

> Unit 1

Introduction to Economics



CONCEPTUAL UNDERSTANDINGS

- 1 Economics is a social science in which there is *interdependence* between people who interact with each other to improve their *economic well-being*, and who are influenced and empowered by their values and natural surroundings.
- 2 The economic world is dynamic and subject to continuous *change*.
- 3 Economic theories are founded on the principles of logic complemented by empirical data, used to build models that try to explain our complex economic world. Individuals and groups of individuals display motivations and behaviours that are complex and varied. Their understanding is facilitated by the contribution of several disciplines that interact with economics, such as psychology, philosophy, politics and history.
- 4 Economic decision-making is central to determining the relative *economic well-being* of individuals and societies.
- 5 The key problem of economics derives from *scarcity*, which necessitates *choice*. This in turn leads all economies to confront trade-offs, opportunity costs and the challenge of *sustainability*.
- 6 Economic thinking faces a number of debates. Among the most important of these is the debate between economic growth and *equity*, and the debate between free markets (and their *efficiency*) and government *intervention*.
- 7 Unlimited economic growth based on the use of finite resources cannot continue indefinitely. Established theories and approaches to the issue of economic growth are being challenged by new models and social movements with a view to redesigning the economy to support long-term prosperity.

Many urgent issues in our world today, such as poverty, pollution, the environment, economic growth, standards of living, unemployment, inflation, technology, international trade and many more, involve economics.

The objective of economists is to explain, analyse and understand issues such as these in the hope of finding ways to deal with them so as to bring about improvements in the well-being of people everywhere.

Marrakesh, Morocco. Woolen handmade hats for sale in the market square of the old city



> Chapter 1

The foundations of economics

BEFORE YOU START

- As you begin this course, you may already have an idea of 'economics'. What do you think the subject is about?
- Sciences like physics, biology and chemistry are examples of 'natural sciences'. Anthropology, psychology and economics are examples of 'social sciences'. In what ways do you think natural and social sciences are similar and in what ways are they different?
- What do you think the purpose of government should be in society?

Chapter 1 of this book is an introduction to the social science of economics. We will discover the meaning of economics, and will discuss key concepts forming the basis of the economic perspective of the world. We will see how economists use models and theories to analyse economic problems, and will also learn about the organising principles of market, planned and mixed economies. The chapter will end with an account of famous economists who made important contributions to economic thought.

Photo: Bangkok, Thailand. Street foods collection November 2019

1.1 Understanding the nature of economics

LEARNING OBJECTIVES

After studying this section you will be able to:

- define all the terms appearing in **orange bold** in the text (AO1)
- explain the social nature of economics (AO2)
- distinguish between microeconomics and macroeconomics (AO2)
- explain the nine central concepts that run through your course in economics (AO2)
- explain the meaning of scarcity (AO2)
 - as unlimited human needs and wants met by limited resources
 - in relation to sustainability
- identify and explain the four factors of production (AO2)
- explain the meaning of opportunity cost and its relationship to choice and free goods (AO2)

Economics as a social science

The social nature of economics

The **social sciences** are academic disciplines that study human society and social relationships. They are concerned with discovering general principles describing how societies function and are organised. The social sciences include anthropology, economics, political science, psychology, sociology and others.

Economics is a *social* science because it deals with human society and behaviour, and particularly those aspects concerned with how people organise their activities and how they behave to satisfy their needs and wants. It is a social *science* because its approach to studying human society is based on the scientific method, which we will consider below.

Microeconomics and macroeconomics

The study of economics breaks down the economic world into two levels. One of these is like looking at the economic world through a microscope, while the other is like looking at it through a telescope.

- The micro level, called **microeconomics**, examines the behaviour of individual decision-making units in the economy. The two main groups of decision-makers we study are consumers (or households) and firms (or businesses). Microeconomics is concerned with how these decision-makers behave, how they make choices, what are the consequences of their decisions and how their interactions in markets determine prices. (Micro comes from the Greek word *μικρό* or *micró*, meaning *small*.)
- The macro level, called **macroeconomics**, examines the economy as a whole to obtain a broad or overall picture of the economy. Macroeconomics uses *aggregates*, which are wholes or collections of many individual units, such as the sum of consumer behaviours and the sum of firm behaviours, and total income and output of the entire economy, as well as total employment and the overall price level. (Macro comes from the Greek word *μάκρος* or *makros*, meaning *large*.)

The ideas and principles that are developed in microeconomics and macroeconomics are the building blocks that economists use to study many specific areas of economics. Some of these areas are studied at the micro level, such as market failure (Chapters 5–7) and others at the macro level, such as unemployment and inflation (Chapter 10). In addition, the ideas and principles developed in microeconomics and macroeconomics are applied to the study of many other areas, such as International economics and Development economics, which you will discover in Unit 4 of this book.

Key concepts of this course

The concepts listed below will be discussed in a number of different contexts in your study of economics. While economists agree on the definitions of each of these, there are debates over how some of these concepts should be interpreted or applied, especially in connection with formulating appropriate economic policies to address important economic objectives. You will encounter many of these as you read this book.

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Scarcity

One of the most important concepts in economics, **scarcity**, refers to the idea that resources are insufficient to satisfy unlimited human needs and wants. In fact, it is said that if there were no scarcity, there would be no social science of economics. This is because economics is the study of how our scarce or limited resources can best be used in order to satisfy the unlimited needs and wants of human beings.

Choice

In a very important sense, economics is the study of **choice**. Since resources are scarce, it is not possible for all human needs and wants to be satisfied. This means that choices must be made about what will be produced and what will be foregone (not produced and therefore sacrificed). Economics studies how different decision-makers make choices between competing alternative options, and analyses the present and future consequences of their choices.

Efficiency

Efficiency refers to making the best possible use of scarce resources to avoid resource waste. In view of the scarcity of resources, it is important to use these in ways that ensure they are not wasted. In part, efficiency means using the fewest possible resources to produce goods and services. But, in addition, it requires that scarce resources are used to produce the goods and services that mostly satisfy society's needs and wants. This is known as **allocative efficiency**, used as a benchmark or standard to determine the appropriateness of economic actions from the point of view of minimising resource waste.

Equity

Equity is the idea of being fair or just. Equity is not the same as equality, which is the sameness of treatment or outcomes for people or groups of people in a society. Fairness is a normative concept (to be discussed later) because ideas of what is fair vary according to beliefs, value judgements and ideologies. In economics, the ideas of equity and inequity are usually identified with equality and inequality, and are used mostly in connection with equality in the distribution of income, wealth and human opportunity. In all economic systems, these kinds of inequities or inequalities are present both within and between societies, and are significant issues, as many people

cannot meet their basic needs and lack opportunities. There is much debate among economists on how much and what types of government intervention in markets are appropriate in order to address these issues effectively.

Economic well-being

Economic well-being is a concept that has several different dimensions. It refers to levels of prosperity, economic satisfaction and standards of living among the members of a society. Economic well-being includes:

- security with respect to income and wealth, having a job and housing
- the ability to pursue one's goals, work productively and develop one's potential
- the ability to have a satisfactory quality of life, which includes numerous factors such as health, education, social connections, environmental quality, personal security
- the ability to maintain all of the above over time.¹

There are very significant variations in levels of economic well-being both within nations and between nations.

Sustainability

Sustainability refers to the long-term maintenance or viability of any particular activity or policy. In economics, it is most commonly used to refer to the ability of the present generation to satisfy its needs by the use of resources, and especially non-renewable resources, without limiting future generations' ability to satisfy their own needs. The problem arises because the present generation at any moment in time engages in many economic activities of production and consumption that too often destroy or degrade (lower the quality of) the environment and non-renewable resources. The result of such activities is that future generations will be penalised. Therefore the issue is how to develop methods of production and patterns of consumption that will not result in such environmental and resource destruction and degradation.

Change

'Panta rhei' is a famous saying by the Greek philosopher Heraclitus, that means 'everything flows'. Heraclitus taught that **change** is an essential part of life. This idea is very important in economics, where much of what we study is in a continuous state of change. In economics, we can distinguish between the idea of change: (i) in economic theory and (ii) in real-world

¹ OECD Framework for Statistics on the Distribution of Household Income, Consumption and Wealth, Chapter 2 Economic well-being, OECD 2013.

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events. In economic theory, economists very often study change between one situation and another situation that has been caused by a change in one or more variables. It is important to bear this in mind in your study of economics as you will often be asked to analyse and evaluate this kind of change in a large variety of contexts. Regarding the study of real-world phenomena, the world is characterised by continuous change in the institutional, technological, social, political and cultural environments in which economic events occur.

Interdependence

Interdependence refers to the idea that economic decision-makers interact with and depend on each other. Such interdependence occurs on all levels, from individuals, to communities, to nations and to groups of nations. Interdependence arises from the fact that no one is self-sufficient, requiring ever-increasing degrees of interactions and interdependence. Consumers, workers, firms, governments and all other individuals or groups of individuals depend on one another for the achievement of their economic goals. With increasing globalisation (which refers to the interactions and integration of economies world-wide), interdependence increases. In a highly interdependent world, events in one part give rise to many and possibly unintended consequences in other parts, with outcomes that cannot always be predicted or discovered by looking at the constituent parts in isolation. Economists must therefore take into consideration both intended and unintended consequences of economic decisions and events when there is a high degree of interdependence.

Intervention

In economics, **intervention** typically refers to government intervention, meaning that the government becomes involved with the workings of markets. While markets offer numerous advantages as a way to achieve important economic objectives, it is generally recognised that markets on their own often cannot achieve important societal goals, such as the goals of *equity*, *sustainability*, *economic well-being* or *efficiency*. When this occurs, whether at the micro or macro levels, there may be good reason for the government to intervene in order to correct for the market's deficiencies. However, economists and policy-makers often disagree widely on the need for, degree and method of intervention that is necessary. A key debate that you will repeatedly encounter in your studies of economics involves the advantages and disadvantages of free markets versus government intervention.

The fundamental problem of economics: scarcity and choice

The problem of scarcity

The term 'economics' is derived from the ancient Greek expression οἶκον νέμειν (*oikon nemein*), which originally meant 'one who manages and administers all matters relating to a household'. Over time, this expression evolved to mean 'one who is prudent in the use of resources'. By extension, economics has come to refer to the careful management of society's scarce resources to avoid waste. Let's examine this idea more carefully.

Human beings have very many needs and wants. Some of these are satisfied by physical objects and others by non-physical activities. All the physical objects people need and want are called *goods* (food, clothing, houses, books, computers, cars, televisions, refrigerators and so on); the non-physical activities are called *services* (education, health care, entertainment, travel, banking, insurance and many more).

The study of economics arises because people's needs and wants are unlimited, or infinite. Whereas some individuals may be satisfied with the goods and services they have or can buy, most would prefer to have more: more and better computers, cars, educational services, transport services, housing, recreation, travel and so on; the list is endless.

Yet it is not possible for societies and the people within them to produce or buy all the things they want. Why is this so? It is because there are not enough **resources**. Resources are the inputs used to produce goods and services wanted by people, and for this reason are also known as **factors of production**. They include things like human labour, machines and factories, and 'gifts of nature' like agricultural land and metals inside the earth. Factors of production do not exist in unlimited abundance: they are *scarce*, or limited and insufficient in relation to unlimited uses that people have for them.

Scarcity is a very important concept in economics. It arises whenever there is not enough of something in relation to the need for it. For example, we could say that food is scarce in poor countries, or we could say that clean air is scarce in a polluted city. In economics, scarcity is especially important in describing a situation of *insufficient factors of production*, because this in turn



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leads to insufficient goods and services. Defining scarcity, we can therefore say that:

Scarcity is the situation in which available resources, or factors of production, are finite, whereas wants are infinite. There are not enough resources to produce everything that human beings need and want.

Why scarcity forces choices to be made

The conflict between unlimited wants and scarce resources has an important consequence. Since people cannot have everything they want, they must make *choices*. The classic example of a choice forced on society by resource scarcity is that of ‘guns or butter’, or more realistically the choice between producing defence goods (guns, weapons, tanks) or food: more defence goods mean less food, while more food means fewer defence goods. Societies must choose how much of each they want to have. Note that if there were no resource scarcity, a choice would not be necessary, since society could produce as much of each as was desired. But resource scarcity forces the society to make a choice between available alternatives. Economics is therefore a study of choices.

The conflict between unlimited needs and wants, and scarce resources has a second important consequence. Since resources are scarce, it is important to avoid waste in how they are used. If resources are not used effectively and are wasted, they will end up producing less; or they may end up producing goods and services that people do not really want or need. Economics must try to find how best to use scarce resources so that waste can be avoided. Defining economics, we can therefore say that:

Economics is the study of choices leading to the best possible use of scarce resources in order to best satisfy unlimited human needs and wants.

As you can see from this definition of economics, economists study the world from a social perspective, with the objective of determining what is in society’s best interests.

TEST YOUR UNDERSTANDING 1.1

- 1 Think of some of your most important needs and wants, and then explain whether these are satisfied by goods or by services.
- 2 Outline why economics is a study of choices. Describe its relationship to scarcity. Outline how scarcity is related to the need to avoid waste in the use of resources.
- 3 Explain why diamonds are far more expensive than water, even though diamonds are a luxury while water is a necessity without which we cannot live.

Scarcity and sustainability

The meaning of sustainability

Economic activities in many (if not most) countries are often achieved at the expense of the natural environment and natural resources. *Economic growth*, which involves increases in the amount of goods and services produced, very often results in increased air and water pollution, and the destruction or depletion of forests, wildlife and the ozone layer, among many other natural resources. Increasing awareness of this issue has given rise to the concept of *sustainable development*, defined as ‘development which meets the needs of the present without compromising the ability of future generations to meet their own needs’.²

Sustainable development occurs when societies grow and develop without leaving behind fewer or lower-quality resources for future generations. If we, in the present, use up resources at a rate that leaves fewer or lower-quality resources behind, we are satisfying our needs and wants now at the expense of people in the future, who with fewer or lower-quality resources will be less able to satisfy their own needs and wants. If we change the global climate and use up clean air, seas and rivers, forests and the ozone layer, we put future generations at a disadvantage and even in danger.

² Brundtland Commission (World Commission on Environment and Development) (1987) *Our Common Future*, Oxford University Press

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Using the definition of sustainable development, we can see that *sustainability* or *sustainable resource use* involves using resources in ways and at rates that do not reduce their quantity or quality over time. As a rule, this term is used with reference to renewable resources, or those kinds of natural resources that are able to reproduce themselves (such as forests, fish and sea life, air quality, the fertility of the soil). Sustainable resource use does not mean that these kinds of natural resources should not be used at all, but rather that they should be used at a rate that gives them enough time to reproduce themselves, so that they can be maintained over time in terms of quantity and quality and not be destroyed or depleted.

It is clear that the issue of sustainable use of resources arises from the fact that these resources are *scarce*. If they were not scarce, it would not matter at all how fast we used them or destroyed them as there would be plenty more.

Sustainability refers to maintaining the ability of the environment and the economy to continue to produce and satisfy needs and wants into the future; sustainability depends crucially on **sustainable resource use**, referring to the preservation of the environment over time. The problem of sustainability arises because resources are scarce.

Threats to sustainability do not only result from high-income production and consumption patterns that rely strongly on polluting fossil fuels as well as other activities that destroy the environment. In addition, in very poor societies, threats to sustainability often arise from poverty itself, which drives very poor people to destroy their natural environment as they make efforts to survive. Examples include cutting down forests, overgrazing, soil erosion and many more. In all these cases, there may be an unsustainable use of resources, as fewer and lower-quality resources are left behind for future generations.

While virtually everyone today agrees on the importance of sustainability, there is vast disagreement about what this means from a practical point of view, and how this can be achieved in practice. We will discuss the issue of sustainable resource use and policies to achieve this in Chapter 5.

TEST YOUR UNDERSTANDING 1.2

- 1 Explain the relationship between scarcity and sustainability.
- 2 Consider the following: 'Dangerous levels of industrial air pollution in India reduce life expectancy by seven years for 40% of its population. This refers to the people living in the states of the Indo-Gangetic plain, where pollution has increased by 72% in a period of 18 years. The population of Delhi faces an average loss of 10.2 years. The public is outraged. The government has begun to respond to this public health emergency'.³
 - a Research an example of a challenge India faces and outline how it is a threat to sustainable development.
 - b Describe how India's rapid economic growth impacts its future generations.

Resources as factors of production

We have seen that resources, or all inputs used to produce goods and services, are also known as factors of production.

The four factors of production

Economists group the factors of production under four broad categories:

- **Land** consists of all natural resources, including all agricultural and non-agricultural land, as well as everything that is under or above the land, such as minerals, oil reserves, underground water, forests, rivers and lakes. Natural resources are also called 'gifts of nature'.
- **Labour** includes the physical and mental effort that people contribute to the production of goods and services. The efforts of a teacher, a construction worker, an economist, a doctor, a taxi driver or a plumber all contribute to producing goods and services, and are all examples of labour.

³ <https://www.indiatoday.in/india/story/pollution-from-punjab-to-bengal-48-crore-people-may-die-7-years-early-but-all-is-not-lost-study-1614689-2019-11-01>
<https://ig.ft.com/india-pollution>

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- **Capital**, also known as *physical capital*, is a man-made factor of production (it is itself produced) used to produce goods and services. Examples of physical capital include machinery, tools, factories, buildings, road systems, airports, harbours, electricity generators and telephone supply lines. Physical capital is also referred to as a capital good or investment good.
- **Entrepreneurship** (management) is a special human skill possessed by some people, involving the ability to innovate by developing new ways of doing things, to take business risks and to seek new opportunities for opening and running a business. Entrepreneurship organises the other three factors of production and takes on the risks of success or failure of a business.

Other meanings of the term ‘capital’

The term ‘capital’, in the most general sense, refers to resources that can produce a future stream of benefits. Thinking of capital along these lines, we can understand why this term has a variety of different uses, which although are seemingly unrelated, in fact all stem from this basic meaning.

- **Physical capital**, defined above, is one of the four factors of production consisting of man-made inputs that provide a stream of future benefits in the form of the ability to produce greater quantities of output: physical capital is used to produce more goods and services in the future.
- **Human capital** refers to the skills, abilities and knowledge acquired by people, as well as good levels of health, all of which make them more productive. Human capital provides a stream of future benefits because it increases the amount of output that can be produced in the future by people who embody skills, education and good health.
- **Natural capital**, also known as *environmental capital*, refers to an expanded meaning of the factor of production ‘land’ (defined earlier). It includes everything that is included in land, plus additional natural resources that occur naturally in the environment such as the air, biodiversity, soil quality, the ozone layer and the global climate. Natural capital provides a stream of future benefits because it is necessary to humankind’s ability to live, survive and produce in the future.

- **Financial capital** refers to investments in financial instruments, like stocks and bonds, or the funds (money) that are used to buy financial instruments. Financial capital also provides a stream of future benefits, which take the form of an income for the holders, or owners, of the financial instruments.

TEST YOUR UNDERSTANDING 1.3

1

a

Outline why resources are also called ‘factors of production’.

b

Identify the four factors of production.

2

Outline how physical capital differs from the other three factors of production.

3

Describe why entrepreneurship is considered to be a factor of production separate from labour.

4

a

Identify the various meanings of the term ‘capital’.

b

Outline what they have in common.

Scarcity, choice and opportunity cost: the economic perspective

Opportunity cost

Opportunity cost is defined as the value of the next best alternative that must be given up or sacrificed in order to obtain something else. Every time we choose to do something, we give up something else we could have done instead. For example, your decision to read this book now means you have given up a different activity, such as sleeping, watching TV or visiting a friend. If your best or favourite alternative to reading this book is watching TV, the TV time you have sacrificed is the opportunity cost of reading this book. Opportunity cost in this case rises from the fact that time is limited or scarce; if it were endless, you would never have to sacrifice any activity in order to do something else.

When a consumer chooses to use her \$100 to buy a pair of shoes, she is also choosing not to use this money to buy books, food or anything else; if books are her

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favourite alternative to shoes, the books she sacrificed (did not buy) are the opportunity cost of the shoes. Note that if the consumer had endless amounts of money, she could buy everything she wanted and the shoes would have no opportunity cost.

The concept of **opportunity cost**, or the value of the next best alternative that must be sacrificed to obtain something else, is central to the economic perspective of the world, and results from the scarcity that forces choices to be made.

TEST YOUR UNDERSTANDING 1.4

- 1 Define opportunity cost.
- 2 Explain how scarcity and choice relate to opportunity cost.
- 3 Think of three choices you have made during the past week and describe the opportunity cost of each one.

Free and economic goods

Based on the concept of opportunity cost, we can make a distinction between free goods and economic goods (note that the term ‘good’ is used here in a general sense to include goods, services and resources):

A **free good** is any good that is not scarce, and therefore has a zero opportunity cost. Since it is not limited by scarcity, it includes anything that can be obtained without sacrificing something else. An *economic good* is any good that is scarce, either because it is a naturally-occurring scarce resource (such as oil, gold, coal, forests, lakes), or because it is produced by scarce resources. All economic goods have an opportunity cost greater than zero.

Free goods are rare. Sometimes a good can be a free good in certain situations and an economic good in others. For example, arable land in America before European colonisers arrived was a free good because it was so abundant; as the colonisers grew in numbers it

became increasingly scarce and therefore an economic good. Salt used to be a free good that has become an economic good. Oxygen in the open unpolluted countryside can be a free good; in a room with no windows that is crowded with people, it becomes an economic good. Unobstructed sunshine is also a free good in many situations.

It is important to distinguish free goods from goods or resources that are available free of charge to their users. There are two categories of goods that are available free of charge, but which do have opportunity costs and are therefore economic goods:

- goods provided by the government, such as the road system, public parks and playgrounds, free education, free health care services; all these are economic goods produced by scarce resources, and are paid for out of tax revenues (see Chapter 6);
- certain natural resources, such as clean air, forests, rivers, lakes and wildlife, that are not owned by anyone (they are called *common pool resources*; these are also economic goods because they are scarce, and are becoming increasingly scarce due to overuse and depletion (see Chapter 5).

TEST YOUR UNDERSTANDING 1.5

- 1 Explain the difference between a free good and an economic good.
- 2 Identify which of the following goods are ‘free goods’ and explain why:
 - a public parks
 - b sand in the Sahara desert
 - c garbage collection
 - d free health care services
 - e wildlife.
- 3 Why do you think free goods are rare?

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1.2 The three basic economic questions: resource allocation and output/income distribution

LEARNING OBJECTIVES

After studying this section you will be able to:

- define all the terms appearing in **orange bold** in the text (AO1)
- identify and explain the three basic economic questions (AO2)
- distinguish between the role of markets and government intervention in designing and proposing solutions to the basic economic questions (AO2)
- distinguish between economic systems: the free market economy, planned economy and mixed economy (AO2)

The basic economic questions: what/how much, how and for whom to produce

Scarcity forces every economy in the world, regardless of its form of organisation, to answer the following three basic questions:

- **What/how much to produce.** All economies must choose what particular goods and services and what quantities of these they wish to produce.
- **How to produce.** All economies must make choices on how to use their resources in order to produce goods and services. Goods and services can be produced by use of different combinations of factors of production (for example, relatively more labour with fewer machines, or relatively more machines with less labour), by using different skill levels of labour, by using different technologies or by using different raw materials, for example, plastic or wood.

- **For whom to produce.** All economies must make choices about how the goods and services produced are to be distributed among the population. Should everyone get an equal amount of these? Should some people get more than others? Should some goods and services (such as education and health care services) be distributed more equally?

Resource allocation and output/income distribution

The first two of these questions, *what/how much to produce* and *how to produce*, are about *resource allocation*, while the third, *for whom to produce*, is about the *distribution of output and income*.

Resource allocation refers to assigning available resources, or factors of production, to specific uses chosen among many possible alternatives, and involves answering the *what/how much to produce* and *how to produce* questions. For example, if a *what/how much to produce* choice involves choosing a certain amount of food and a certain amount of weapons, this means a decision is made to *allocate* some resources to the production of food and some to the production of weapons. At the same time, a choice must be made about *how to produce*: which particular factors of production and in what quantities (for example, how much labour, how many machines, what types of machines, etc.) should be assigned to produce food, and which and how many to produce weapons.

If a decision is made to change the amounts of goods produced, such as more food and fewer weapons, this involves a *reallocation* of resources. Sometimes, societies produce the ‘wrong’ amounts of goods and services relative to what is socially desirable. For example, if too many weapons are being produced, we say there is an *overallocation* of resources to production of weapons. If too few socially desirable goods or services are being produced, such as education or health care, we say there is an *underallocation* of resources to the production of these.

The third basic economic question, *for whom to produce*, involves the *distribution of output* and is concerned with how much output different individuals or different groups in the population receive. This question is also concerned with the **distribution of income** among individuals and groups in a population, since the amount of output people can get depends on how much of it they can buy, which in turn depends on the amount of income they have. When the distribution of income