently based on their individual perspectives. When economists are asked to make judgments about certain economic actions, they may strive for objectivity, but their personal beliefs and values can influence their views.

For example, one economist might argue that imposing a heavy tax on cigarettes is necessary to discourage smoking because it is bad for public health. Another economist may counter that singling out cigarettes is arbitrary when many other products also pose health risks. This

Reading Comprehension

1. What is the difference between positive and normative economics?
2. Give two examples each of positive and normative statements. Give one example each of positive and normative economics.
3. Do you agree with the statement that normative propositions have no place in scientific economics? Give reasons for your opinion.
4. George Bernard Shaw joked, “If all economists were laid end to end, they would not reach a conclusion.” Is this a fair assessment of disagreement among economists? Why or why not?
5. Economists disagree over normative economics but not over positive economics. Is this statement true or false? Explain.

economist may believe that individuals should have the freedom to make their own choices, including smoking, without government interference. These differences in values and perspectives can lead to varying opinions among economists, but it is important to note that they still share a common framework of economic analysis and principles.

Economists can disagree on both normative (value-based) and positive (fact-based) aspects of economics due to differing views on how the economy operates. This often stems from the choice of economic model used to explain economic activities, and pinpointing the more accurate model can be complex. Disagreements may persist even among economists using the

same model. While there may be consensus on the general direction of an economic outcome, such as agreeing that lower interest rates boost investment, debates can arise over the magnitude of this effect. One economist might believe the increase in investment will be slight, whereas another could argue for a significant surge. These differences are frequently exacerbated by data limitations, which makes it difficult to reach definitive conclusions.

Variables and Cause-Effect Relations

Learning Outcome 1.7

Recognize different types of variables and cause-effect relations.

What is a variable?

Economists primarily work on establishing relationships among various factors that can influence economic behavior. When creating economic models, they utilize variables, which are fundamental components of these models. In essence, an economic model represents a network of connections among economic variables. A variable, in this context, refers to anything that can fluctuate and adopt different values under varying conditions. Put simply, it is something that changes. Economic variables encompass a wide range of elements, such as prices, income, consumer spending, interest rates, exports, imports, government spending, taxes, overall production, the number of unemployed individuals, the unemployment rate, and savings levels. Conversely, a constant, in contrast to a variable, remains consistent and unchanging. For instance, if we assume that government spending remains constant during an analysis, it transforms from a variable to a constant. Whether an element is considered a variable or a constant hinges on the specific focus of the investigation.

variable *anything that changes*

constant *anything that remains unchanged*

What is the difference between an endogenous variable and an exogenous variable?

In constructing models to elucidate economic phenomena, economists differentiate between variables explained within the model (endogenous) and those influenced by external factors (exogenous). Endogenous variables are determined internally, while exogenous variables are determined outside the model, but they affect the endogenous variables. For example, in analyzing students' grades and attendance in an economics class, and assuming that grades and attendance are determined simultaneously, students' grades and their class attendance could be considered endogenous variables. This could imply a relationship where higher attendance might lead to better grades, and better grades could also lead to better attendance. However, factors like the home environment, the parental level of education, the mother's level of education, whether students complete their assignments, or if they pay attention in class, are exogenous variables that affect grades. These factors, external to the core model of attendance and grades, significantly influence the outcome but are determined outside the model's scope.

endogenous variable *a variable whose value is determined within a given model.*

exogenous variable a variable whose value is determined by factors outside a given model.

Whether a variable is considered endogenous or exogenous depends on the specific economic model and problem being studied. The classification of a variable as endogenous or exogenous is context-dependent and cannot be determined in a generalized manner.

Stock and flow variables

What distinguishes stocks from flows? A stock represents the quantity of something at a specific point in time. For instance, your total savings account balance on January 1, 2023, is a stock – it is the amount you have at that moment. However, as time goes by, this balance can change due to deposits, withdrawals, or interest accrual. On the other hand, a flow quantifies the rate at which a quantity changes over time. Imagine you deposit \$100 into your savings account every month. In this case, your monthly deposits of \$100 each constitute a flow. Flows are rate-based and come with a time dimension, typically measured per day, week, month, or year.

To make this clearer, let us consider some practical examples.

Stock: Your total number of shares in a company's stock on September 1, 2023.

Flow: If you purchase 10 additional shares every month, your monthly purchases represent a flow.

Stock: The current population of a city as of December 31, 2022.

Flow: The number of births and deaths in the city during 2023, measured annually, would be considered a flow.

Stock: The total inventory of smartphones held by a retailer on January 1, 2023.

Flow: The number of smartphones sold each day during the month of January constitutes a flow.

Stocks and flows are essential variables in economics, helping us understand how quantities change over time and providing valuable insights for economic analysis.

stock a quantity existing at a particular time

flow a change in a stock over time

Causation and correlation

Correlation and causation are distinct concepts and confusing them can lead to erroneous conclusions. Correlation indicates a statistical relationship where two variables move together in some manner, without implying that one causes changes in the other. The correlation might result from coincidence, or a third variable might influence both correlated variables. For example, performing well on an economics exam on a rainy day does not mean the rain caused the high score. Factors like study habits or the exam content are more plausible explanations for the success.

Causation signifies a direct cause-and-effect connection between variables. When changes in one variable lead to changes in another, evidence of causation emerges. However, making this determination often involves rigorous examination. The well-established adage, "Correlation does not imply causation," underscores the importance of not confusing these concepts. This adage emphasizes the complexity in proving causality beyond mere statistical correlation.

Table 1.2 Examples of Stocks and Flows

Stock	Flow
The current inventory of smartphones in a retail store on September 1, 2023	The daily sales of smartphones at the store
The number of books in your personal library today	The number of books you read each month.
The total assets held by a corporation on January 1, 2025	The company's quarterly revenue
The total population of Montreal on June 30, 2025	The number of births per day in Montreal during 2025
The amount of oil reserves in Canada as of December 31, 2024	The monthly production of oil in Canada in 2024

Fallacies in Economics: Common Faulty Reasoning in Economic Discourse

Fallacies in economic discourse are instances of faulty reasoning that arise from incorrect premises or erroneous conclusions. They are prevalent not only among the public but also among individuals in the business media. These fallacies can be broadly categorized into seven distinct types.

1. Fallacy of Composition: Assuming What's Good for a Part is Good for the Whole

The fallacy of composition occurs when people assume that what benefits one part or component will necessarily benefit the entire entity. This type of flawed reasoning often surfaces when individuals make generalizations based on the well-being of specific segments. For example, consider the case of Uber, a company that may decide to introduce driverless cars for passenger transport. While this move could potentially boost Uber's profits, it might have adverse implications for both Uber drivers and traditional taxi drivers, illustrating the fallacy of assuming that what benefits Uber is automatically advantageous for the broader transportation industry.

2. Personalized Narrative Fallacy: Attributing Economic Performance Solely to Leadership

The personalized narrative fallacy emerges when commentators attribute economic performance of a country, whether good or bad, to the leader of a country. This tendency to overly personalize economic outcomes can be observed when people credit or blame the head of state for economic conditions. For instance, when the Canadian economy prospers, individuals may heap praise upon the prime minister, asserting that "Trudeau's economic policies have reduced unemployment." Conversely, during economic downturns, there might be claims that "Trudeau has caused the recession." While government policies can certainly influence economic outcomes, they cannot be regarded as the sole determinant of economic outcomes. It is an oversimplification to attribute high unemployment rates solely to the government, just as it is overly simplistic to attribute low unemployment rates solely to government action.

3. The Broken Window Fallacy

The Broken Window Fallacy is a misconception that arises when people believe that economic growth can be achieved by fixing or replacing something that is broken or damaged. The fallacy suggests that when something negative occurs, such as a broken window, the money spent on repairing it contributes to an increase in Gross Domestic Product (GDP). Indeed, when the

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window is fixed, it does add to GDP, but this perspective overlooks a crucial point: the money used for the window repair could have been utilized differently for other purposes.

4. The Lump of Labor Fallacy

The Lump of Labor Fallacy is a misconception that occurs when individuals believe that the economy has a fixed or limited number of jobs available. Under this mistaken belief, if people assume that taking employment in a particular sector will lead to job loss and increased unemployment elsewhere in the economy. However, the reality is quite different. The number of jobs in an economy is not fixed but rather dynamic and adaptable to changing economic conditions. For instance, technological advancements may result in short-term job displacement, but in the long run, these innovations can also create new job opportunities.

5. The Fallacy of Money Illusion

The Fallacy of Money Illusion refers to the tendency of individuals to focus solely on the nominal amount of money they earn, without considering the impact of inflation. For example, if someone's money income increases by 2%, but the inflation rate is 5%, their real income has decreased by 3%. This emphasis on nominal income, without accounting for inflation, is what we refer to as money illusion.

6. The Sunk Cost Fallacy

The Sunk Cost Fallacy is a tendency to believe that once you have incurred a cost, particularly a substantial amount of initial spending, you must continue with the activity, regardless of the likely outcome. This fallacy suggests that if a company is losing money but has already invested significant sums in a project, it should persist with the project simply because of the initial expenses. However, the fallacy lies in the fact that the decision to continue an activity should not be influenced by the past cost (which is sunk), but rather by a rational assessment of whether continuing the activity is beneficial or not.

7. The post hoc fallacy

The Post Hoc Fallacy, also known as the 'post hoc, ergo propter hoc' fallacy (which means 'after this, therefore because of this' in Latin), occurs when two events happen in sequence, and it is incorrectly assumed that the first event caused the second event. This fallacy is sometimes referred to as the sequential fallacy. For example, if you started reading your economics

textbook, and shortly afterward, it began to rain, concluding that your reading caused the rain is an example of the post hoc fallacy. In reality, you might have chosen to read because you heard a weather forecast predicting rain and decided to stay in, so the rain was unrelated to your reading.

***post hoc fallacy** the erroneous conclusion that one event causes another simply because it precedes the other.*

Microeconomics versus Macroeconomics

Learning outcome 1.8

Distinguish between

microeconomics and macroeconomics.

Economics is broadly categorized into two main branches: microeconomics and macroeconomics. Microeconomics focuses on the behavior of individual economic units and focuses on resource allocation. It seeks to understand what determines the composition of total output and examines topics like consumer and firm behavior, relative price determination, and the distribution of economic output among different groups. Microeconomics is often referred to as price theory. For instance, studying the factors influencing changes in gasoline prices would fall under microeconomics.

***microeconomics** the branch of economics that studies the behaviour of individual economic units.*

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Reading Comprehension

1. What is the difference between microeconomics and macroeconomics?
2. To which branch of economics (microeconomics or macroeconomics) is a study of the recent global economic crisis more closely related?
3. Why should we study both microeconomics and macroeconomics?

Macroeconomics, on the other hand, examines the economy rather than focusing on individual units. It looks at the collective behavior of consumers and producers and explores topics like inflation, unemployment, and economic growth. For example, a study aiming to elucidate the reasons behind significant unemployment in Canada would fall within the realm of macroeconomics. A comprehensive understanding of how the economic system operates requires knowledge

in both microeconomics and macroeconomics, as they both delve into the decisions made by individuals, businesses, and governments and their impact on our economic well-being.

macroeconomics *the branch of economics that studies the behaviour of broad economic aggregates.*

BUSINESS SITUATION

1.2

A company is contemplating the introduction of a new product. To do so will require a loan. Among the factors to consider are the following:

- The price at which the product will be sold
- The level of economic activity and how it will affect the sale of the product
- The quantity of the product to produce
- The general level of interest rates that will affect the company's ability to repay the loan

Which of these considerations relate to microeconomics and which relate to macroeconomics? The answer to this Business Situation can be found in Appendix A.

Review

1. Review the learning objectives listed at the beginning of the chapter.
2. Have you accomplished all the objectives? One way to determine this is to answer the Reading Comprehension questions at the end of each section. They will help you assess the extent to which you have accomplished the learning objectives.
3. If you have not accomplished an objective, review the relevant material before proceeding.

Key Points to Remember

1. Learning Outcome 1.1 A knowledge of economics is important because it enables us to understand the economy, society, and world affairs; it helps us to be better informed citizens and to think logically. It gives great personal satisfaction.
2. Learning outcome 1.2 Economists are employed in almost every facet of economic life. They are employed in industry, government, and education. Economists can also be self-employed as consultants.
3. Learning outcome 1.3 Scarcity is a fact of life. It is the situation that exists when the means to produce all the things that society would like to have to satisfy all wants are insufficient. Everyone faces scarcity—the rich, the poor, everyone.
4. Learning outcome 1.3 Economics can be defined as the study of the production, distribution, and consumption of goods and services or as the study of scarcity and choice. It is the social science that studies how people make choices in the face of limited resources and unlimited wants. Economics, psychology, sociology, political science, and anthropology are all social science disciplines.

5. Learning outcome 1.4 All the various resources can be classified into four categories. Land refers to all natural resources, such as minerals in the earth, rivers, lakes, and so on. Labour refers to human effort, such as the work of farmers in cultivating land and the services provided by sales representatives. Capital refers to manufactured items, such as machinery, factories, and tools that businesses use to produce goods and services. Human capital refers to education, training, skills, and experience that enhance the quality of labour. Entrepreneurship refers to the organization of land, labour, and capital into the production process. Money is financial capital as opposed to real capital.

6. Learning outcome 1.4 Owners of land earn a form of income called rent; owners of labour earn wages and salaries; owners of capital earn interest and dividends; and providers of entrepreneurial services earn profits. Any form of income can be traced back to its source—a resource. The sum of the incomes derived from resources is total income.

7. Learning outcome 1.5 Economics is a science in the sense that it deals with facts and principles and follows a particular method of inquiry. It follows the scientific approach of observation, measurement, and verification by confronting theory with empirical evidence. Because of the complexities of economic phenomena, economists construct economic models, which are simplifications of reality.

8. Learning outcome 1.6 Positive economics deals with how an economy actually functions, while normative economics deals with how an economy should function. Economists disagree about normative economics because they have different values. They disagree about positive economics because they may use different models. They may also disagree over quantitative aspects.

9. Learning outcome 1.7 Variables can be classified as endogenous (determined inside a model) or exogenous (determined by factors outside a model). They can also be classified as stocks (existing at a particular time) or flows (change per unit of time).

10. Learning outcome 1.7 Correlation between two variables does not establish a cause-effect relationship between them. A post hoc fallacy is the error of concluding that one event caused another because it preceded the other.

11. learning outcome 1.8 Microeconomics examines the behaviour of individual economic units, while macroeconomics examines the behaviour of broad economic aggregates. Both

microeconomics and macroeconomics help us understand economic behaviour and the functioning of the economic system.

Problems and Exercises

Basic

1. **LO 1.1** A proper study of economics is quite time-consuming. Do you think studying economics is worth the time involved? Explain why or why not.
2. **LO 1.2** Give three reasons why a career as an economist might be of interest to a student.
3. **LO 1.3** What do economists mean when they describe something as being scarce?
4. **LO 1.3** If you won \$50 million in the lottery, would you personally still have an economic problem?
5. **LO 1.3** Scarcity is an economic constraint. Discuss.
6. **LO 1.4** Indicate the category of resources to which each of the following belongs:
 - a. A freezer in a supermarket
 - b. A hospital
 - c. Fish in a lake
 - d. Mineral deposits in northern Ontario
 - e. The services provided by a neurosurgeon
 - f. The driver of a taxicab
 - g. The risk taken by an individual who buys resources to establish a business

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7. LO 1.4 Beside each resource category in column 1 of Table 1.3, place the income category associated with the resource category.

Table 1.3 Resources and Associated Income

Resource Category	Income Category
Land	_____
Labour	_____
Capital	_____
Entrepreneurial ability	_____

8. LO 1.5 Economics is an interesting subject. Unfortunately, it cannot be studied scientifically. Discuss briefly.

9. LO 1.6 Give two reasons why economists might disagree.

10. LO 1.7 Using *S* for stock and *F* for flow, indicate whether each of the following is a stock or a flow:

- The amount of money a bus driver earns per week
- The number of students who were in class at 11:30 a.m. on Wednesday
- The amount of money in your purse/wallet at this moment
- Your average expenditure per week in the cafeteria
- The total annual sales of a furniture manufacturer
- The total value of merchandise in a department store on February 1, 2011, at 10:30 a.m.

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11. LO 1.8 It has been observed that the price of gasoline sometimes fluctuates greatly. A study has been launched to determine the possible causes. To which of the main branches of economics would such a study fall?

Questions in the Intermediate and Challenging Sections cover several different concepts and have not been organized by learning objectives.

Intermediate

- 1.** Would personal computers still be scarce if all computer manufacturers produced so many computers that to sell them, they had to lower the price to \$100?
- 2.** Economics cannot be a science. If it were, economists would not disagree to the extent that they do. Discuss.
- 3.** Alberta and Ontario both have relatively high average incomes; Newfoundland and Labrador and Prince Edward Island have relatively low average incomes. Do you think that scarcity of resources can help to explain these income differentials?
- 4.** Economists can increase the usefulness of a model by including every conceivable variable. After all, the greater the number of variables, the more useful the model. Discuss.

Challenging

- 1.** I have a model that explains students' grades in economics. The model states that regular attendance improves students' grades. One student attends every class, yet his grades have not improved. Does this observation invalidate my model? Explain.
- 2.** One of your friends is contemplating taking either an economics course or some other course. What arguments could you use to persuade him or her to take the economics course? For each argument, indicate whether it is positive or normative and give reasons.
- 3.** Write up a list of five social, economic, or political problems or issues facing Canada today. For each problem or issue, discuss its economic aspects (if any). What role can economics play in helping us to understand the problem or issue, or in finding solutions?

4. In constructing a simple model of the Canadian economy, an economist assumed that only two kinds of goods are produced and that all the goods are used within Canada. Can such a model have any use at all in terms of explaining certain economic events in Canada?

Study Guide

Self-Assessment

The answers to the Study Guide questions can be found in Appendix B.

What is your score?

Circle the letter that corresponds with the correct answer.

1. A knowledge of economics is important because
 - a. It guarantees perpetual employment
 - b. It ensures that we will always make decisions that are in our own self-interest
 - c. It helps us to understand many of the issues that affect our lives directly and indirectly
 - d. All of the above
2. Today, economists work:
 - a. Only as civil servants in government offices
 - b. Only in profit-seeking organizations
 - c. Only in certain large corporations
 - d. In practically every aspect of business and government
3. Scarcity exists

- a. When things are available only in small quantities
 - b. When resources are insufficient to produce all the desired goods and services
 - c. Only among poor people who cannot afford to buy the things they want
 - d. In underdeveloped countries but not in advanced countries
4. Choice is a direct result of
- a. Ambition
 - b. Scarcity
 - c. Extravagance
 - d. None of the above
5. Choice is a matter of free will and is quite unrelated to economics.
- a. True
 - b. False
6. Which of the following is the primary concern of economics?
- a. How people vote in an election
 - b. How people make choices when faced with scarcity
 - c. The mental processes involved in deciding regarding the purchase of an expensive item
 - d. None of the above
7. Which of the following aspects of human behaviour *most* concerns the economist?
- a. The methods used to select leaders in a society
 - b. The public's attitude toward certain social issues

- c. The behaviour of individuals and groups engaged in using scarce resources
- d. The behaviour of people trying to understand the origin of civilization

8. Economics is

- a. An exact science
- b. A social science
- c. A physical science
- d. Not a science

9. Economists work on the premise that

- a. Resources are unlimited but wants are limited
- b. Resources are limited but wants are unlimited
- c. Both resources and wants are unlimited
- d. Both resources and wants are limited

10. Factors of production are

- a. All the factors that must be considered when planning to start a business
- b. The monetary costs involved in setting up a business to produce goods
- c. Gifts of nature, not anything that we produce
- d. Things that can be used to produce goods and services

11. Things like cigarettes and alcohol are

- a. Not goods because they are harmful
- b. Goods because they are scarce

- c. Goods because people want them
- d. Goods because the government has not placed a ban on their use

12. Illegal substances and chemicals, and goods smuggled into a country, are classified as

- a. Bads because they are illegal
- b. Bads because taxes are not paid on them
- c. Goods, provided that they are wanted
- d. Goods because someone produced them

13. Economists classify resources into the following categories:

- a. Available, scarce, expensive, and natural
- b. Land, labour, capital, and entrepreneurship
- c. Artificial, financial, human, and manufactured
- d. Natural, imported, limitless, and personal

14. Capital generates a type of income known as

- a. Money
- b. Interest
- c. Profit
- d. None of the above

15. The scientific approach involves

- a. Total reliance on values and moral sentiments
- b. Observation, measurement, and testing of hypotheses

- c. The formulation of theories without confronting theory with evidence
- d. All of the above

16. An economic model is

- a. An exact replica of a real economic situation, faithfully reproducing every single detail
- b. Always expressed graphically because graphs are easy to read and understand
- c. A simplification of a real economy or some aspect of it, with irrelevant details omitted
- d. None of the above

17. Economists construct models in order to

- a. Impress non-economists
- b. Prevent entry into the economics profession
- c. Make it easier to understand how the economy works
- d. Introduce as many variables as possible into their analyses

18. Assumptions

- a. Have no place in scientific economics
- b. Simply complicate the economic reasoning process
- c. Convert positive statements into normative statements
- d. Indicate the conditions under which a given model is intended to work

19. The Latin phrase *ceteris paribus* means

- a. No changes should be made because all is well
- b. Sometime in the future

- c. The outcome is certain
- d. Other things being equal

20. An economic hypothesis is

- a. An assumption about how the economic system works
- b. An assumption about how the economic system ought to work
- c. An expression of suspected relations among economic variables
- d. A statement that is generally accepted but cannot be proved

21. The main difference between positive statements and normative statements is that

- a. Positive statements can be verified by testing, while normative statements cannot be verified
- b. Positive statements are always true, while normative statements may be true or false
- c. Positive statements are a part of economic study, while normative statements are not
- d. Positive statements are based on emotion, while normative statements are based on facts

22. Disagreement among economists is due to

- a. The fact that economics is not a science
- b. The fact that economic models are often expressed verbally instead of mathematically
- c. The fact that some economists just do not understand the complexities of modern mathematics used in economic models
- d. The fact that economists have different values, or they may use different economic models to explain the same economic phenomenon

23. The values of exogenous variables

- a. Are determined inside the given model
- b. Have no effect on variables within the given model
- c. Are predetermined by factors outside the given model
- d. Are of no concern to the economist

24. Endogenous variables are those variables whose values

- a. Are determined within the given model
- b. Have no effect on variables within the given model
- c. Are predetermined by factors outside the given model
- d. None of the above

25. The main difference between a flow and a stock is that

- a. A flow has a time dimension while a stock does not
- b. A stock has a time dimension while a flow does not
- c. A flow is a variable while a stock is a constant
- d. None of the above

26. Two variables, A and B , are related in such a way that when A rises, B also rises. From this we can correctly conclude that

- a. The increase in B is caused by the increase in A
- b. A and B are influenced by a common factor
- c. There is a correlation between A and B
- d. None of the above

27. Microeconomics

- a. Deals only with small changes in economic variables, while macroeconomics deals only with large changes in economic variables
- b. Is scientific in its approach, while macroeconomics is not
- c. Deals with the behaviour of individual economic units, while macroeconomics deals with the behaviour of broad economic aggregates
- d. Deals only with the positive aspects of economics, while macroeconomics deals only with the normative aspects of economics

28. Considering both microeconomics and macroeconomics, the tools of microeconomics are more useful when predicting

- a. The rate of increase in the average level of all prices
- b. The effects of investment on total income and total employment
- c. The effects of changes in the money supply on national output
- d. The price that will maximize a firm's profits

Problems and Exercises (Use Quad Paper for Graphs)

1. Look through one or more recent newspapers and highlight four headlines that deal with economics. Then, based on your findings, complete Table 1.4, indicating (1) the name of the newspaper, (2) the date of publication, (3) the headlines selected, and (4) the economic issue being addressed.

Table 1.4 Newspaper Information

Name of Newspaper	Date Published	Headline	Economic Issue

2. Indicate what might be the scarce element in each of the following situations. (For example, time is the scarce element preventing you from attending an economics class at 8:30 a.m. and sleeping in until 9:00 a.m. that same day).

- a. A farmer is unable to produce more corn and more wheat at the same time.
- b. A retailer is unable to carry larger inventories (stocks) of both computers and DVD players.
- c. Tiger Woods cannot play golf at 2:30 p.m. today and appear live as a guest on a popular television program.
- d. You cannot buy all your required textbooks for this term at the same time.
- e. Your parents must choose between taking a cruise and buying a new refrigerator.

3. Indicate whether each of the following should be classified as land, labour, capital, or entrepreneurship.

- a. Oil deposits in Alberta
- b. Highway 401 between Montreal and Toronto
- c. The services provided by administrative assistants in an insurance company
- d. Wildlife in the Prairie Provinces
- e. Forests in British Columbia
- f. Banff National Park in Alberta
- g. The Great Lakes of Canada and the United States
- h. John Henry's efforts in acquiring labour and capital to establish a manufacturing plant
- i. The services provided in establishing and running an electronic boutique
- j. Chemical fertilizer used by Ontario farmers in growing their crops

4. Canada is well endowed with a wide variety of natural resources, a highly skilled and educated adult population, and vast amounts of capital goods. In what sense are these resources scarce in Canada?

5. Indicate whether each of the following types of income would be classified technically as rent, wages and salaries, interest and dividends, or profit.

- a. The compensation (payment) that administrative assistants receive for their services
- b. The money Josh pays each month for living accommodation in an apartment building
- c. The payment Susan receives from her part-time job at the supermarket
- d. The annual amount that a Canadian bank pays its shareholders
- e. The amount of money that Mr. Johnson receives each year for the use of his parking lot
- f. The money that Mr. Johnson pays his parking lot attendant
- g. The net income that John Henry receives for his effort in acquiring labour and capital to establish a manufacturing plant
- h. The net earnings of \$200 000 received by a group of innovators for developing and marketing a product

6. In Table 1.5, rearrange the items in the second column, and place the correct arrangement in the third column so that they correctly match the items in the first column.

Table 1.5 Factors and Earnings

Column 1	Column 2	Column 3
Labour	Rent	_____
Land	Wages	_____
Entrepreneurship	Interest and dividends	_____
Capital	Profits	_____

7. Categorize each of the following as either positive or normative statements:

- a. An increase in the price of oil will result in higher prices for other products.
- b. If the price of oil rises, people will buy less oil.
- c. The government should impose a ceiling on the price of gasoline.
- d. The sale of cigarettes should be illegal.
- e. Lower interest rates on mortgages will increase the purchases of new homes.
- f. Interest rates should be kept as low as possible so that the economy can produce more jobs.

8. Indicate whether each of the following falls under the heading of positive economics or normative economics:

- a. A study of the relationship between investment spending and the rate of interest
- b. The observation that when average income rises, consumers increase their purchases of most goods and services
- c. The conclusion that the amounts of money allocated to education and health in Canada are much too small
- d. The assertion that hockey and baseball players should never go on strike, because they earn enough money
- e. A program designed to reduce poverty based on the opinion that poverty levels are too high
- f. A description of how the money supply affects the performance of the economy
- g. The notion that taxing the wealthy to give welfare payments to the poor is unfair
- h. The assertion that the accumulation of debts is bad both for individuals and for governments

9. Classify each of the following as a stock or a flow:

- a. The annual salary of your economics professor
- b. The number of washing machines owned by the Quick Clean Laundromat on December 30, 2011
- c. The annual interest payable on a bank loan
- d. The number of new homes available for sale in November 2012
- e. The quantity of merchandise sold each month by a department store
- f. The unpaid balance on a bank loan as of February 23, 2010
- g. Consumers' expenditure on goods and services over a six-month period
- h. The number of workers who showed up for work at 7:30 this morning

10. Indicate whether each of the following falls under microeconomics or macroeconomics:

- a. A study of the relationship between employment and total production
- b. A model explaining why, on average, actors earn more than doctors
- c. An explanation of the factors that affect total spending in the Canadian economy
- d. A theory explaining how the level of investment spending affects aggregate employment
- e. A model explaining how many workers a firm should hire to produce a desired volume of output
- f. An explanation of the effect of a tax on cigarettes on the price of cigarettes
- g. A model showing that when the price of gold rises, the price of silver also rises, other things being equal
- h. A model that explains why the prices of home computers have fallen over the past few years

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