The basic economic problem: choice and the allocation of resources

Unit 1 introduces the basic economic problem: insufficient resources to meet all our needs and the choices that have to be made as a result. It is explained that while the earth is a very rich source of raw materials that support human life, most of these resources, in particular, oil, gas and fertile agricultural land, are limited.

The unit looks at how the resources of land, labour, capital and enterprise are used to become factors of production. The example of a successful entrepreneur illustrates how factors can be combined to generate wealth and opportunity for growth in an economy.

The unit develops the idea of choice with the introduction of the concept of opportunity cost. Explanations are given of how every economic decision involves a choice, and that when choices are made, the sacrificed alternative becomes the opportunity cost.

TOPIC AIDS

Students should be able to:

• define the nature of the economic problem (finite resources and unlimited wants)
• define the factors of production (land, labour, capital, enterprise)
• define opportunity cost and analyse particular circumstances to illustrate the concept
• demonstrate how production possibility curves can be used to illustrate choice and resource allocation
• evaluate the implications of particular courses of action in terms of opportunity cost.
The economic problem

We cannot have everything that we want because there are not enough resources to produce it all. Everything produced comes from a resource. There are a number of types of resource (Figure 1.1.1).

<table>
<thead>
<tr>
<th>Natural resources</th>
<th>Human-made resources</th>
<th>Human resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil, climate, water, minerals, forests and fisheries</td>
<td>Machinery, buildings and equipment</td>
<td>People and their skills</td>
</tr>
</tbody>
</table>

If society had all the land, labour, raw materials and other resources it needed, we could produce all the goods we wanted without making sacrifices. In reality resources are scarce. When we use resources to produce an item, we are taking away these resources from producing something else. This is a major problem for all societies.

Decision-making over the use of resources involves:

- making a choice (we can do one thing or the other)
- making a sacrifice (if we choose to do this with a resource, we cannot also do the other).

CASE STUDY Fuelwood scarcity in Tanzania

In Tanzania fuelwood is gathered for household use from nearby forests. Some of it is gathered in a sustainable way: branches are cut and the trees regrow them. However, some wood is used for village industries, including tobacco curing, burning bricks, fish smoking, baking and tea drying. Some of the fuel for these purposes comes from charcoal and often involves cutting down whole trees and the destruction of forest areas.

Various studies have shown that annual firewood consumption in Tanzania is higher than the supply of new trees, resulting in deforestation. Fuelwood provides about 90 per cent of the energy supply and many people in Tanzania spend over 30 per cent of their income on it. As it becomes more scarce, the price goes up, and people also have to travel further to collect it.
Questions

1 What is meant by scarcity?
2 Why is fuelwood becoming more scarce in Tanzania?
3 How might this scarcity affect future choices that people make?

Making choices

Gathering fuelwood is an important activity in Tanzania, particularly for people in rural areas. People have to decide whether to buy the wood or collect it themselves, in which case they need to decide how long to spend gathering it and then how to cut it. Having to make choices like this is a result of the economic problem. Domestic energy is not provided freely to households – people have to gather fuel themselves or pay for it.

Our daily lives involve thousands of choices that we have to make that involve how we spend our time and our money.

- Time is a scarce resource – there are only 24 hours in a day.
- Money is a scarce resource – we only have a limited amount.

So daily life involves solving many economic problems where choices have to be made. Imagine that you have to decide whether to buy a book or borrow it from a library. If you buy the book, you ‘sacrifice’ the opportunity to buy something else with the money you would have saved by borrowing it. If you borrow it, you sacrifice the opportunity to own the book. In Units 1.3–1.5 we will explore this further in terms of the cost of the sacrifice – the opportunity cost.

KEY POINTS

1 The economic problem is one of scarcity and choice.
2 Resources are scarce; this requires societies and individuals to make choices.
3 Making a choice involves a sacrifice.

SUMMARY QUESTIONS

1 What resources can you think of that are particularly scarce in your country?
2 Give an example of a situation in which you have had to make a choice because you have not had access to enough resources.
3 In what situations do your school and community make choices because of a scarcity of available resources? Give reasons for each in your answers.
Imagine that you are visiting a modern food-processing plant. It is processing vegetables to put into cans. What do you see?

The most obvious sight will be large areas of land and factory buildings. Inside, you will see machinery, equipment and employees. Some workers will be looking after the equipment. In the production area you will see people preparing the vegetables. Other workers will be loading and unloading supplies and finished goods.

The **factors of production** are what make the business work: **land**, **labour**, **capital** and **enterprise**.

- In the vegetable-processing plant, the land includes the site on which the factory is built.
- The labour is the factory employees.
- The capital is the buildings and machinery that are used to make the canned vegetables.
- Finally, enterprise is the factor that takes the risk in bringing the factors together to produce goods in order to make profits.

**ACTIVITY**

Talk to the owner of a small local business. Find out how the business uses its land and capital, the type of labour employed and the enterprise skills needed to ensure that the enterprise is successful.

**Definitions**

Over the years the four factors of production have come to mean more than the examples used above:

- **Land** is now used to refer to all natural resources, e.g. farmland, water, coal.
- **Labour** is used to refer to all the physical and mental contributions of an employee. So it is more than just the physical effort of digging coal or making car parts. It also includes the mental effort of an accountant or the services provided by a bank clerk.
- **Capital** includes all those items that go into producing other things, e.g. a machine manufactures products, tools contribute to this process, and so on. Machines, tools and buildings are all examples of physical capital.
- **Enterprise** is the factor that brings the other factors together to produce goods in order to make profits.
CASE STUDY  Combining the factors of production

Lakshmi Mittal is a well-known entrepreneur. He founded the Mittal Steel company in India (now part of ArcelorMittal). The company has expanded to take over a network of steel producers from across the world. Today the company headquarters are in Luxembourg. Mittal brings together factors of production in effective combinations to create the only truly global steel company. To run his enterprise Lakshmi Mittal rewards certain features.

- **Labour with wages**: attractive salaries and wages have to be paid to workers in each of the countries while production takes place.
- **Land with rent**: ArcelorMittal has to pay rent on some of the sites on which its factories are located.
- **Capital with interest**: like most other businesses, ArcelorMittal borrows money from banks to fund its activities. Interest must be paid at regular intervals on the loans.
- **Enterprise with profits**: profits are a reward for enterprise. The profits of ArcelorMittal are shared out among shareholders (or reinvested in the business).

Questions

1. Which factor is responsible for bringing together the other factors of production?
2. Why is labour so important to a giant steel company?

KEY POINTS

1. Factors of production are combined to produce goods.
2. Enterprise is responsible for bringing together land, labour and capital.
3. Factors are rewarded in the form of incomes, e.g. wages for employees.

SUMMARY QUESTIONS

1. Choose a familiar product and describe how factors of production are brought together to produce it.
2. What are entrepreneurs? What do they do?
3. What type of capital do the following work with?
   - a  farm workers
   - b  factory workers
   - c  teachers.
Opportunity cost

We may often ask someone with a new purchase, ‘How much did it cost?’ In this sense we are asking how much was paid. However, in economics we employ a slightly different meaning of ‘cost’, which we refer to as the ‘opportunity cost’. Economists believe that ‘opportunity cost’ reveals the ‘real cost’ of making a choice.

Opportunity cost refers to the next best alternative that we give up when we make a particular choice. For example, when you choose to buy a new pen, the sacrifice that you are making is the next best thing that you could have spent the money on. The real cost of any choice is therefore the alternative that is sacrificed.

Two examples of opportunity cost

You may have thought about buying an expensive pen to help you with your studies. However, there are alternatives that you could also consider. You could spend the money on a new top and maybe a trip to the cinema as well. Or you could buy the MP3 player that you have been planning to buy for a long time. When you think carefully about the alternatives, the choice may come down to the player or the pen. So when you go into a shop and pay for the pen, the real sacrifice that you are making is the MP3 player that you have given up. This is the ‘real’ cost.

People will often spend a lot of time making choices, particularly when they buy items like clothes. What they are often doing is weighing up the opportunity cost: if I buy this top, how am I going to feel about not being able to buy another one that I like almost as much? Here they are thinking about the sacrifice made – that is, the next best alternative that they are giving up.
Another decision that we make frequently is how to make use of our time. Sometimes it is difficult to decide whether to stay in to study or to go round to a friend’s house. When you choose to carry out a leisure activity and the next best alternative is time spent studying, the study time that you sacrifice is the opportunity cost.

Opportunity cost is a particularly important economic concept. Economists argue that many decisions taken do not take account of alternatives that are sacrificed when using resources in a particular way. This can lead to undervaluing and, consequently, overuse of important resources.

**ACTIVITY**

Identify two situations where you have recently had to make a decision about how to use your time. Explain how opportunity cost was involved in the choice you made.

Then think of another situation in which you had a choice about how to spend your money. Explain how opportunity cost was involved in the choice.

**KEY POINTS**

1. Opportunity cost is the next best alternative that is sacrificed in making an economic choice.
2. The opportunity cost is the real cost of any economic decision.
3. Purchasing decisions and decisions about how to make use of time involve an opportunity cost.

**SUMMARY QUESTIONS**

1. Dalvinder has saved up US$10 to spend on clothes. She has set out a wish list of what she would like and ranked the items from 1 to 3, with 1 being the most desirable.

<table>
<thead>
<tr>
<th>What I want to buy this week</th>
<th>Shop price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Two T-shirts</td>
<td>US$9.50</td>
</tr>
<tr>
<td>2 Bracelet</td>
<td>US$10.00</td>
</tr>
<tr>
<td>3 Skirt</td>
<td>US$10.00</td>
</tr>
</tbody>
</table>

If she purchases the T-shirts, what is the opportunity cost of making this decision?

2. Why should opportunity cost be considered when making economic choices?

3. In what way is time significant in making economic decisions?
1.4 Production possibility curves

Production possibility curves

A production possibility curve (or frontier) shows combinations of goods that can be produced in an economy at a particular time, utilising all resources.

In an economy, it is only possible to produce a given number of goods at a particular moment in time. The number that can be produced is shown on the production possibility curve.

For example, a territory could use its land to grow two main types of crop – bananas or sugar. If it used all the land to grow bananas it could grow 100 000 kg per year. Alternatively it could use all of its land to produce sugar and produce 50 000 kg per year. A third choice would be to use some of the land for growing bananas and some for growing sugar. For every extra kilogram of bananas grown the economy would have to give up half a kilogram of sugar. If each area of land was identical, the production possibility curve would be a straight line (Figure 1.4.1).

However, land is not identical. Some land is more suitable for growing bananas and some for sugar. If farmers want to produce more bananas they will first use the land that is best for growing bananas and least good for growing sugar. In this case the production possibility frontier is a curve rather than a straight line (Figure 1.4.2). The nearer we are to the end of the curve the steeper it is, because to grow more of one crop will involve a greater sacrifice of the other. The more bananas we grow, the larger the reduction in sugar output required to produce a few more bananas.
Illustrating choice and resource allocation

A production possibility curve can be used to illustrate choices made in an economy and the resultant impact on resource allocation. For example, many island economies e.g. Mauritius, Sri Lanka, Jamaica, Barbados and Trinidad have had to weigh up how much land should be committed to agricultural purposes and how much to tourism. Figure 1.4.3 shows three alternatives. A is a situation where most of the land is allocated to tourism, B is a situation with a fairly even distribution of land between agriculture and tourism, and C is where most of the land is allocated to agriculture. If we start from position B then if we choose to allocate more land to tourism we have to sacrifice some agricultural land. Conversely if we were to choose to allocate more land to agriculture we would have to reduce the area of land available for tourism.

Illustrating opportunity cost

The concept of opportunity cost can be illustrated in the form of production possibility curves. In the production possibility curve shown in Figure 1.4.4 we can consider what happens when agricultural land is converted to hotels and leisure activities. The distance shown by the arrow (A1-A2) on the horizontal axis shows the value of agricultural production sacrificed to increase the value of tourism income by the value illustrated by the arrow on the vertical axis (T1-T2). The greater the proportion of resources already allocated to tourism, the greater the quantity of agricultural output that will have to be sacrificed to use more land for tourism. In other words, the greater the proportion of resources used for tourism, the higher the opportunity cost measured in agricultural output required to increase resource use for tourism.

Summary Questions

1. What do points on a production possibility curve represent?
2. What is the impact on resource allocation if a country chooses to use more land for producing tea and less for producing coffee?