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Susan Grant

Cambridge IGCSE® and O Level Economics

Coursebook

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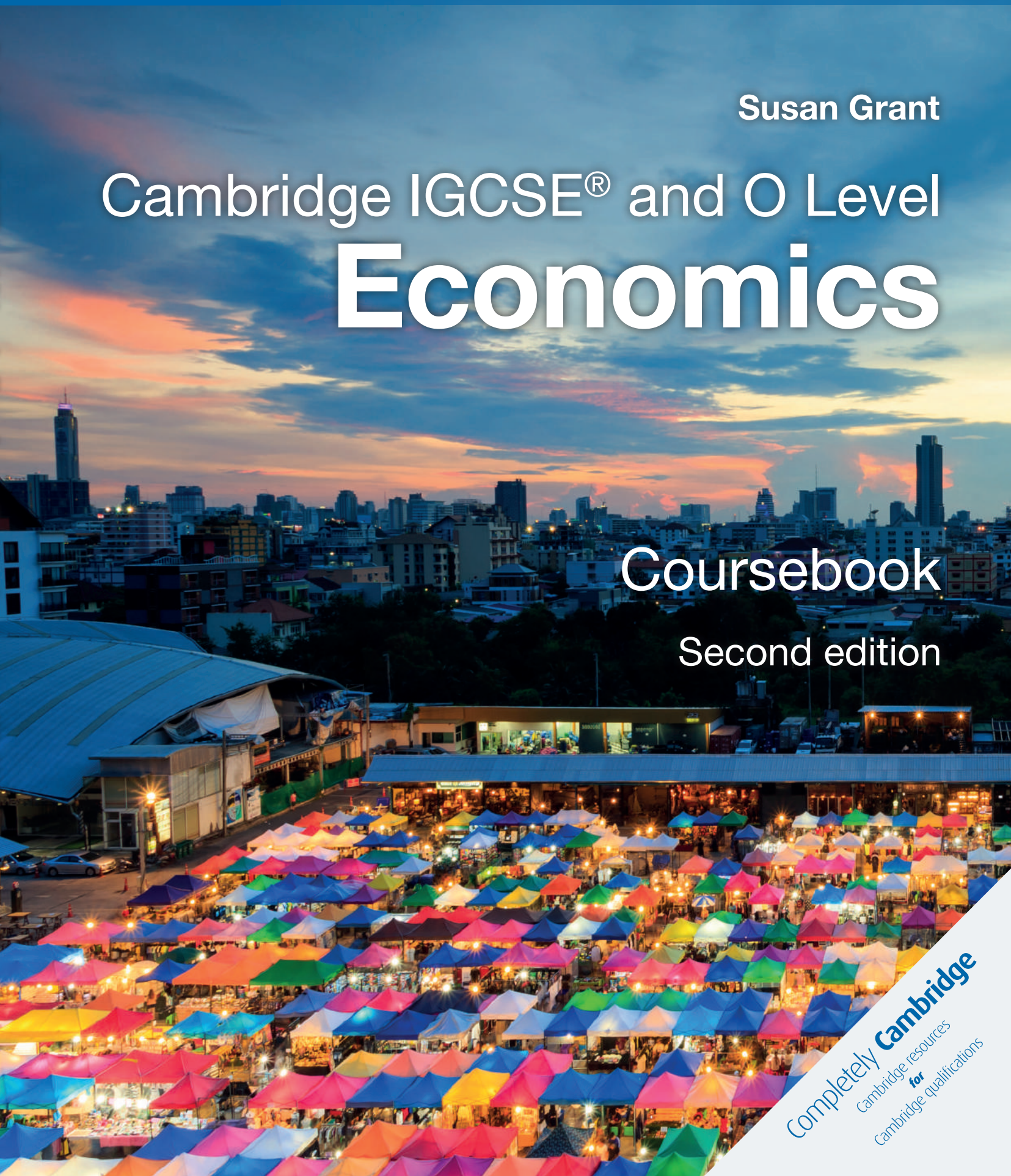

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Contents

Introduction

This book is designed to introduce you to the study of economics and to help you progress through your IGCSE or O Level course. The book follows the structure of the IGCSE and O Level course closely.

The Coursebook is divided into 39 chapters. Each of these chapters explores a key economic topic and is based on a section of the syllabus. Each one has activities, multiple choice questions and four-part questions to assess your understanding of the topic. In the first six chapters, the four-part questions actually contain fewer than four parts. This is because economics is a subject where concepts build on each other. As more concepts are covered and depth is built up, the four-part questions in the remaining chapters do have the full four parts.

Each chapter contains one or more tips. This may remind you of a key point, warn you about a common confusion, give you advice on how to approach a question or recommend an activity which will enhance your understanding. At the end, there is a summary of the main points covered in the chapter. Throughout the book, there are links to parts of other chapters where concepts can help you understand the topic.

The chapters have been arranged into six sections. At the end of each section, there are ten multiple choice questions, data questions and four-part questions covering the whole section.

Introduction to Economics

Economics is an important, well-respected and exciting subject. Economists play a key role in the world. They give advice to firms and governments to improve their performance and also comment on their success or failure. The work of economists can make a significant difference to people's lives. For instance, the policies they recommend to governments may reduce poverty and improve the quality of the environment.

Whilst some of the people who study economics go on to become economists, others enter a range of professions including accountancy, banking, education, journalism and the law. Economists enjoy a lot of respect in universities and professional organisations. They regard it as a rigorous subject that develops logical thinking and analytical and mathematical ability.

There are certain concepts – such as opportunity cost and price elasticity of demand – and certain topics – including price determination, unemployment and inflation – that are central to economics. The subject, however, is ever changing as new theories develop, new institutions are created and new problems are encountered. This makes it an interesting and challenging subject.

The skills of an economist

To be a good economist, you need to be informed of the developments in your economy and other economies. You need to be able to think and write clearly and apply relevant economic terms and concepts. You need to be confident in handling figures. This involves being able to add, divide, subtract, multiply, calculate percentage changes and understand index

numbers. You also need to be able to draw relevant, well-labelled and accurate diagrams. This Coursebook is designed to help you develop these skills.

Preparing for your examination

Revision is a continuous process. After every lesson, check your work and if necessary, add extra notes. As an examination approaches, you will need to do intensive revision. Try to engage in active revision. This involves, not just reading notes, but also using the information. There are a number of ways in which you can do this. They include testing other members of your group, and getting them to test you, drawing spider diagrams and producing tables and revision cards.

Examination technique

It is not sufficient to have a sound knowledge and good skills in the subject. You also have to demonstrate these under examination conditions. So, it is essential to develop examination techniques.

Before an examination, check out the duration of the examination and the number of questions you have to answer. Read the instructions on the examination paper carefully. Do not rush into writing your answers.

In answering multiple choice papers, consider every option in a question carefully. If you are uncertain of an answer to a particular question, move on to the next one and return to the question you were unsure of when you have answered the other questions. At the end, check that you have answered all the questions. Never leave a question unanswered, even if you have to guess.

In answering four-part questions read the questions very carefully, paying particular attention to the command (instruction) words. A question which asks you to identify or state something will only require a brief answer, consisting of a few words. In contrast, a question which asks you to explain, analyse or discuss something will require a longer answer, written in sentences and paragraphs. Unless specifically asked for, you should avoid writing a list.

The marks allocated to a question or part of a question should give you a clear indication of the extent of detail required. It is often useful to include a diagram (or diagrams) in your answers. These should be clear, accurate, well-labelled and backed up by an explanation in the text.

Stretch content

As well as covering all of the topics on your course, in places, the book goes beyond the syllabus to include concepts that stretch your understanding and provide you with possible new ways to approach particular topics and strengthen the depth of your answers. These are marked in the book with a blue line next to them in the margin, and also listed in the table below for your reference.

Topic	Where found in Coursebook
Allocative, productive and dynamic efficiency	Chapter 13.4 Allocative efficiency, Chapter 13.5 Productive efficiency and Chapter 13.6 Dynamic efficiency
Cost benefit analysis	Chapter 15.3 Government measures to address market failure (Effectiveness of government intervention)
Average propensity to consume	Chapter 17.1 Spending (Income and consumption)
Average propensity to save	Chapter 17.2 Saving (Income and saving)
Aggregate demand and aggregate supply analysis	Chapter 25.1 Government's macroeconomic aims (Economic growth)
Purchasing power parity	Chapter 32.1 Indicators of living standards (Comparing living standards between countries)
Genuine Progress Indicator, Gender Inequality Index. Happy Life Index and Gross National Happiness	Chapter 32.1 Indicators of living standards
Multidimensional Poverty Index	Chapter 33 The Multidimensional Poverty Index
Foreign aid	Chapter 35.3 The impacts of differences in economic development between countries (Measures to promote economic development)
Absolute and comparative advantage	Chapter 36.2 Advantages and disadvantages of specialisation at a national level (The advantages and disadvantages for the economy)

Acknowledgement

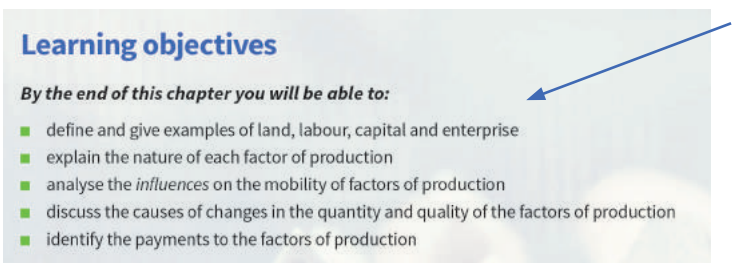
I would like to thank the team at CUP, particularly Susan Ross, Neil O'Regan and David Crosby, for their help and support.

Susan Grant

How to use this book

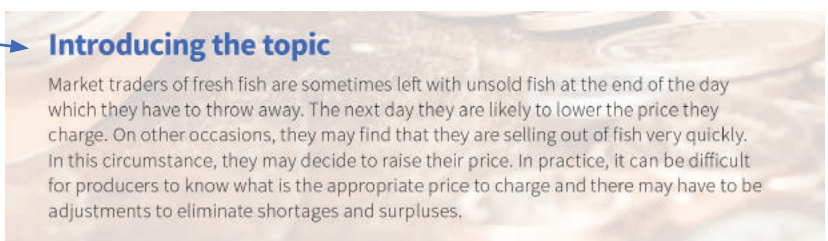
This book is designed as a practical guide to help build your knowledge and understanding of economic terms, principles and processes and assumes no prior knowledge of the subject. Carefully aligned to the syllabus, it will help you to obtain the key skills required of an economist so that you can become confident in applying these to reach reasoned conclusions about economic issues.

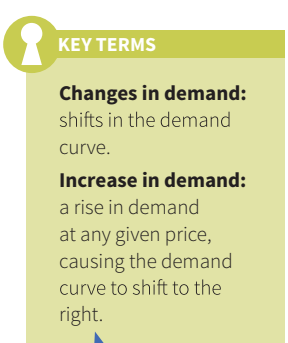
Each chapter focuses on a particular topic, and you will find a range of easy-to-follow pedagogical features to guide you through it. Key terms are highlighted and there are regular opportunities for you to reflect on your progress, check your understanding and practice the economic skills you have developed.

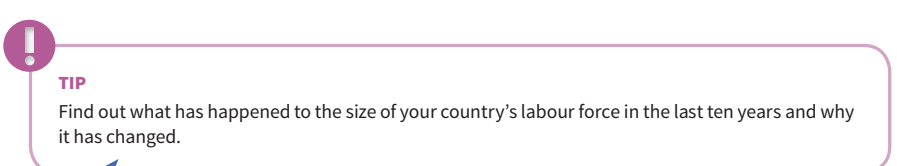


Learning objectives
Each chapter begins by outlining the key economic concepts that you will learn. This will help you to navigate your way through the book and remind you what is important about each topic.

Introducing the topic
These concise sections at the beginning of chapters open up an accessible entry point into the topic you are about to learn. This could be a question that gets you thinking about an issue relevant to that topic, or additional context which helps you to understand how the topic fits within real life scenarios.

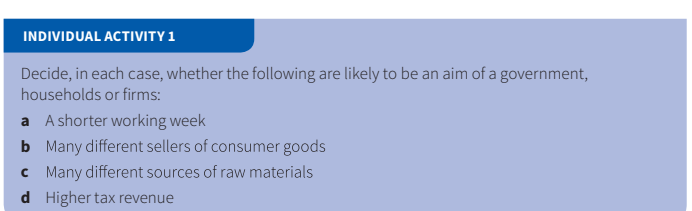


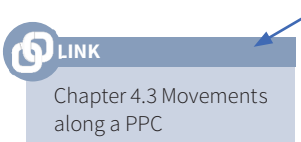




Tip
Tip boxes provide reminders about key economic concepts, help on avoiding common errors and tips to help you tackle trickier topics.

Key terms
These definitions will help you to identify and understand important terminology and concepts within economics.





Link
Links show you where you can find additional information elsewhere in the book about related topics.

Individual Activity
A series of questions and exercises designed to help you check your progress and put your knowledge of a particular topic into practice.

Group Activity

Group activities encourage you to engage with your peers, working in pairs or groups to share ideas and exchange viewpoints on a particular economic issue.

GROUP ACTIVITY 1

Decide whether each of the following is a substitute or a complement to a Volkswagen car:

a public transport
b petrol
c a Ford car.

Summary

You should know:

- Price is determined by the interaction of demand and supply.
- At the equilibrium price, demand is equal to supply.
- If a market is in disequilibrium initially, market forces will move it towards equilibrium.
- If price is below the equilibrium price, there will be excess demand.
- If price is above the equilibrium price, there will be excess supply.

Summary

Short sections at the end of each chapter provide a useful summary of the key learning points covered in that chapter.

Multiple Choice Questions

At the end of each chapter you will find a series of multiple choice questions which relate to the topic you have just covered in the chapter. Practising these will help you to check your progress at regular intervals through the book.

Multiple choice questions

1 In which case is market failure occurring?

A Consumers determining what is produced
B Firms producing above the lowest possible cost
C Price falling as a result of a decrease in demand
D Price rising as a result of an increase in costs of production

2 A merit good is one which:

A has an absence of external benefits
B has higher private benefits than consumers realise
C imposes costs on those who are not involved in its production directly
D is both non-excludable and non-rival

3 Which type of goods would be over-produced if left to market forces?

A Basic necessities
B Capital goods
C Demerit goods
D Public goods

Four-Part Questions

At the end of each chapter, there will be an opportunity for you to practice answering 'four-part questions'. At the start of the book, you will learn how to answer the first two parts, and gradually, as you progress through the book you will be faced with full, four-part-questions to complete.

Four-part question

a Identify two differences between the private sector and the public sector. **(2)**
b Explain why consumers are said to be sovereign in a market economic system. **(4)**
c Analyse the role of profit in a market economic system. **(6)**
d Discuss whether or not prices will be low in a market economic system. **(8)**

Exam-Style Questions

Exam-style questions, can be found at the end of each section within the book. These are designed to help you to practise answering the sort of questions you are likely to see in an exam.

Exam-style questions

Multiple Choice Questions

1 'Money enables people to borrow and lend'. Which function of money does this describe?

A measure of value
B medium of exchange
C standard for deferred payment
D store of value

2 What is a function of a commercial bank?

A to control the money supply
B to decide on the amount spent by the government
C to lend to individuals and firms
D to manage the national debt

3 Which statement about different income groups is true?

A Low income groups save more, in percentage terms, than high income groups
B Low income groups find it easier to borrow than high income groups
C High income groups spend less, in percentage terms, than low income groups
D High income groups do not borrow money

4 More people throughout the world visit the cinema. What impact is this likely to have on the demand for actors and their wages?

	Demand for actors	Wages of actors
A	decreases	decrease
B	decreases	increase
C	increases	increase
D	increases	decrease

5 Which combination of events would increase a trade union's ability to negotiate a wage rise for its members?

	Labour productivity	Unemployment
A	decreases	decreases
B	decreases	increases
C	increases	increases
D	increases	decreases

Stretch content

A blue line in the margin has been added to identify areas of content that go beyond the syllabus. You will not be expected to know and learn these for your course, but you may want to use them to challenge yourself further, and in some cases they may help you better understand a concept you are learning.

There are, nevertheless, risks attached even to a mixed economic system and there is no guarantee that it will perform better than the other two types of systems. Market failure can occur and government intervention may make the situation worse.

SECTION 1
The basic economic problem

Chapter 1
The nature of the economic problem

Learning objectives

By the end of this chapter you will be able to:

- define and give examples of the economic problem
- explain the difference between economic goods and free goods

Introducing the topic

Do you have everything you would like to have? Some unfortunate people clearly need more goods and services. These are the people who lack the goods and services needed for survival. If our needs for sufficient food, clothing and housing are met, we will still want other products. Indeed, our **wants** are unlimited. The richer we get, the more, and the better, quality products we would like. Many of us would like, for instance, more foreign holidays and a new laptop. This chapter will look at why we cannot have everything we would like.

KEY TERM

Wants: desires for goods and services.

1.1 Finite resources and unlimited wants

What stops people enjoying all the products they would like to have is a lack of **resources** to produce them. Resources, including workers and machinery, are scarce. This means that they are limited in supply. **The economic problem** of not being able to satisfy everyone's wants arises because of this **scarcity**.

There is no limit to people's wants – they are infinite. For instance, people want more and better clothing, healthcare and improved transport infrastructure. The number of workers, machines, offices, factories, raw materials and land used to produce these goods and services, however, is finite. At any given time, for example, there are only a limited number of workers and they can produce only a specified amount. This mismatch, between what people want and the maximum that can be produced, gives rise to the economic problem. Choices have to be made about how resources are to be used.

KEY TERMS

Resources: factors used to produce goods and services.

The economic problem: unlimited wants exceeding finite resources.

Scarcity: a situation where there is not enough to satisfy everyone's wants.

The continuing nature of the economic problem

Scarcity continues to exist. More goods and services are being produced today than ever before, but the growth in wants is exceeding the growth of economic resources. People still want more products than the resources available can produce. Over a period of time, wants continue to grow and change.

The economic problem in different contexts

The fact that people have to choose which products to buy, which subjects to study, what jobs to do and which products to produce shows that there are insufficient resources. As consumers, we cannot have everything we want. We have limited incomes. Students have to select which courses to study. It is not possible to study economics and chemistry at the same time. Workers have to make choices about what jobs they do. Some teachers may carry out other work in the evening, but when they are teaching they are not working as writers! Time is in limited supply. Producers have to decide what to make. Farmers cannot grow rice and wheat on the same land. They have to select one crop as land is scarce. The government has to decide how to spend tax revenue. Deciding to build a new hospital may mean that it cannot build a new school.

TIP

It is very important to learn definitions. The more you apply a term such as scarcity in your work, the more you will become familiar with it. You may also want to compile your own economics dictionary by writing down terms in alphabetical order, as you come across them.

GROUP ACTIVITY 1

In your group, discuss and decide which of the following are scarce:

a vacancies for university degree courses **b** foreign holidays

c healthcare.

1.2 Economic goods and free goods

The vast majority of goods and services are economic goods. This means that it takes resources to produce them and so they are limited in supply. For example, a carpet is an **economic good**. The material and labour used to produce it could have been used to make

LINK

Chapter 3.2 Influence of opportunity cost on decision making (Economic goods and free goods)

TIP

Remember that in economics what determines whether a product is a free good is not whether people have to pay for it, but whether it takes resources to produce it.

KEY TERMS

Economic good: a product which requires resources to produce it and therefore has an opportunity cost.

Free good: a product which does not require any resources to make it and so does not have an opportunity cost.

another good (or goods). It is easy to find examples of economic goods. Almost every good and service you can think of is an economic good. Your education is an economic good, since your teachers and the other resources used to provide it could have been employed for making other products.

Free goods are much rarer. When most people talk about free goods, they mean products they do not have to pay for. These are not usually free goods in the economic sense since resources have been used to produce them. Economists define a free good as one that takes no resources to make it. It is hard to think of examples of free goods. Sunshine is one such example, so is water in a river. However, as soon as this water is processed for drinking, or used for irrigation of fields, it becomes an economic good.

Water in a river is a free good

GROUP ACTIVITY 2

In your group, discuss and decide whether each of the following is an economic or a free good:

a air
b education
c newspapers
d public libraries
e state education.

Summary

You should know:

- People's wants continue to grow.
- Resources such as workers, machines and land are limited in supply.
- The economic problem is that unlimited wants exceed finite resources.
- Economic goods take resources to produce them.
- Free goods exist without the use of resources.

Multiple choice questions

1 Why does scarcity exist?

A Each year workers tend to produce less than previously
B Machines wear out with time
C There are not sufficient resources to produce all the products people want
D There is a limit to people's wants

2 Why will scarcity continue to be a problem in the future?

A Prices will rise
B The quantity of resources will decline
C Wants will continue to increase
D World population will fall

3 Which of the following is a free good?

A Inoculation provided without charge by the state
B Products given away by a supermarket to attract customers
C Recycled paper
D Wind coming in from the sea

Four-part question

a What is meant by the economic problem? **(2)**
b Explain why a car is an economic good. **(4)**

Chapter 2
Factors of production

Learning objectives

By the end of this chapter you will be able to:

- define and give examples of land, labour, capital and enterprise
- explain the nature of each factor of production
- analyse the *influences* on the mobility of factors of production
- discuss the causes of changes in the quantity and quality of the factors of production
- identify the payments to the factors of production

Introducing the topic

We are living longer. In 1960 the average life expectancy in Bangladesh was 46 years. By 2015 it had risen to 72 years. The increase in Malaysia was even more dramatic – from 37 years to 77 years and the Japanese could expect to live until 83 in 2015. Figure 2.1 shows how the global average life expectancy has increased over the same period.

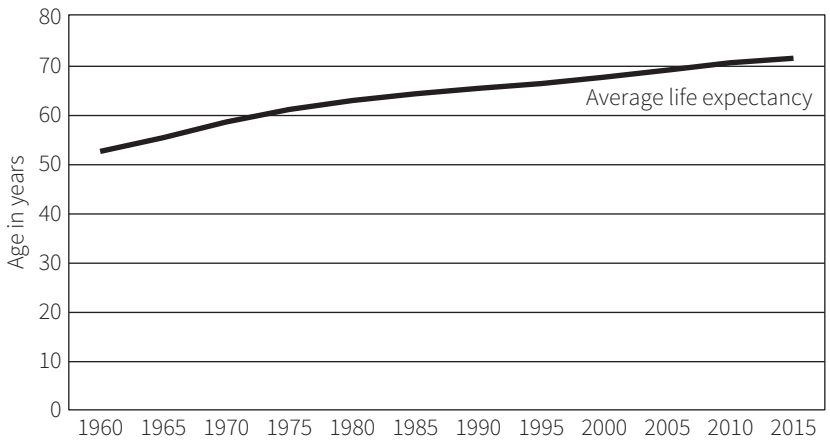


Fig. 2.1: Global average life expectancy, 1960–2015. Why can we expect to enjoy a longer lifespan?

2.1 The importance of factors of production

People are living longer because healthcare, education, housing, sanitation and nutrition have improved. This, in turn, is because of increases in the quantity and quality of **factors of production**. Factors of production is another term for economic resources. Chapter 1 explained that economic resources are used to produce goods and services, and that they are in limited supply.

Most economists identify four factors of production:

- land
- labour
- capital
- enterprise.

Some economists, however, claim that there are really only three factors of production and that enterprise is a special form of labour.

KEY TERMS

Factors of production: the economic resources of land, labour, capital and enterprise.

Land: gifts of nature available for production.

Land

Land in general terms includes the earth in which crops are grown, and on which offices and factories are built, but in economics it has a wider meaning. It covers any natural resource which is used in production. So besides the land itself, it also includes what is beneath the land, such as coal, what occurs naturally on the land, for example rainforests, and the sea, oceans and rivers and what is found in them, for example fish.

To attract foreign tourists, for example, a travel company will make use of water in its swimming pools, good climate and beaches in the holidays it provides. Similarly, the land used by a safari park includes not only the grass on which some of the animals graze, but also the animals themselves.

Labour

Labour covers all human effort. This includes both the mental and the physical effort, involved in producing goods and services. A road sweeper, a steel worker and a bank manager all contribute their labour.

Confusingly, we sometimes also refer to human capital. This means the education, training and experience that workers have gained. The more human capital workers have, the more they should be capable of producing.

Capital

Capital would have to be used in the diversion of the course of a river. Capital is any human-made (manufactured) good used to produce other goods and services. It includes, for example, offices, factories, machinery, railways and tools.

Capital is also referred to as **capital goods** and producer goods. Economists distinguish between capital and consumer goods. Capital goods are not wanted for their own sake, but for what they can produce. In contrast **consumer goods**, such as food, clothing and entertainment, are wanted for the satisfaction they provide to their owners.

In deciding whether a good is a capital or a consumer good, it is necessary to consider who the user is and the purpose of its use. A computer, for example, will be a capital good if it is used by an insurance company to process insurance claims – it is producing a service. If, however, it is used by a person to play games, it is a consumer good.

KEY TERMS

Labour: human effort used in producing goods and services.

Capital/capital goods: human-made goods used in production.

Consumer goods: goods and services purchased by households for their own satisfaction.

Enterprise: risk bearing and key decision making in business.

GROUP ACTIVITY 1

In your group, discuss and decide which of the following are capital goods and which are consumer goods:

a a chocolate bar
b a car
c a child's toy
d a farm tractor
e a dentist's drill
f a courtroom.

Enterprise

Enterprise is the willingness and ability to bear uncertain risks and to make decisions in a business. Entrepreneurs are the people who organise the other factors of production and who crucially bear the risk of losing their money if their business fails. Entrepreneurs decide what to produce by taking into account consumer demand and how to produce it. Some of the risks faced by any business can be insured against, for example fire, flood and theft. Other risks, however, have to be borne by entrepreneurs. This is because some events are not anticipated, based on past events, and so cannot be insured against. These include the uninsurable risks of other firms bringing out rival products and the rising costs of production.

The two key tasks of an entrepreneur can be carried out by different people. In large companies, it is the shareholders who run the risk of losing their money if the companies go out of business, whilst the managing director takes production decisions and organises the factors of production.

2.2 Mobility of the factors of production

The mobility of land

Most land is **occupationally mobile**. This means that it can be used for a number of purposes. Land which is currently being used for farming may be used instead to build houses. Trees can be used to make tables or sleepers for railway lines.

Land, in its traditional sense, is **geographically immobile**. It is not possible to move a section of land from Sri Lanka to India, for example. Some forms of land, in its wider meaning, can be moved to a certain extent. For example, the course of rivers can be diverted and wildlife can be moved.

LINK

Chapter 14.8 Immobility of resources

INDIVIDUAL ACTIVITY 1

Identify two forms of land that are used by a paper mill.

The mobility of labour

The **mobility of labour** varies. Some workers may find it difficult to move from one area of the country to another, or from one country to another (geographical immobility), and some may find it difficult to switch from one type of job to another type (occupational immobility). The causes of geographical immobility include:

- **Differences in the price and availability of housing in different areas and countries.** Workers who lose their jobs in poor areas may not be able to take up jobs in rich areas because they cannot afford or find housing there.
- **Family ties.** People may be reluctant to leave the country they are currently living in because they do not want to move away from friends and relatives.
- **Differences in educational systems in different areas and countries.** People may not be willing to move to a job elsewhere if it disrupts their children's education.
- **Lack of information.** People without jobs, or those in poorly paid jobs, may stay where they are because they are unaware of job opportunities elsewhere.
- **Restrictions on the movement of workers.** It is often necessary to obtain a work visa to work in another country and these can be limited in supply.

There are also a number of causes of occupational immobility. Again there may be a lack of information about vacancies in other types of jobs. The main cause, however, is a lack of appropriate skills and qualifications. A shortage of doctors cannot be solved by hiring bus drivers!

KEY TERMS

Occupationally mobile: capable of changing use.

Geographically immobile: incapable of moving from one location to another location.

Mobility of labour: the ability of labour to change where it works or in which occupation.

Mobility of capital: the ability to change where capital is used or in which occupation.

The mobility of capital

The geographical and occupational **mobility of capital** varies according to the type of capital goods. Some types of capital goods can be transferred from one part of the country to another. A photocopier used by a bank in one area of a country can be sold to, and then used by, a bank in another area. A coal mine and a dock, however, are fixed in position and

so are geographically immobile. They are also occupationally immobile since their use cannot be changed, as they have been made for a specific purpose. In contrast, a delivery van used originally by a book publisher may be bought and employed by a toy manufacturer to distribute its products. Similarly, an office block may be used for a variety of purposes. It may house a call centre or an accountancy firm.

GROUP ACTIVITY 2

In your group, identify three capital goods used in your school that are geographically mobile.

KEY TERMS

Mobility of enterprise: the ability to change where enterprise is used or in which occupation.

Entrepreneur: a person who bears the risks and makes the key decisions in a business.

The mobility of enterprise

Enterprise moves when the people who carry out the functions move. These people are called entrepreneurs. The **mobility of enterprise** depends on the mobility of **entrepreneurs**.

Enterprise is the most mobile factor of production. The skills involved in being an entrepreneur can be applied in every industry. Someone who has borne uncertain risks and organised factors of production in the car industry should be able to do this in, for example, the textile industry too. Apart from being occupationally mobile, enterprise is also geographically mobile. Someone who has been successful in starting up and running a business in one country is likely to be successful in another country also.

TIP

Immobility is the opposite of mobility, so if you know the causes of an increase in immobility of a factor of production, it is easy to work out the causes of an increase in mobility of that factor. For example, if a reduction in training will cause an increase in occupational immobility of labour, an increase in training will increase the mobility of labour.

INDIVIDUAL ACTIVITY 2

The following is a list of economic resources. In each case, decide whether the resource is an example of land, labour, capital or enterprise:

a chemical fertiliser
b a school
c a lake
d the work of a nurse
e the initiative needed to set up and run a bicycle repair shop.

2.3 Quantity and quality of the factors of production

The quantity of land

The amount of physical land in existence does not change much with time. There is a certain degree of soil erosion which reduces the supply of agricultural land, but also a certain amount of land reclamation which increases its supply. Other natural resources, however, can change quite significantly. Rainforests are currently declining at a rapid rate.

Some natural resources are renewable whilst others are non-renewable. Renewable resources, for example wind power, are replaced by nature and can be used again and again. In contrast, non-renewable resources, for example gold and oil, are reduced by use. There is a risk that renewable resources can be turned into non-renewable resources if they are over-exploited, that is used at a faster rate than they are replenished. Over-fishing and the hunting of wildlife can diminish numbers to a point where they cannot be restored.

The quality of land

There are a number of reasons why the quality of natural resources may increase. Fertilisers can be applied to fields to increase the fertility of the land. The purity of rivers, and so the health of fish in the rivers, can be improved by stopping firms polluting the rivers. Providing good drainage can increase the yield from fruit trees.

The quantity of labour

The quantity of labour is influenced by two key factors. One is the number of workers available and the second is the number of hours for which they work.

The number of available workers is determined by:

- **The size of the population.** The larger the population, the more workers there are likely to be.
- **The age structure of the population.** A country with a high proportion of people of working age will have more workers than a country with the same population size, but a higher proportion of people who would be too young or too elderly to work.
- **The retirement age.** The higher the retirement age, the more potential workers there will be.
- **The school leaving age.** Raising the school leaving age would reduce the number of workers.
- **Attitude to working women.** Countries where it is acceptable for women to work have more workers to draw on.

Those people who are working and those seeking work form the **labour force**. This is also known as the workforce or working population. Those of working age are people between the school leaving age and the retirement age. In Singapore, this covers people aged between 16 and 62. In the UK, this covers people aged between 16 and 66. Not all of these people, however, are in the labour force. Some may be in full-time education, some may have retired and some may be sick or disabled.

The number of hours which people work is influenced by (among other factors):

- the length of the average working day, for example full-time workers in the USA tend to work for longer hours than those in European Union countries
- whether they work full or part-time, for example more people in the UK work part-time than those in France
- the duration of overtime
- the length of holidays taken by workers
- the amount of time lost through sickness and illness.

As with all the factors of production, it is not just the quantity of labour which is important, but also the quality. More can be produced with the same number of workers if the workers become more skilled. An increase in **productivity**, including **labour productivity,** is a major cause of an increase in a country's **output**.

KEY TERMS

Labour force: people in work and those actively seeking work.

Productivity: the output per factor of production in an hour.

Labour productivity: output per worker hour.

Output: goods and services produced by the factors of production.

TIP

Find out what has happened to the size of your country's labour force in the last ten years and why it has changed.

The quality of labour

The quality of labour can be improved as a result of better education, better training, more experience and better healthcare. A better educated, better trained and more experienced labour force will be able to carry out more difficult tasks, work with more complex machinery and equipment, and produce more and better quality products. A healthier labour force will be able to concentrate more, be stronger for any manual tasks and will have fewer days off sick.

INDIVIDUAL ACTIVITY 3

Decide which of the following would raise labour productivity:

a improved education and training

b better equipment

c worse working conditions.

KEY TERMS

Investment: spending on capital goods.

Gross investment: total spending on capital goods.

Depreciation (capital consumption): the value of capital goods that have worn out or become obsolete.

Net investment: gross investment minus depreciation.

Negative net investment: a reduction in the number of capital goods caused by some obsolete and worn out capital goods not being replaced.

The quantity of capital

The quantity of capital is influenced by **investment** and tends to increase with time. Every year some capital goods physically wear out and some become outdated, for example a farm barn may fall down and some machinery may be replaced by newer, more efficient machinery.

New capital goods, however, usually take the place of those goods, which firms are unable (or choose not) to use any more. The total value of the output of capital goods produced is referred to as **gross investment**. Some of the capital goods being produced will be replacing those which have worn out or become obsolete. The value of replacement capital is called **depreciation** or capital consumption.

Net investment is the value of the extra capital goods made. It is equal to gross investment minus depreciation. For example, if a country produces $200 million capital goods one year and there is depreciation of $70 million, net investment is $130 million. The country will have more capital goods. These additional capital goods will allow it to produce more goods and services.

Occasionally, gross investment may be lower than depreciation. This means that some of the capital goods taken out of use, are not replaced. This is said to be **negative net investment**.

TIP

Be careful not to confuse money and capital. Remember: when economists refer to capital, they mean human-made goods, such as machinery and office buildings, that are used to produce other products.

The quality of capital

Advances in technology enable capital goods to produce a higher output and a better quality output. The development of robotics in car production, for example, has increased significantly the number of cars that a car factory can produce.

Automation in car manufacturing

INDIVIDUAL ACTIVITY 4

A firm is currently using 12 machines. Each machine is capable of producing 100 units of output. It anticipates that by the end of the year, 3 of its machines will wear out.

a If it expects to sell 1600 units next year, how many machines will it buy?

b Why in the future may fewer machines be needed to produce the same output?

GROUP ACTIVITY 3

In your group, discuss how advances in technology have changed:

a students' learning experience

b people's medical care

c food production.

The quantity of enterprise

The quantity of enterprise will increase if there are more entrepreneurs. A good education system, including university degree courses in economics and business studies, may help to develop entrepreneurs in an economy. Lower taxes on firms' profits (corporate taxes) and a reduction in government regulations may encourage more people to set up their own businesses. Sometimes, a disproportionate number of immigrants become entrepreneurs. These are people who have had the drive to leave their home country in search of a better life and this drive often leads them to become entrepreneurs in the new country.

The quality of enterprise

The quality of enterprise can be improved if entrepreneurs receive better education, better training, better healthcare and gain more experience. More experience can be particularly significant in the case of entrepreneurs. Very successful entrepreneurs have often set up businesses in the past, some of which may have failed. The knowledge and understanding they have gained of, for example, the products people like to buy and the best sources of raw materials, can help them make a success of a new business.

GROUP ACTIVITY 4

In your group:

a Research, in each case, which entrepreneur founded the following firm and whether s/he has a university degree:

- **i** LimeRoad, an online women's fashion firm
- **ii** Lenovo, a computer firm
- **iii** The Silverbird Group, a property, media and entertainment firm
- **iv** Sofizar, an internet marketing firm.

b Find an example of a successful entrepreneur who does not have a degree.

2.4 Payments for factors of production

Payments are made for the use of factors of production. Firms pay wages for the services of the workers. For bearing uncertain risks and organising the other factors of production, entrepreneurs earn profit. Land receives rent and interest is a payment for capital.

Summary

You should know:

- The four factors of production are land, labour, capital and enterprise.
- Land is a term covering all natural resources.
- Some natural resources are renewable whereas others are non-renewable.
- Whilst most land is occupationally mobile, land in its traditional meaning is geographically immobile.
- Labour involves the mental and physical effort workers put into producing goods and services.
- The quantity of labour is influenced by the number of workers and the number of hours for which they work.
- The size of the labour force is influenced by the size and age structure of the population, the school leaving age, the retirement age and attitudes to women working.
- The quality and occupational mobility of labour can be increased by better education and training.
- The geographical immobility of labour may be caused by lack of housing and information about job vacancies, family ties and the need to gain a visa to work in a different area.
- Capital goods are used to make other goods and services.
- Net investment increases a country's stock of capital goods.
- Enterprise involves taking risks and making production decisions.
- Improved education, lower taxes and less regulation can encourage enterprise.
- Successful entrepreneurs tend to be occupationally and geographically mobile.

Multiple choice questions

1 Which factor of production's function is to make decisions and take risks?

A Capital
B Enterprise
C Labour
D Land

2 Which type of factor of production is a road?

A Capital
B Enterprise
C Labour
D Land

3 A country produces 3000 new capital goods in a week. 500 of these replace worn out capital goods. What is the net investment made?

A 500
B 2500
C 3000
D 3500

4 Which factor of production is the most mobile?

A Capital
B Enterprise
C Labour
D Land

Four-part question

a Identify **two** non-human factors of production. **(2)**
b Explain **two** causes of an increase in the quantity of labour. **(4)**
c Analyse why the mobility of labour may increase over time. **(6)**

Chapter 3
Opportunity cost

Learning objectives

By the end of this chapter you will be able to:

- define opportunity cost
- give examples of opportunity cost in different contexts
- explain the influence of opportunity cost on the decision making of consumers, workers, producers and governments

Introducing the topic

There are many subjects that schools could teach. For example, Cambridge International Examinations offers more than 70 subjects at IGCSE. Each school offers only a proportion of the subjects on offer. Why is this? It is because schools do not have enough classrooms, teachers and equipment to teach all subjects, for example a classroom can be used to teach English or economics in the same room, but not at the same time.

There are not enough economic resources to produce all the goods and services we would desire, as we saw in Chapter 1. Land, labour, capital and enterprise are scarce and so decisions have to be made about the method and purpose of their use. In deciding what to use the classroom for, and in making other decisions, the concept of opportunity cost is important.

3.1 The meaning of opportunity cost

When we decide to do one thing, we are deciding not to do something else. To ensure that we make the right decisions, it is important that we consider the alternatives, particularly the best alternative. **Opportunity cost** is the cost of a decision in terms of the best alternative given up to achieve it, for example there are a variety of things you could do tomorrow between 5 pm and 6 pm. These may be to go shopping, to read a chapter of an economics book, to do some paid work or to visit a friend. You may narrow those choices down to reading the chapter or visiting a friend. You will have to consider very carefully which one will give you the best return. If you choose to read the chapter, you will not be able to visit your friend and vice versa.

KEY TERM

Opportunity cost: the best alternative forgone.

Reading has an opportunity cost

LINK

Chapter 4.3 Movements along a PPC

TIP

In explaining opportunity cost, it is always useful to give an example.

3.2 Influence of opportunity cost on decision making

Opportunity cost and consumers

Consumers are buyers and users of goods and services. We are all consumers. The vast majority of us cannot buy everything we like. You may, for example, have to choose which economics dictionary to buy. You will probably consider a number of different ones, taking into account their prices. The choice will then tend to settle on two of them. You are likely to select the one with the widest and the most accurate informative coverage. The closer the two dictionaries are in quality and price, the harder the choice will be.

Opportunity cost and workers

Undertaking one job involves an opportunity cost. People employed as teachers might also be able to work as civil servants. They need to carefully consider their preference for the jobs available. This would be influenced by a number of factors, including the wage paid, chances of promotion and the job satisfaction to be gained from each job. If the pay of civil servants or their working conditions improve, the opportunity cost of being a teacher will increase. It may even increase to the point where some teachers resign and become civil servants instead.

GROUP ACTIVITY 1

In your group, discuss why the opportunity cost of working as an accountant is likely to be higher than that of working as a window cleaner.

Opportunity cost and producers

Producers have to decide what to make. If a farmer uses a field to grow sugar beet, he cannot keep cattle on that field. If a car producer uses some of his factory space and workers to produce one model of a car, he cannot use the same space and workers to make another model of the car at the same time.

In deciding what to produce, private sector firms will tend to choose the option which will give them the maximum profit. They will also take into account the demand for different products and the cost of producing those products.

Opportunity cost and the government

LINK
Chapter 4.3 Movements along a PPC

Government has to carefully consider its expenditure of tax revenue on various things. If it decides to spend more on education, the opportunity cost involved may be a reduced expenditure on healthcare. It could, of course, raise tax revenue in order to spend more on education. In this case, the opportunity cost would be put on the taxpayers. To pay higher taxes, people may have to give up the opportunity to buy certain products or to save.

TIP

Opportunity cost is one of the most important concepts in economics. You will find that you can use it in answers to a relatively wide range of structured questions.

INDIVIDUAL ACTIVITY 1

In each of the following cases, consider what might be the opportunity cost.

a A person wanting to buy fruit, decides to buy apples.

b A person decides to study economics at a university.

c A factory is built on farm land.

d A woman has a television set which cost her $800 two years ago. A new set would cost her $1000 and she could sell her television set for $450. What is the opportunity cost of keeping the old television?

Economic goods and free goods

LINK
Chapter 1.2 Economic goods and free goods

As resources are used to produce economic goods, their production involves an opportunity cost. In contrast, no resources are used to produce free goods and so they do not involve an opportunity cost.

Summary

You should know:

- Opportunity cost is an important concept as it emphasises that people have to consider what they are sacrificing when they decide what to buy, what job to do and what to produce, and when governments are deciding what to spend their tax revenue on.
- Economic goods have an opportunity cost whereas free goods do not.

Multiple choice questions

1 What is meant by 'opportunity cost'?

A The best alternative forgone

B The cost of the item selected

C The cost of exploring business opportunities

D The labour used in producing the product

2 A person decides to go to the university for three years, to study economics. If he had not gone, he could have taken up a job which would have paid him $15 000 a year. After he graduates he expects to find a job paying him $40 000 a year. What is the opportunity cost of going to the university for him?

A $15 000 **B** $40 000

C $45 000 **D** $120 000

3 What are the characteristics of a free good?

A	Has an opportunity cost	Takes resources to produce it
B	Has an opportunity cost	Takes no resources to produce it
C	Has no opportunity cost	Takes no resources to produce it
D	Has no opportunity cost	Takes resources to produce it

4 On his birthday, Kamran receives $200 from his aunt, $50 of which he decides to save. He is taken out by his father for lunch. His father pays the bill. Kamran spends the afternoon playing football. Which of these activities involves an opportunity cost?

	Eating the free lunch	Playing football	Saving
A	No	No	No
B	No	No	Yes
C	No	Yes	Yes
D	Yes	Yes	Yes

Four-part question

a Define *opportunity cost*. **(2)**

b Explain why opportunity cost is an important concept for producers. **(4)**

c Analyse what effect the building of an airport may have on the decision of how to use an area of land nearby. **(6)**

Chapter 4
Production possibility curves

Learning objectives

By the end of this chapter you will be able to:

- define a production possibility curve
- draw a production possibility curve
- interpret points under, on and beyond a production possibility curve
- analyse movements along a production possibility curve
- analyse the causes and consequences of shifts in a production possibility curve

Introducing the topic

The USA produces many more goods and services than Mauritius. In 2015, the output of the USA was valued at $18 trillion whereas it was only $25 billion in Mauritius. You should not be surprised at this difference. The USA has a much larger economy with a much larger labour force, more capital equipment, more entrepreneurs and more natural resources.

The productive potential of an individual, firm or a country can be shown on a production possibility curve (PPC) diagram. Such a diagram can also illustrate opportunity cost and efficiency.

4.1 A production possibility curve

A **production possibility curve** is also known as a production possibility frontier or a production possibility boundary. It shows the maximum output of two types of products, and combinations of those products that can be produced with the existing quantity and quality of resources and technology.

Figure 4.1 shows that a country can produce either 200 capital goods or 300 consumer goods or a range of combinations of these two types of goods.

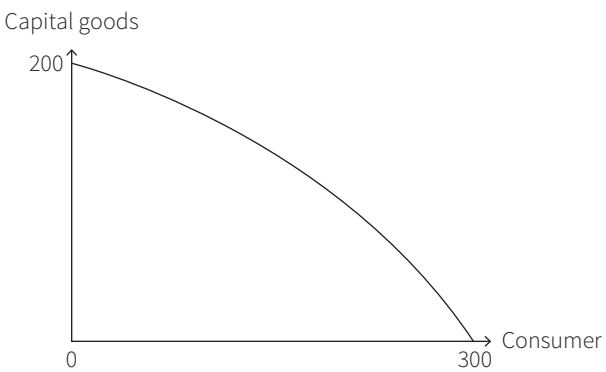


Fig. 4.1: A production possibility curve

KEY TERM

Production possibility curve: a curve that shows the maximum output of two types of products and combination of those products that can be produced with existing resources and technology.

TIP

Make sure you draw a PPC to each axis – do not leave a gap.

4.2 Production points

While a PPC shows what is the maximum amount that can currently be produced, a production point shows what is being produced or what may be produced in the future.

Any point inside the curve means there is not full use of resources. Point X on Figure 4.2 shows output is being produced where there are unemployed resources.

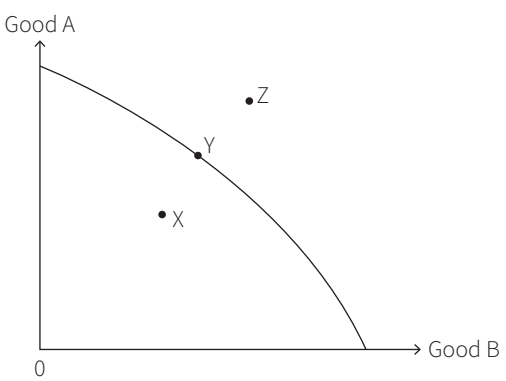


Fig. 4.2: A production possibility curve and production points

LINK

Chapter 29.2 Recession (causes and consequences)

A point anywhere on the curve, such as point Y, means that maximum use is being made of resources. This is an efficient output. There are not enough resources to produce outside the limit set by the PPC. So a point such as Z is not currently attainable.

INDIVIDUAL ACTIVITY 1

Look at the graph and answer the questions.

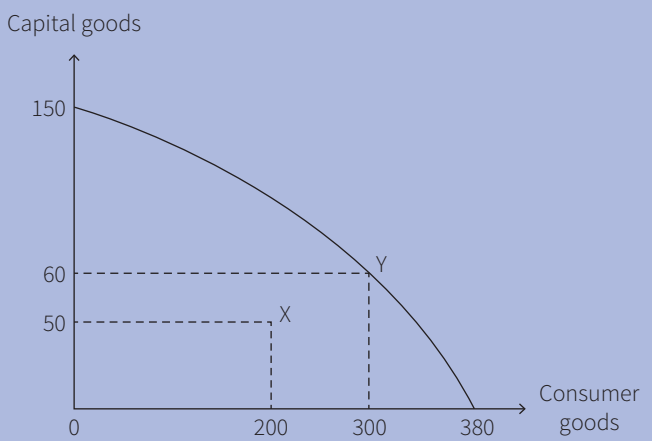


Fig. 4.3: A country's PPC

1. If a country is producing at point X, what is its output of capital goods and consumer goods?
2. If a country's output moves from point X to point Y, how many more capital goods and how many more consumer goods will it produce?
3. What is the maximum number of capital goods that can be produced if all resources are devoted to capital goods?

TIP

Be careful with labelling a PPC. The labels should show two types of products.

4.3 Movements along a PPC

A movement along a PPC shows that resources are being reallocated. It also shows the opportunity cost of that decision. Figure 4.4 shows a country initially deciding to produce 80 units of manufactured goods and 75 units of agricultural goods. If it then decides to produce 100 units of agricultural goods, it will have to switch resources away from producing manufactured goods. The diagram shows the reduction of output of manufactured goods to 60 units. In this case, the opportunity cost of producing 25 extra units of agricultural goods is 20 units of manufactured goods.

Fig. 4.4: A movement along the PPC

LINK

Chapter 3.2 Influence of opportunity cost on decision making

INDIVIDUAL ACTIVITY 2

Using Figure 4.5.

1. State the maximum number of capital goods the country can produce if it devotes all of its resources to making capital goods.
2. Calculate the opportunity cost of increasing the output of consumer goods from 80 to 90 units.

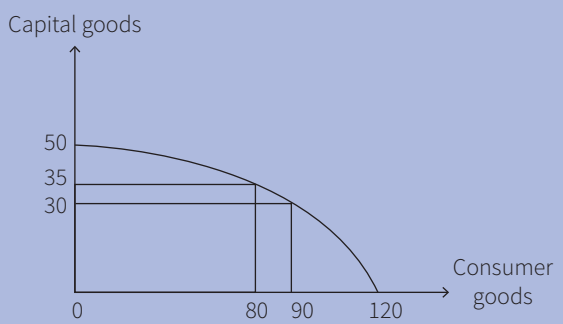


Fig. 4.5: A country's PPC

The shape of the PPC

PPCs are usually bowed outwards as shown in Figures 4.1–4.5. This is because the best resources are used first to produce a particular type of product. It was noted that in Figure 4.4 the opportunity cost of increasing the output of manufactured goods from 60 to 80 was 25 agricultural goods. To increase the output of manufactured goods by a further 20 to 100 would involve a higher opportunity cost of 75. The last resources switched from producing agricultural goods would have been the least suited to producing manufactured goods.

In the less common situation where resources are equally suited to producing both types of products, the opportunity cost remains constant. In this case, the PPC is shown as a straight line as shown in Figure 4.6.

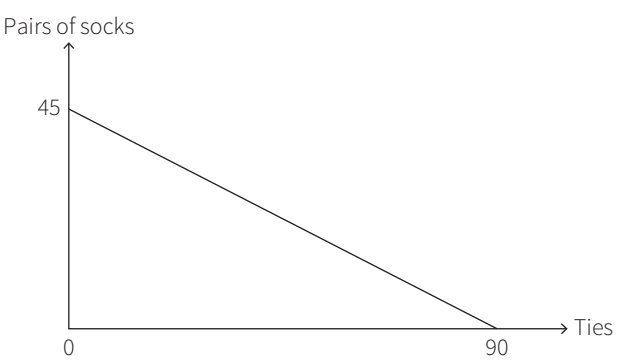


Fig. 4.6: A straight line PPC

The opportunity cost of producing 1 more pair of socks remains at 2 ties as the output of socks changes.

4.4 Shifts in a PPC

Causes of shifts in the PPC

The PPC will shift to the right, as shown in Figure 4.7, if there is an increase in the quantity or quality of resources. For example, if there is an increase in the size of the labour force, the maximum output that a country can produce will increase.

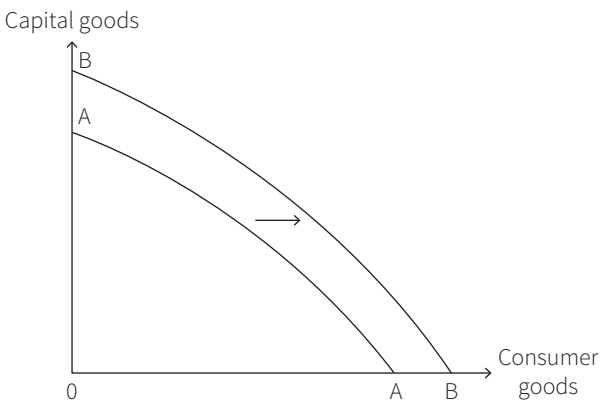


Fig. 4.7: A shift in a PPC

A shift to the left of the PPC will be caused by a reduction in the quantity or quality of resources.

GROUP ACTIVITY 1

In your group, discuss and decide whether the following will cause a shift of a country's PPC to the left or the right:

a advances in technology

b a rise in the retirement age

c improved education

d widespread floods

e worn out capital goods not being replaced.

Consequences of a shift in the PPC

A shift to the right of the PPC increases a country's productive potential. It will be capable of producing more. This is referred to as potential economic growth. To take advantage of this increased capacity, the extra or better quality resources have to be employed. Figure 4.8 shows both the PPC and the production point moving to the right. Output increases. A rise in a country's output is actual economic growth.

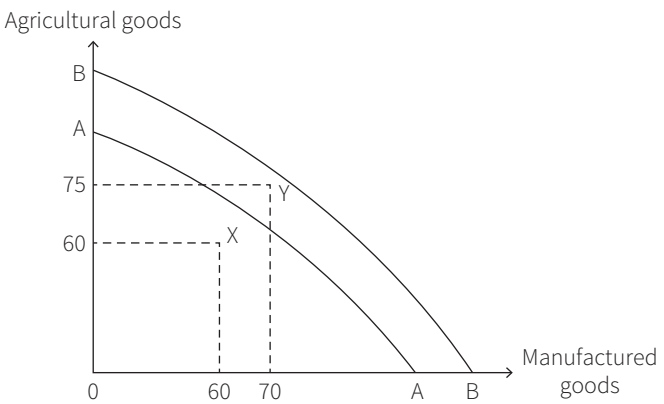


Fig. 4.8: Economic growth

LINK
Chapter 29.3 Economic growth (causes)

Summary

You should know:

- A PPC can be used to illustrate opportunity cost. It shows what can be produced with existing resources and current technology.
- A point inside a curve indicates unemployed resources, a point on the curve shows full use of resources and a point to the right of the curve is currently unattainable.
- A movement along a PPC shows a reallocation of resources and the opportunity cost involved.
- A bowed outwards PPC shows an increasing opportunity cost whereas a straight line PPC shows a constant opportunity cost.
- An increase in the quantity or quality of resources will cause a shift of the PPC to the right and an increase in productive potential.

Multiple choice questions

1 A country experiences a fall in unemployment. How would this be shown on a PPC diagram?

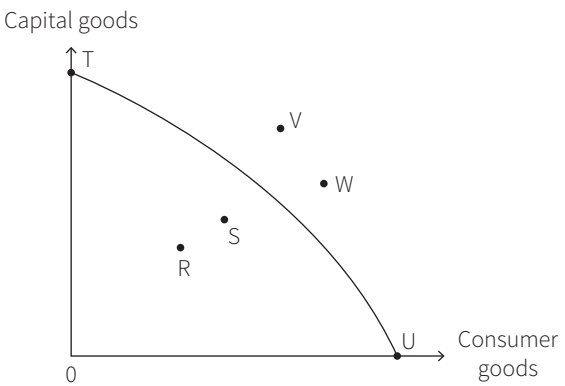
A A movement of the production point away from the curve

B A movement of the production point towards the curve

C A shift of the PPC to the left

D A shift of the PPC to the right

2 Which points in the diagram are attainable?



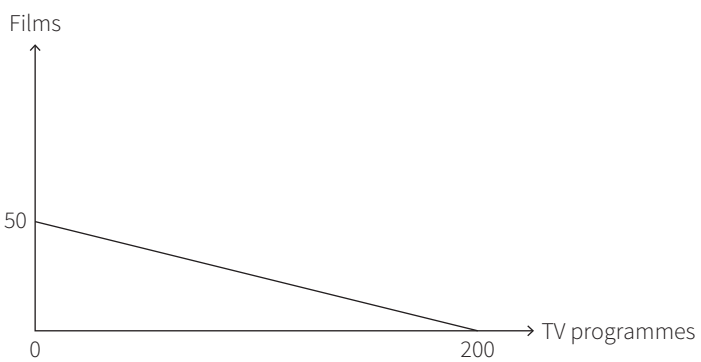
A R and S

B V and W

C R, S, T and U

D T, U, V and W

3 The diagram shows a country's PPC. What can be concluded from the shape of the PPC?



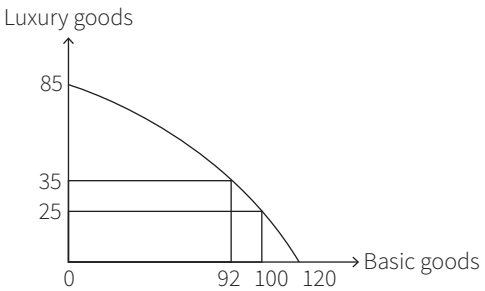
A All resources are equally good at producing films and TV programmes

B Resources cannot be switched between producing films and TV programmes

C The country is able to produce 50 films and 200 TV programmes

D TV programmes take more resources to produce them than films

4 Using the diagram, determine the opportunity cost of increasing the output of luxury goods from 25 to 35.



A 8 basic goods
B 10 luxury goods
C 25 luxury goods
D 92 basic goods

Four-part question

a What is the difference between a point inside and a point on a PPC? **(2)**
b Explain **two** causes of a shift in a PPC. **(4)**
c Analyse how a PPC illustrates scarcity, opportunity cost and efficiency. **(6)**

Exam-style questions

Multiple choice questions

1 What gives rise to the problem of scarcity?

A a lack of money
B an uneven distribution of income
C capital equipment being greater than labour
D wants exceeding resources

2 As an economy becomes richer, what happens to resources and wants?

	Resources	Wants
A	decrease	decrease
B	decrease	increase
C	increase	decrease
D	increase	increase

3 Which of the following is an example of the factor of production 'capital'?

A the money a farmer has borrowed to buy livestock
B the money a farmer has saved in the bank
C a farm worker
D a tractor

4 Which type of factor of production can be described as a 'natural resource'?

A capital
B entrepreneur
C labour
D land

5 A woman owns a TV which she bought for $300. She is considering buying a better model for $450. Her neighbour offers her $200 for her TV. What is the opportunity cost of her rejecting this offer?

A $100
B $200
C $300
D $450

6 A man presently works as a builder. His previous jobs included working as a farm labourer and a street trader. His next best-paid job is that of a carpenter, but he would rather choose to work as a gardener, if he was not a builder. What will be the opportunity cost of him working as a builder? Working as:

A a carpenter
B a farm labourer

C a gardener

D a street trader

7 What does a production possibility curve show?

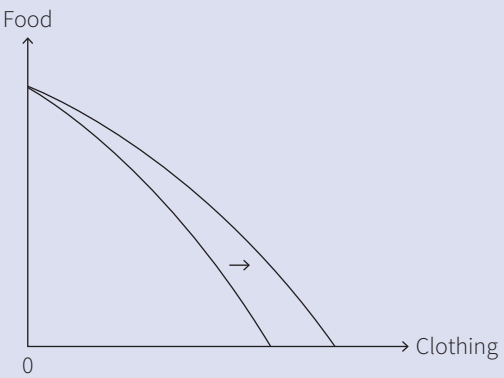
A the amount of capital and labour in a country

B the output of two products that can be produced with given resources

C the popularity of the two products

D the price of the two products that are produced with given resources

8 What could have caused the change in the shape of the production possibility curve (PPC) shown below?



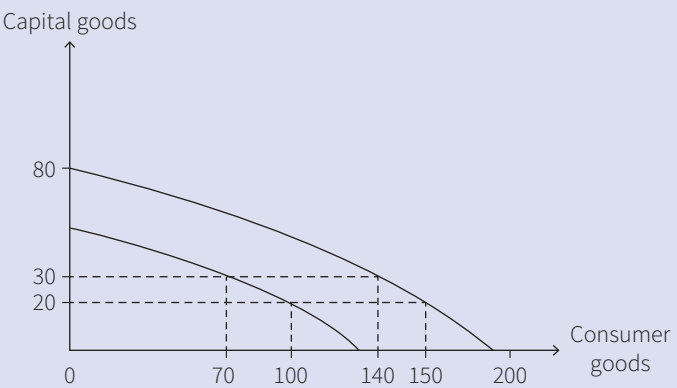
A advances in technology in the clothing industry

B an increase in the size of a country's labour force

C a change in consumer preferences towards clothing

D more resources being devoted to producing clothing

9 What is the change in the opportunity cost of increasing the output of capital goods from 20 to 30 when the PPC shifts to the right the diagram below?



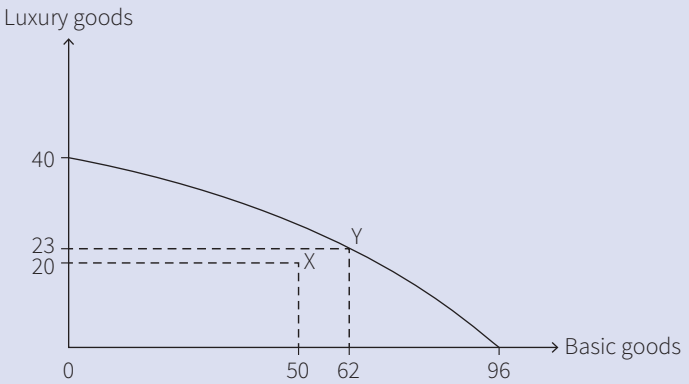
A a reduction of 10 consumer goods

B a reduction of 20 consumer goods

C a reduction of 30 consumer goods

D a reduction of 40 consumer goods

10 The diagram below shows a country producing at point X. What is the opportunity cost of moving production to point Y?



A 34 basic goods

B 17 luxury goods

C 12 basic goods and 3 luxury goods

D zero goods

Data response question

Study the source material carefully and then answer Question 1.

Source material: Agricultural output in Africa

The output of more fertilisers and better irrigation have contributed to higher agricultural output for each unit of land in Africa in recent years. More significant, however, has been the increase in the quantity of land used to grow crops. For example, in 1975 12% of land was used for agriculture. By 2015 this had increased to 25%. In Mauritania, agricultural expansion is particularly high at 7% per year.

Despite the rise in agricultural output, the quantity of high quality food that people would like to consume is not keeping pace with the rise in population in all African countries. Africa's population is set to double by 2050, which will increase even further the demand for food. As incomes increase in Africa, the desire for a range of products is increasing. People in Africa are, for example, wanting more and better housing. Indeed, the desire for housing usually outstrips the growth in resources devoted to housing. People constantly strive for better living standards. The expansion of the house building industry is encouraging some farm workers to switch to working in the building industry. Changes in the pattern of demand are causing not only agricultural workers, but also other workers to change their occupation and where they work.

Agricultural output can fluctuate quite significantly as it can be influenced by, for example, floods, droughts and heatwaves. The contribution of agricultural output varies between countries. For example, in 2015 agriculture accounted for only 2% of South Africa's output, but 21% of Nigeria's output.

The total output that a country produces is influenced by the size of the labour force. The table shows the size of the labour force and total output for a group of selected African countries.

Country	Labour force (millions)	Total output (US$ billions)
Ethiopia	49	62
Ghana	12	38
Mali	6	13
Nigeria	58	481
South Africa	21	315

The labour force and total output of five African countries

1 Referring to the source material in your responses, complete all parts of Question 1.

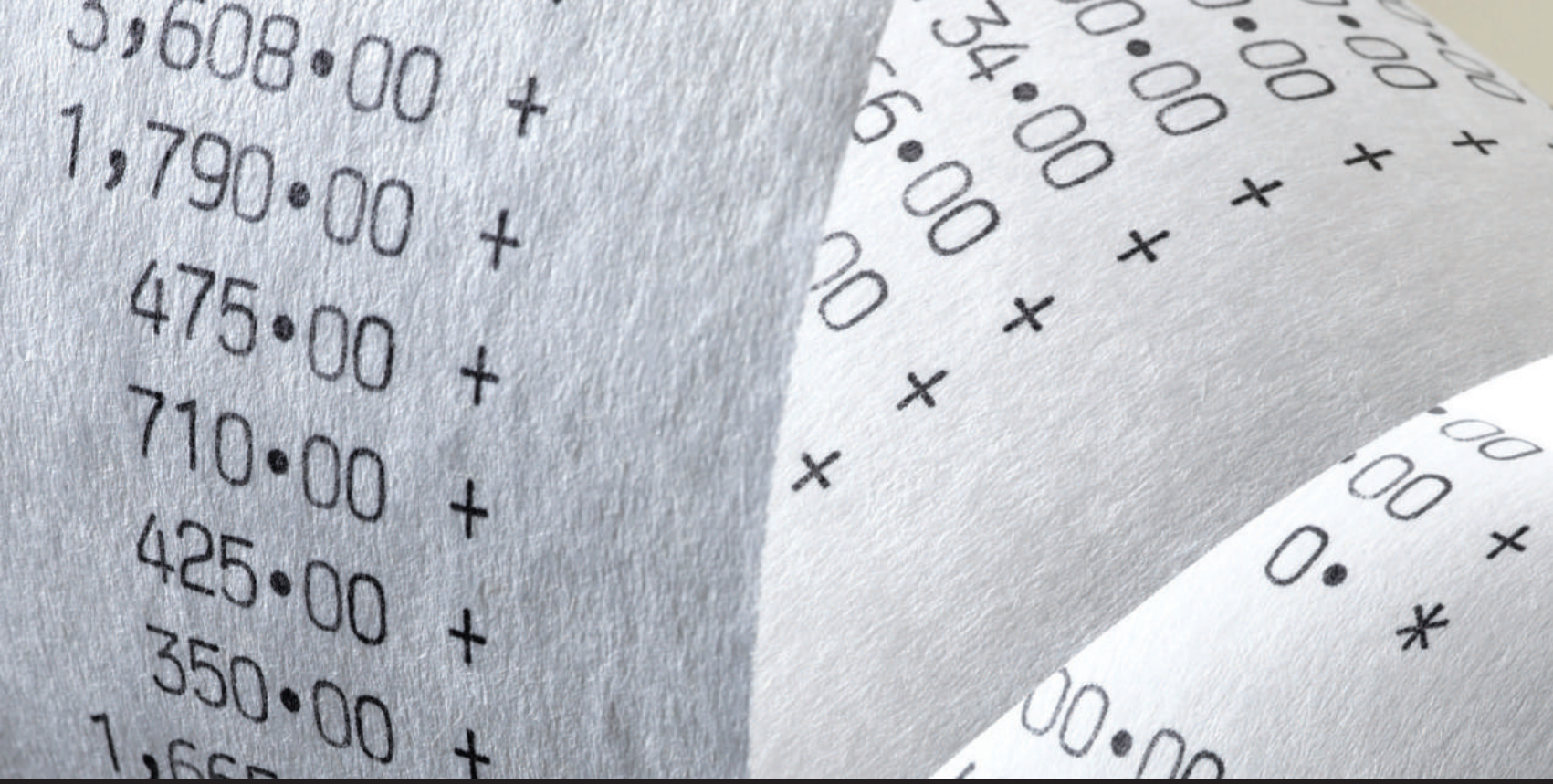
- **a** Calculate the value of agricultural output in South Africa in 2015. **(1)**
- **b** Identify **two** reasons why the productivity of land has increased in Africa. **(2)**
- **c** Explain the opportunity cost of working on a farm. **(2)**
- **d** Analyse, using a PPC, the effect on an economy of a flood. **(4)**
- **e** Explain **two** examples of the economic problem. **(4)**
- **f** Analyse the relationship between the size of a country's labour force and its output shown in the table. **(5)**
- **g** Discuss whether or not skilled workers are likely to be more occupationally and geographically mobile than unskilled workers. **(6)**
- **h** Discuss whether or not an increase in the output of food will reduce the output of other products. **(6)**

Four-part question

1 In late 2016 an Australian firm announced that it would be starting a project to use the power of waves off the coast in Cornwall in the UK to generate electricity. More entrepreneurs are becoming interested in making use of wave power which is a free good. More labour is likely to be employed in the industry. The quantity of labour has increased in recent years.

- **a** Define an *entrepreneur*. **(2)**
- **b** Explain the difference between a free good and an economic good. **(4)**
- **c** Analyse, using a PPC, the effect on an economy of an increase in the supply of labour. **(6)**
- **d** Discuss whether or not the quantity of labour in the UK is likely to increase in the future. **(8)**

SECTION 2
The allocation of resources



Chapter 5
Microeconomics and macroeconomics

Learning objectives

By the end of this chapter you will be able to:

- explain the difference between microeconomics and macroeconomics
- identify the decision makers involved in microeconomics and macroeconomics

Introducing the topic

We all contribute to economic activity. For example, if you buy an ice cream you will increase the sales of ice cream. This is likely to result in more ice cream being produced. As economists, we look at the behaviour and performance of individual markets. We also look at how an economy as a whole, consisting of all markets, operates. This may be on a national or a global scale.

5.1 The difference between microeconomics and macroeconomics

Economics is divided into **microeconomics** and **macroeconomics**. As their names suggest, microeconomics is concerned with the small scale and macroeconomics with the large scale.

Microeconomics

Microeconomics is the study of the behaviour and decisions of households and firms, and the performance of individual **markets**.

Microeconomic topics include changes in the earnings in a particular occupation and changes in the output in the car industry.

Macroeconomics

Macroeconomics is the study of the whole economy. Macroeconomic topics include changes in the number of people employed in the economy and changes in the country's output.

The connection between macroeconomics and microeconomics

Many of the concepts used in microeconomics are also used in macroeconomics, but on a different scale. For example, you will later examine the demand for an individual product, and the total demand for all goods and services in an economy. You will also look at why the price of a particular product may change and why the price level in an economy may change.

Microeconomic decisions and interactions add up to the macroeconomic picture. This means that changes in the microeconomy affect changes in the macroeconomy and vice versa. For example, a reduction in the output of the car industry may result in a rise in the country's unemployment rate. Similarly, a decision by the government to cut income tax rates may result in households buying more cars.

The output of cars influences a country's total output

KEY TERMS

Microeconomics: the study of the behaviour and decisions of households and firms, and the performance of individual markets.

Macroeconomics: the study of the whole economy.

Market: an arrangement which brings buyers into contact with sellers.

TIP

It is useful to give an example when defining either microeconomics and macroeconomics.

GROUP ACTIVITY 1

In your group, discuss and decide whether the following are microeconomic or macroeconomic questions:

a Why are pilots paid more than cabin crew?

b Why is the diamond industry expanding in China?

c Why is the output of India greater than the output of Sri Lanka?

d Why does Pakistan import more than it exports?

e What can be done to reduce road congestion in Paris?

5.2 Decision makers in microeconomics and macroeconomics

KEY TERMS

Economic agents: those who undertake economic activities and make economic decisions.

Private sector: firms owned by shareholders and individuals.

The decision makers in microeconomics and macroeconomics are sometimes referred to as **economic agents**. They are households, firms and government. Households are buyers, also known as consumers, savers and workers. Firms are business concerns that produce goods and services, and employ workers and other factors of production. Government is the system which rules a country or region. A government produces and provides some products, provides financial benefits, and taxes and regulates the **private sector**.

The aims of decision makers

Households, as consumers, seek low prices and good quality products. As workers, they want good working conditions and high pay. As savers they want their money to be safe and to give a good return. Firms in the private sector usually try to make as much profit as possible. A government wants a strong economy. It may have objectives for the macroeconomy, including full employment of labour. It may also seek to improve the performance of individual markets by, for example, taxing the sale of cigarettes.

INDIVIDUAL ACTIVITY 1

Decide, in each case, whether the following are likely to be an aim of a government, households or firms:

a A shorter working week

b Many different sellers of consumer goods

c Many different sources of raw materials

d Higher tax revenue

Summary

You should know:

- Microeconomics is concerned with what is happening in individual markets, whereas macroeconomics is concerned with what is happening in the whole economy.
- Decision makers are also known as economic agents. They are households, firms and government.

Multiple choice questions

1 Households' decision to buy less rice reduced the profit of rice farmers. Which branch of economics covers these two changes?

	Households' decision	Rice farmers' profits
A	Microeconomics	Microeconomics
B	Microeconomics	Macroeconomics
C	Macroeconomics	Macroeconomics
D	Macroeconomics	Microeconomics

2 Who influences the total output of the Egyptian economy?

	Egyptian households	Egyptian firms	The Egyptian government
A	No	No	Yes
B	No	Yes	Yes
C	Yes	Yes	No
D	Yes	Yes	Yes

Four-part question

a Define *microeconomics*. **(2)**

b Explain whether decisions in microeconomics involve an opportunity cost. **(4)**

Chapter 6
The role of markets in allocating resources

Learning objectives

By the end of this chapter you will be able to:

- explain the key allocation decisions
- describe the nature of the market system
- analyse how the price mechanism provides answers to the key allocation decisions

Introducing the topic

The US economy is changing. For example, shale oil production and high-technology industries are expanding, while the production of the glass manufacturing and postal service industries are declining. There are also changes in how products are being made. For instance, more and more capital goods are being used in the US car industry. In addition, the richest Americans are consuming more goods and services, while some of the poorest Americans are consuming less. Why are these changes occurring? Who makes the decisions and how are they put into effect?

6.1 The three key allocation decisions

All economies are changing and they all have to answer three fundamental economic questions:

- What to produce?
- How to produce it?
- Who is to receive the products produced?

These questions arise because of the basic economic problem of unlimited wants exceeding finite resources. A decision has to be made as to how the economy's resources are to be allocated. For example, how many resources should be devoted to healthcare, how many to leisure goods and services and how many to defence?

Once this decision has been taken, an economy has to decide on how the products are to be produced, for example whether a large number of workers should be used in agriculture or more reliance be placed on capital equipment. Finally, because as many goods and services cannot be produced as are required to satisfy the needs of everyone, a decision has to be reached as to how the products should be distributed. Should products be distributed to people according to their needs or their ability to earn a high income?

The answers to the above questions differ in different economic systems. An **economic system** covers the institutions, organisations and mechanisms in a country that influence economic behaviour and determine how resources are allocated.

6.2 Different economic systems

There are three main economic systems. One is a **planned economic system**. An economy which operates a planned economic system is called a planned, centrally planned, command or collectivist economy. It is an economy in which the state (government) makes the decisions about what to produce, how to produce it and who receives it. The state owns all, or at least most, of the land and capital, and employs workers. The state gives instructions, sometimes called **directives**, to state-owned enterprises (SOEs) on what to produce and how to produce it. The state determines who gets the products made, both by deciding on the remuneration paid to the workers and by controlling prices. It will usually provide basic necessities and important products such as housing, transport and education free of cost or at a low price.

The other two types of economic system are a market economic system and a **mixed economic system**. This chapter focuses on the **market economic system**. (Chapter 15 looks at the mixed economic system.)

6.3 A market economic system

An economy which operates a market economic system is known as a market economy or a free enterprise economy. It is one in which buyers, also known as consumers, determine what is produced. They signal their preferences to sellers through the **price mechanism**.

In a market economic system, government intervention is minimal. Land and capital are privately owned. Private sector firms decide how to produce the products consumers want to buy. Some firms, for instance steel firms, may employ large amounts of capital relative to labour. They are said to be **capital-intensive**. Others, for example hotels, may use a relatively high number of workers in comparison with the amount of capital used. They rely mainly on labour and so are described as **labour-intensive**. In making their decision on

KEY TERMS

Economic system: the institutions, organisations and mechanisms that influence economic behaviour and determine how resources are allocated.

Planned economic system: an economic system where the government makes the crucial decisions, land and capital are state-owned and resources are allocated by directives.

Directives: state instructions given to state-owned enterprises.

Mixed economic system: an economy in which both the private and public sectors play an important role.

Market economic system: an economic system where consumers determine what is produced, resources are allocated by the price mechanism and land and capital are privately owned.

Price mechanism: the way the decisions made by households and firms interact to decide the allocation of resources.

Capital-intensive: the use of a high proportion of capital relative to labour.

Labour-intensive: the use of a high proportion of labour relative to capital.

which factors of production to employ, firms will seek to achieve the lowest cost method of production, while producing the highest quality of products. This may also involve the use of new, more productive capital equipment, to replace older equipment.

In a market economic system, those who earn the highest incomes exercise the maximum influence on what is produced. Those workers whose skills are in highest demand and are the most successful entrepreneurs will be able to buy more products than those whose skills are in low demand and are unsuccessful entrepreneurs.

INDIVIDUAL ACTIVITY 1

Discuss how the following questions are answered in a market economic system:

a What is produced?

b How is output produced?

c Who gets the products produced?

6.4 The role of the price mechanism

KEY TERMS

Demand: the willingness and ability to buy a product.

Supply: the willingness and ability to sell a product.

Market equilibrium: a situation where demand and supply are equal at the current price.

Market disequilibrium: a situation where demand and supply are not equal at the current price.

In a market economic system, resources move automatically as a result of changes in price. In turn, price changes are determined by the interaction of the market forces of **demand** and **supply**. Resources switch from products that are becoming less popular to those which are becoming more popular. Consumers signal to producers their changes in demand through the prices they are prepared to pay for different products. Figure 6.1 shows the effect of demand for bananas increasing whilst demand for apples decreases.

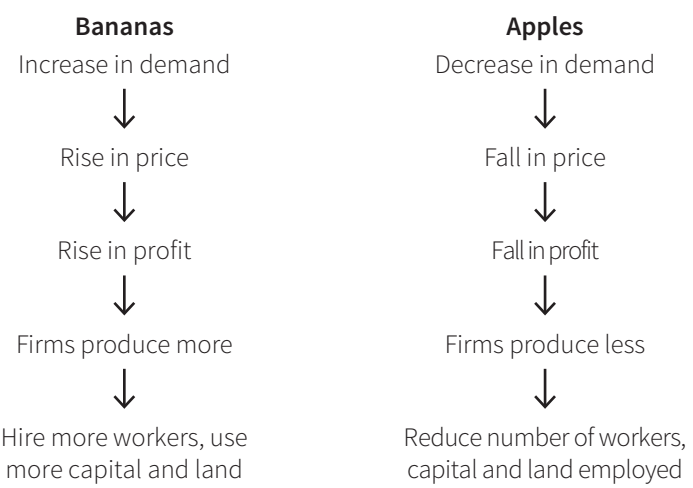


Fig. 6.1: Changes in resource allocation in a market economy

The price mechanism provides an incentive for producers to respond to changes in market conditions. If consumers want more of a product, they will be willing to pay more for it. The higher price offered will encourage firms to produce the product in larger quantities as then the firms make more profit. Indeed, the use of resources is changing all the time in response to changes in consumer demand and costs of production. **Market equilibrium** moves to **market disequilibrium** and back to market equilibrium again.

The price mechanism also rations out products when their supply falls short of demand. If, for example, a disease attacks a potato crop, supply will decrease. Initially this may result in a shortage with demand exceeding supply. This shortage, however, will drive up prices until

the market again clears with demand equalling supply. The price mechanism sorts out who will receive the products by raising the price. The people who will be able to consume the product will be those who are able to pay the higher price.

An auction, at which the product goes to the highest bidder

TIP

Remember the key role of the price mechanism and demand and supply in the market economy.

GROUP ACTIVITY 1

In your group, decide in each case which product would be likely to have the higher price and why:

a the price of a ticket at the football World Cup and a ticket at a local non-league game

b gold and rice

c the services of a dentist and the services of a cleaner.

Summary

You should know:

- The three key allocation decisions are what to produce, how to produce it and for whom to produce.
- The main factors that determine the type of economic system are: who decides what is produced, how resources are allocated, and who owns the capital and land.
- The market system relies on the price mechanism to allocate resources.
- Price will rise if demand increases or supply decreases.

Multiple choice questions

1 What are the three questions faced by all economies?

A What to produce, when to produce it and who receives it

B What to produce, how to produce it and who receives it

C Where to produce, how to produce and when to produce

D Where to produce, when to produce and why to produce

2 What encourages firms to produce what consumers demand?

A The chance to earn a high profit

B The chance to experience high unit costs of production

C The desire to attract new firms into the industry

D The desire to keep revenue as low as possible

3 How are resources allocated in a market economy?

A By directives

B By the price mechanism

C By directives or the price mechanism

D By directives and the price mechanism

4 What is meant by market forces?

A The interaction of demand and supply

B The interaction of firms and the government

C The power of producers

D The power of the state

Four-part question

a Identify **two** key resource allocation decisions. **(2)**

b Explain the difference between market equilibrium and market disequilibrium. **(4)**

c Analyse the functions of the price mechanism. **(6)**

Chapter 7
Demand

Learning objectives

By the end of this chapter you will be able to:

- define demand
- draw a demand curve
- recognise the link between individual and market demand in terms of aggregation
- distinguish between extensions and contractions in demand
- analyse the causes of shifts in the demand curve

Introducing the topic

Suppose you found that the price of your favourite snack had been reduced, would you buy more and, if so, why? What happens to the quantity of ice cream people buy in hot weather? Why do people in poor countries own fewer cars than people in rich countries? Economists answer these and other questions by examining the influences on demand.

KEY TERM

Demand: the willingness and ability to buy a product.

7.1 Definition of demand

When economists discuss **demand**, they are discussing effective demand. They define this as the *willingness* and *ability* to buy a product. An individual may want a product, but if they cannot afford it, their demand is not effective as a firm will not be prepared to sell it to them.

7.2 Demand and price

Demand and price are inversely related. This means demand will rise as price falls and fall as price rises. A higher price will mean that fewer people will be able to afford the product. They will also be less willing to buy it and will be more likely to switch to rival products. So, as price rises, the willingness and ability to buy a product falls.

KEY TERMS

Market demand: total demand for a product.

Aggregation: the addition of individual components to arrive at a total amount.

7.3 Individual and market demand

Economists study individual and, more commonly, **market demand**. As its name suggests individual demand is the amount of a product an individual would be willing and able to buy, at different prices. Market demand is the total demand for a product at different prices. It is found by adding up each individual's demand at different prices. This totalling up of the demand of all of the potential buyers is sometimes referred to as **aggregation**.

A demand schedule

A demand schedule lists the different quantities demanded of a product, at different prices over a particular time period. Table 7.1 shows a demand schedule for tickets on trains from Station X to Station Y.

Price ($)	Quantity demanded
50	2200
45	2500
40	3000
35	3800
30	5000
25	7000

Table 7.1: Daily demand for train tickets from Station X to Station Y.

A demand curve

The information from a demand curve can be plotted on a diagram. Price is measured on the vertical axis (the line going up) and quantity demanded on the horizontal axis (the line going across). Figure 7.1 shows the information in Table 7.1 as a diagram.

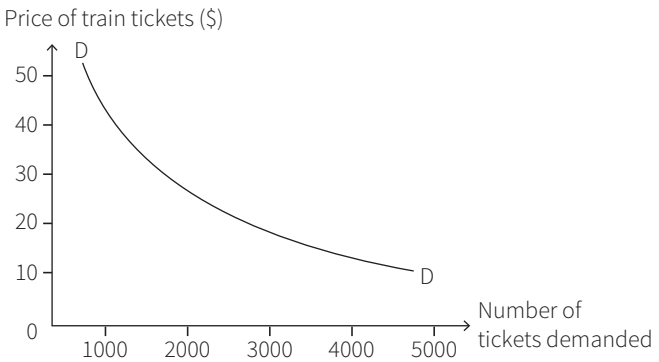


Fig. 7.1: Daily demand for train tickets from Station X to Station Y

TIP

In answering questions on demand and supply, it is useful to draw diagrams. A diagram must be accurately and fully labelled. It should also be large enough and clear. It is advisable to use at least one-third of an A4 size page for drawing a diagram. Also, explain the diagram in your text.

This demand curve and the demand schedule on which it is based do not show the demand over the full range of prices. It is possible to do this. Figure 7.2 illustrates such a curve.

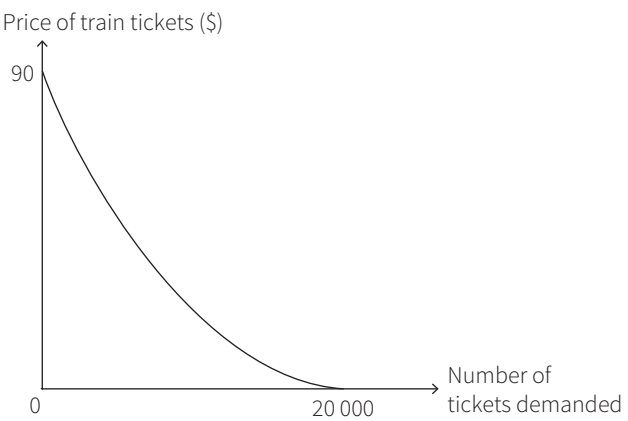


Fig. 7.2: A demand curve over the full range of prices

The curve shows the price, $90, at which people would stop buying tickets – the service is priced out of the market. It also shows how many tickets people would want, if they were provided free of cost. As it is unusual for firms to charge either such a high price that demand is zero or a zero price, demand curves are often not taken to the axes.

To save time and for the sake of clarity, economists also often draw demand curves as straight lines as shown in Figure 7.3 (they are still referred to as curves!).

Such lines do not usually show exact quantities and prices, but can be used to illustrate the relationship between demand and price, and the effect of price changes on demand.

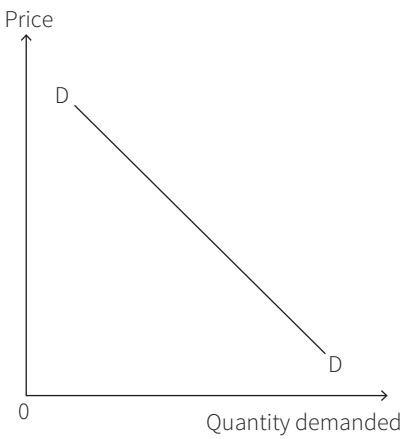


Fig. 7.3: A straight line demand curve

INDIVIDUAL ACTIVITY 1

Using the following demand schedule, plot the demand curve for rooms in a hotel in Delhi.

Price ($)	Number of rooms
800	10
700	20
600	35
500	55
400	80
300	110

KEY TERM

Extension in demand: a rise in the quantity demanded caused by a fall in the price of the product itself.

The effect of a change in price on demand

As noted earlier, a fall in the price of a product is likely to lead to a rise in demand for it. Economists refer to this as **extension in demand**, expansion in demand or an increase in the quantity demanded. Seeing the words 'an extension in demand', 'expansion in demand' or 'an increase in the quantity demanded' will tell an economist that the cause of the change in demand is a change in the price of the product itself. Such a change can be illustrated on a demand curve, as shown in Figure 7.4.

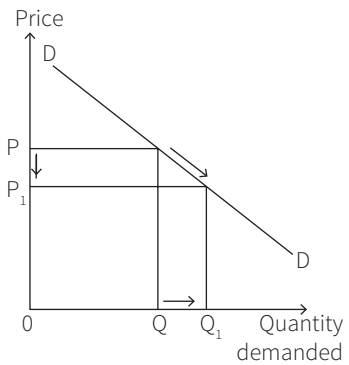


Fig. 7.4: An extension in demand

The diagram shows that a fall in price from P to P_1 has caused the demand to extend from Q to Q_1. In contrast, a rise in price will cause a **contraction in demand** which can also be referred to as a decrease in quantity demanded.

Figure 7.5 shows the impact of a rise in price. Demand contracts from Q to Q_1 as a result of a rise in price from P to P_1.

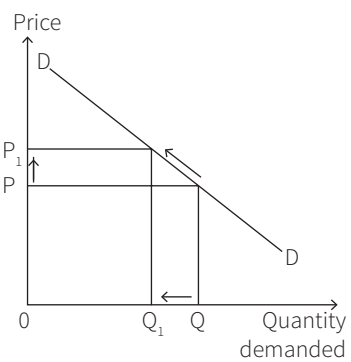


Fig. 7.5: A contraction in demand

KEY TERM

Contraction in demand: a fall in the quantity demanded caused by a rise in the price of the product itself.

INDIVIDUAL ACTIVITY 2

A shop changes the price of a can of soft drink from $3 to $2 and, as a result, demand changes from 40 cans a day to 50 cans.

a Illustrate this change on a demand curve.

b Identify whether demand has extended or contracted.

7.4 Conditions of demand

Price is not the only influence on demand. There are a range of causes for **changes in demand** – either more or less of a product being demanded – even if price is unchanged. These reasons are sometimes known as the conditions of demand. For example, in a period of hot weather there is likely to be an **increase in demand** for ice cream. The quantities demanded will rise at each and every price. A new demand schedule can be drawn up to show the higher level of demand.

KEY TERMS

Changes in demand: shifts in the demand curve.

Increase in demand: a rise in demand at any given price, causing the demand curve to shift to the right.

Price per ice cream	Quantities demanded per day	
$	Original demand	New demand
5	2000	4000
4	3000	5000
3	4000	6000
2	5000	7000
1	6000	8000

Table 7.2: Demand for ice cream

On a diagram, an increase in demand is shown by a shift to the right of the demand curve. Figure 7.6 shows that at any given price, a larger quantity is demanded. At a price of $2, for example, initially 5000 ice creams would be demanded a day. The hot weather would encourage people to buy more ice creams. Demand would increase to 7000.

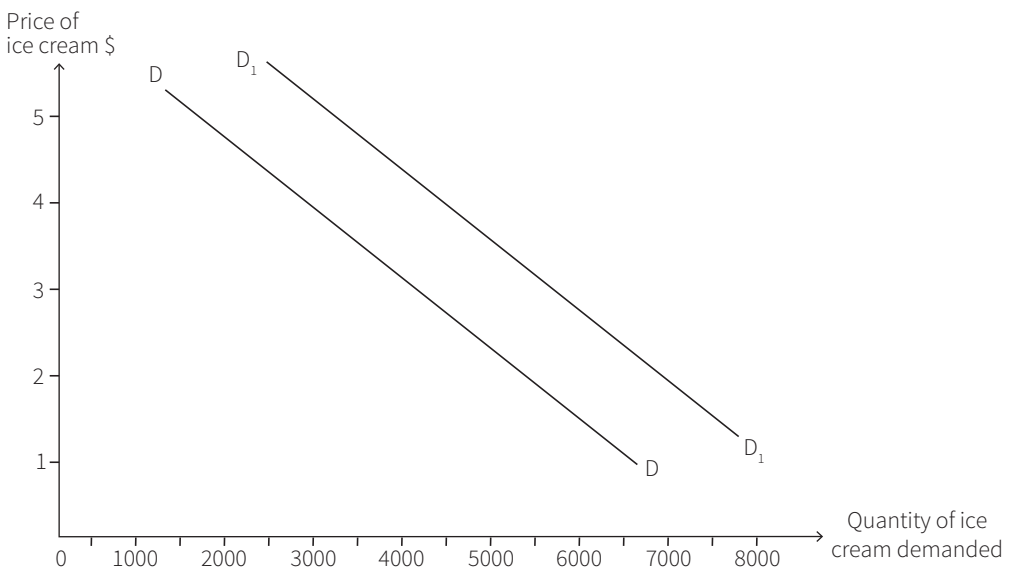


Fig. 7.6: An increase in demand

KEY TERM

Decrease in demand: a fall in demand at any given price, causing the demand curve to shift to the left.

Besides increasing, demand for ice cream may decrease too. During periods of cold weather, consumers tend to demand less ice cream. Such a **decrease in demand** is illustrated by a shift to the left of the demand curve as shown on Figure 7.7.

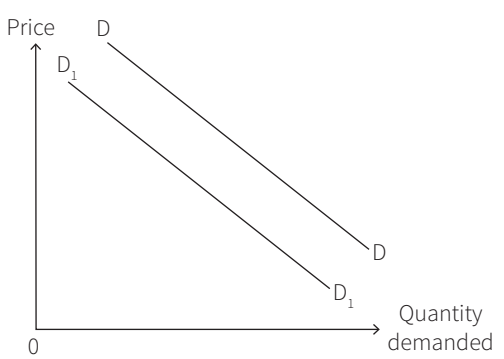


Fig. 7.7: A decrease in demand

There may be an increased demand for ice-cream on a warm day

TIP

Be careful to distinguish between a movement along a demand curve and a shift in demand. The only thing that can cause a movement *along* a demand curve is a change in the price of the product itself. Anything else that causes demand to change would be shown by a *shift* in the demand curve.

Causes of changes in demand

Among the factors that can cause consumers to demand different quantities of a product, even if the price has not changed, are changes in income, changes in the price of related products, advertising campaigns, changes in population, and changes in taste and fashion.

Changes in income

An increase in income raises consumers' purchasing power. For most of the products, this results in an increase in demand. In fact, so common is this positive relationship between income and demand that such products are referred to as **normal goods**. A few products have a negative relationship with income. These products are called **inferior goods**. When income rises, demand falls as consumers switch to better quality products.

KEY TERMS

Normal goods: a product whose demand increases when income increases and decreases when income falls.

Inferior goods: a product whose demand decreases when income increases and increases when income falls.

INDIVIDUAL ACTIVITY 3

In China, household income grew by an average of 8% between 2010 and 2016. This contributed to a rise in demand for mobile (cell) phones, making China the world's largest mobile phone market.

a Illustrate the change in demand for mobile phones in China on a diagram.

b Is a mobile phone a normal or an inferior good? Explain your answer.

KEY TERMS

Substitute: a product that can be used in place of another.

Complement: a product that is used together with another product.

Ageing population: an increase in the average age of the population.

Birth rate: the number of live births per thousand of the population in a year.

Changes in the price of related products

An increase in demand can be caused by a rise in the price of a **substitute** product. If the price of holidays to Morocco rises, demand for holidays to Mauritius may increase. Demand will also increase if the price of a **complement** falls. For example, if travel insurance becomes cheaper, demand for holidays to most of the destinations will increase.

GROUP ACTIVITY 1

Decide whether each of the following is a substitute or a complement to a Volkswagen car:

a public transport

b petrol

c a Ford car.

Advertising campaigns

A successful advertising campaign will increase demand for a product. It may bring the product to the notice of some new consumers and may encourage some existing consumers to purchase more quantities of the product.

Changes in population

The population of a country can change in terms of both size and age composition. If there is an increase in the number of people in the country, demand for most products will increase. If there is an **ageing population**, with people living longer, and a fall in the **birth rate**, demand for wheelchairs is likely to increase while demand for toys is likely to decrease.

Changes in taste and fashion

Certain products are particularly influenced by changes in taste and fashion. These include food, clothes and entertainment. A rise in vegetarianism in a number of countries has caused the demand for meat to decrease. Health reports can have a significant influence on demand for particular foods. Designer trainers have become more popular in many countries, and the rise in the popularity of football in Asia and Africa has increased demand for football shirts and football merchandise.

Other factors

A range of other factors can influence demand for a product. It was mentioned earlier that a change in weather conditions will affect the demand for ice cream. Such a change would also shift the demand curve for umbrellas, soft drinks and clothing.

Expectations about future price rises can influence current demand. Demand for oil increased during the revolution in Libya in 2011. This was because it was widely anticipated that such an event would disrupt supplies of oil and raise prices. Special events can have an impact on demand for a particular product. For instance, the Summer Olympic Games held in Rio in 2016 may have increased the demand for holidays in Brazil.

TIP

When exploring the causes of changes in demand for a product avoid providing 'mirror image' comments. For example, if you have explained why the demand for smartphones may increase if incomes rise, you do not need to explain why demand would decrease if income falls.

GROUP ACTIVITY 2

Young people throughout the world are turning away from buying newspapers to new forms of media for their information and entertainment. For example, in the UK, in 1973, 80% of 15–24 year olds read a (paid for) national newspaper. By 2015, this percentage had fallen to 21%. Studies have found a number of reasons for this trend. These include young people having less time, less need, less interest and less opportunity to buy newspapers, and declining importance of newspapers for them. There are now many rivals to newspapers including social media and the internet, television and radio. Those young people who do buy newspapers tell the researchers that they read them more for entertainment than news.

a What percentage of 15–24 year olds did not read a 'paid for' national newspaper in 2015?

b Explain two reasons why young people throughout the world are demanding fewer newspapers.

c Does the extract suggest that social media and the internet is a substitute for or a complement to newspapers? Explain your answer.

d Discuss two ways through which newspaper publishers could raise demand for their newspapers.

GROUP ACTIVITY 3

Decide in each case whether the following would cause an extension in demand, a contraction in demand, an increase in demand or a decrease in demand for fish in a country:

a A rise in the price of fish

b A report that eating fish reduces heart diseases

c Net emigration

d A fall in the price of chicken

Summary

You should know:

- A fall in the price of a product will make people more willing and able to buy it.
- A demand schedule lists, and a demand curve shows, the different quantities of a product that would be demanded at different prices.
- An extension in demand is caused by a fall in the price of the product whereas a contraction is caused by a rise in price.
- Causes of a change in demand include changes in income, changes in the price of substitutes and complements, advertising campaigns, changes in the size and age composition of the population and changes in taste and fashion.
- An increase in demand shifts the demand curve to the right.
- A decrease in demand shifts the demand curve to the left.

Multiple choice questions

1 What is measured on the vertical axis of a demand diagram?

A Cost
B Price
C Quantity demanded
D Wants

2 What happens to people's willingness and ability to buy a product when its price falls?

	Willingness	Ability
A	increases	increases
B	increases	decreases
C	decreases	decreases
D	decreases	increases

3 An increase in demand is represented by:

A A movement down the demand curve
B A movement up the demand curve
C A shift to the left of the demand curve
D A shift to the right of the demand curve

4 The price of a product rises. What will happen to the demand for its complement?

A It will contract
B It will extend
C It will decrease
D It will increase

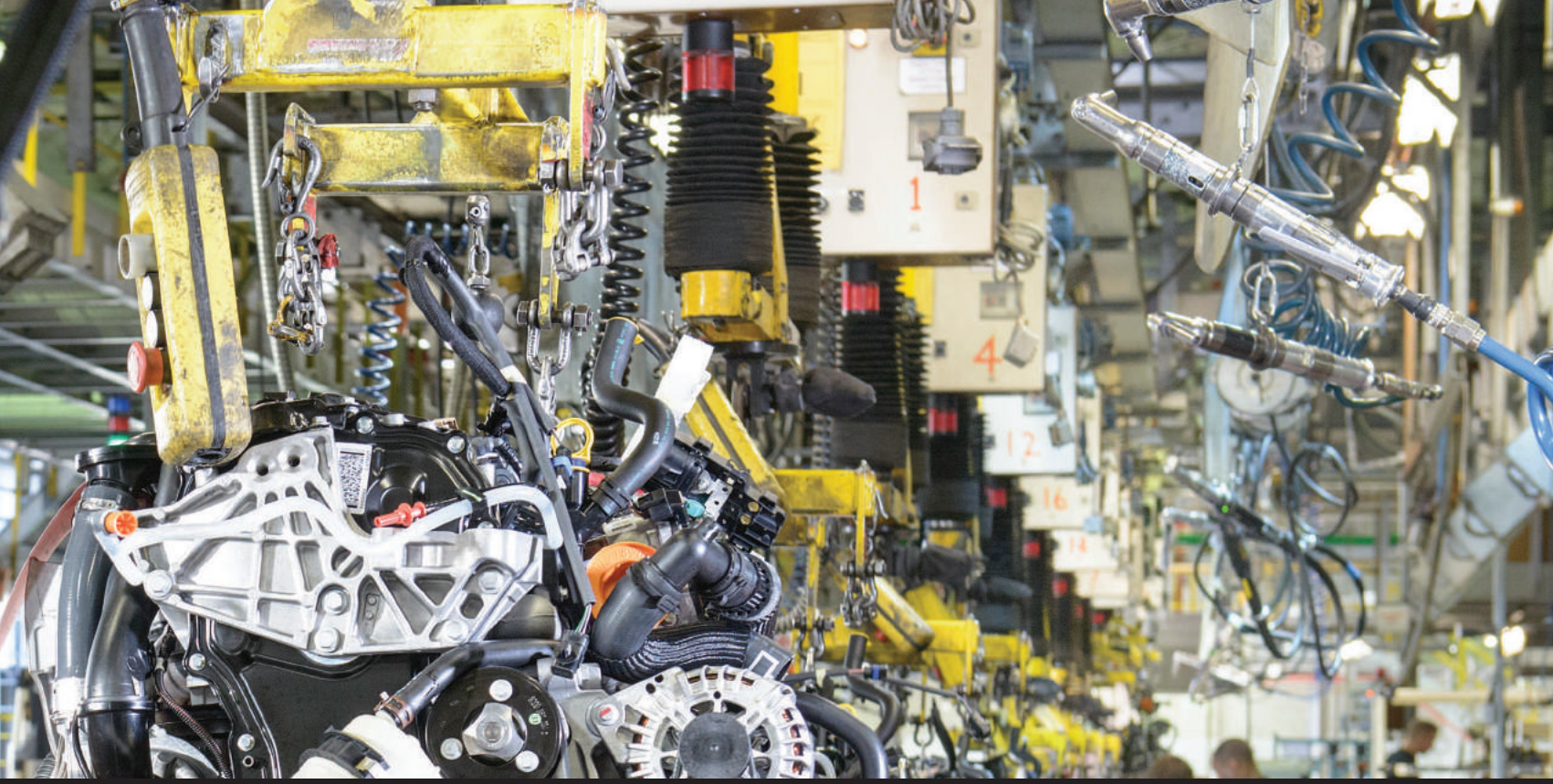
Four-part question

a Define *market demand*. **(2)**

b Explain the relationship between demand and a change in price. **(4)**

c Analyse the effect of a rise in the price of tea on the demand for milk and the demand for coffee. **(6)**

d Discuss whether or not the demand for bicycles will rise in the future. **(8)**



Chapter 8
Supply

Learning objectives

By the end of this chapter you will be able to:

- define supply
- distinguish between extensions and contractions in supply
- recognise the link between individual and market supply in terms of aggregation
- analyse the causes of shifts in the supply curve

Introducing the topic

Have you seen a typewriter? In the past, there were many firms producing typewriters. Now there are very few typewriters produced. In contrast, the number of coffee shops is increasing and more and more trainers are being sold. Why does the supply of products change?

KEY TERM

Supply: the willingness and ability to sell a product.

8.1 Definition of supply

Supply is the willingness and ability to sell a product. It is important not to confuse supply with production. Supply is influenced by the amount produced, but is not the same as production. This is because some of the amount produced today may be stored, in order to be sold at a later date. Conversely, it is possible that some of the output offered for sale today may have come from stocks.

8.2 Supply and price

In contrast to demand, supply is directly related to price. A rise in price will lead to a rise in supply. Firms will be more willing to supply the product, as they are likely to earn higher profits. They will also be able to supply more as the higher price will make it easier for them to cover the costs of production.

KEY TERM

Market supply: total supply of a product.

8.3 Individual and market supply

Individual supply is the supply of one plant/firm, whereas **market supply** is the total supply of a product supplied by all the firms in the industry. Market supply is calculated in a similar way to market demand. The quantities that would be supplied by each firm at each price are added up. So aggregation of the supply of each individual firm gives the market supply.

A supply schedule

A supply schedule records the different quantities supplied at different prices. Table 8.1 shows a supply schedule for train tickets from Station X to Station Y.

Price ($)	Quantity supplied
50	6000
45	5000
40	4300
35	3800
30	3600
25	3500

Table 8.1: Daily supply of train tickets from Station X to Station Y

From this information, a supply curve can be plotted as shown in Figure 8.1.

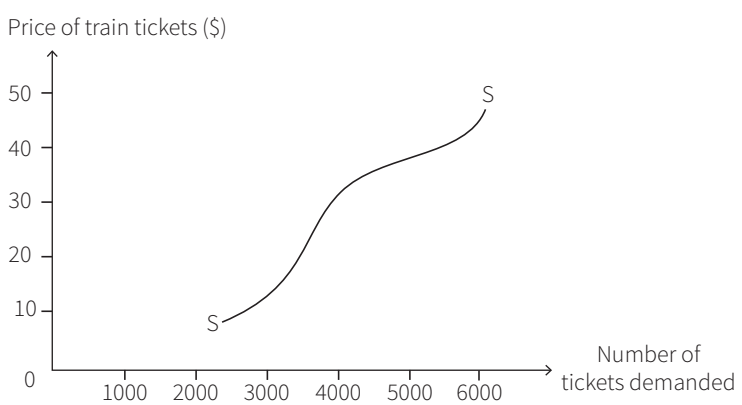


Fig. 8.1: Daily supply of train tickets from Station X to Station Y

As with demand curves, supply curves can be drawn as straight lines.

Train travel

The effect of a change in price on supply

Again, as with demand, a change in price of the product will cause an **extension in supply** (expansion or an increase in the quantity supplied) or a **contraction in supply** (a decrease in the quantity supplied). This time, however, it is a rise in price which will cause an extension in supply and a fall in price which will cause a contraction in supply. Figure 8.2 illustrates both these changes.

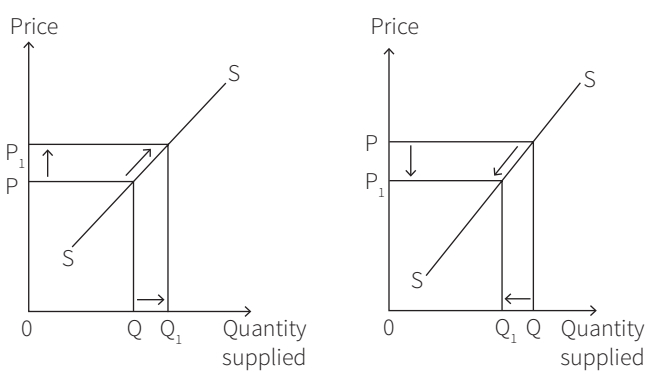


Fig. 8.2: (a) An extension in supply (b) A contraction in supply

KEY TERMS

Extension in supply: a rise in the quantity supplied caused by a rise in the price of the product itself.

Contraction in supply: a fall in the quantity supplied caused by a fall in the price of the product itself.

TIP

Do not confuse supply and demand curves. Remember supply curves slope up from left to right, whilst demand curves slope down from left to right.

INDIVIDUAL ACTIVITY 1

Pakistan's paper industry is growing. In 2017 there were approximately 100 manufacturing firms producing writing paper, printing paper, wrapping paper and chip board. One well-known firm is Pakistan's Paper Products Ltd.

a What effect would a rise in the supply of Pakistan's Paper Products have on the market supply of paper?

b What would cause an extension in the supply of paper?

KEY TERM

Change in supply: changes in supply conditions causing shifts in the supply curve.

8.4 Conditions of supply

A **change in supply** occurs when the conditions facing suppliers alter. In such a situation, a different quantity will be offered for sale at each price. For instance, a good period of weather may increase the rice crop in a country. This will make it possible for rice farmers to supply more. Table 8.2 shows the original supply schedule in the previous season and the supply schedule in the current season.

Price per tonne (rupee)	Supply in previous season (millions of tonnes)	Supply in current season (millions of tonnes)
1000	110	130
900	100	120
800	90	100
700	80	90
600	70	80
500	60	70

Table 8.2: Rice production

Shifts in the supply curve

KEY TERMS

Increase in supply: a rise in supply at any given price, causing the supply curve to shift to the right.

Decrease in supply: a fall in supply at any given price, causing the supply curve to shift to the left.

While a change in the price of the product itself causes a movement along the supply curve, a change in supply conditions causes the supply curve to shift. An **increase in supply** is illustrated by a shift to the right as shown in Figure 8.3. At each and every price, more is supplied.

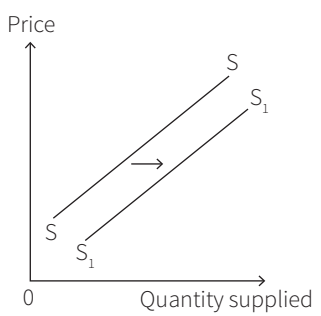


Fig. 8.3: An increase in supply

In contrast, a **decrease in supply** results in a movement of the supply curve to the left, as shown in Figure 8.4. Now whatever the price, less will be supplied.

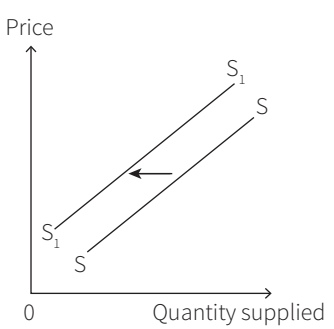


Fig. 8.4: A decrease in supply

Causes of changes in supply

Among the factors that can cause changes in supply are changes in the costs of production, improvements in technology, taxes, subsidies, weather conditions, health of livestock and crops. It is also affected by the price of other products. Disasters, wars, discoveries of new sources and depletion, also contribute to this change of commodities.

INDIVIDUAL ACTIVITY 2

Since 2006, the world production of rice has increased from 600 million tonnes to 748 million tonnes in 2016. This has largely been the result of breakthroughs in seed generation and cultivation techniques.

a Draw a diagram showing the change in supply of rice since 2006.

b Identify two factors that can cause the supply curve for rice to move in the opposite direction.

Changes in the costs of production

If it costs more to produce a product, suppliers will want a higher price for it. For example, if it costs $200 to produce four units, firms would supply four units at a price of $50 per unit. If costs rise to $280, they would be prepared to sell only four units, at a price of $70 each.

The two basic reasons for a change in costs of production are

- a change in the price of any of the factors of production
- a change in their productivity.

If, for example, the price of raw materials used increases, it will be more expensive to produce a product. One cost which changes frequently is the cost of transporting goods. This is because the price of oil used in petrol, is itself very volatile.

A rise in the productivity of a factor of production will reduce unit cost. For example, if a worker who is paid $200 a week produces 100 units, the labour cost per unit is $2. If the worker's productivity rises to 200, the labour cost per unit would fall to $1.

An increase in the wages paid to workers by itself would raise the costs of production and, therefore, cause a decrease in supply. However, if the increase in wages is accompanied by an equal rise in productivity, then **unit costs** and supply will remain unchanged.

KEY TERM

Unit cost: the average cost of production. It is found by dividing total cost by output.

INDIVIDUAL ACTIVITY 3

A firm employs ten workers and pays $50 a day to each of them. The total output of ten workers is 100 units initially. The firm then raises the wage rate to $60 a day and the output per worker rises to 20.

a Showing your workings, calculate:

i the initial unit cost

ii the new unit cost.

b Will supply decrease, stay the same or increase? Explain your answer.

KEY TERMS

Improvements in technology: advances in the quality of capital goods and methods of production.

Direct taxes: taxes on the income and wealth of individuals and firms.

Indirect taxes: taxes on goods and services.

Tax: a payment to the government.

Subsidy: a payment by a government to encourage the production or consumption of a product.

Improvements in technology

This influence is closely related to the previous one, since **improvements in technology** raise the productivity of capital, reduce costs of production and result in an increase in supply. It has become much cheaper to produce a range of products due to the availability of more efficient capital goods and methods of production. For example, whilst world demand for personal computers has increased in recent years, the supply has increased even more as it has become easier and cheaper to produce them.

Taxes

Direct taxes on firms, including corporation tax, and **indirect taxes**, such as VAT and excise duty, are effectively a cost that firms have to pay. They are likely to try to recover at least some of this extra cost by raising the price paid by the consumers. Nevertheless, the firms themselves are largely responsible for passing on the revenue from the **tax** to the government. A rise in the rate of an existing tax or the imposition of a new tax, will make it more expensive to supply a product and hence will reduce supply. In contrast, a cut in a tax or its removal will increase supply.

Subsidies

A **subsidy** given to the producers provides a financial incentive for them to supply more. Besides being paid by the consumer, they are now being paid by the government also.

As a result, the granting of a subsidy will cause an increase in supply whilst the removal of a subsidy will cause a decrease in supply.

Most countries, throughout the world, subsidise some agricultural products. A number of them also give subsidies to new and important industries.

Less frequently, a government may also give a subsidy to consumers, to encourage them to buy a particular product. For example, grants may be given to households to enable them to buy houses. In this case, of course, it is demand and not supply conditions which change.

Weather conditions and health of livestock and crops

Changes in weather conditions affect particular agricultural products. A period of good weather around harvest time is likely to increase the supply of a number of crops. Very dry, very wet or very windy weather, however, is likely to damage a range of crops and thereby reduce their supply. The amount of agricultural products produced and available for supply is also influenced by the health of livestock and crops. The outbreak of a disease, such as foot and mouth in cattle or blight in crops, will reduce supply.

Prices of other products

Firms often produce a range of products. If one product becomes more popular, its price will rise and supply will extend. In order to produce more of this product, the firm may divert the resources from the production of other products. The prices of these other products have not changed but the firm will now supply less at each and every price. For example, if a farmer keeps cattle and sheep, a rise in the price and profitability of lamb is likely to result in the farmer keeping fewer cows and a corresponding decrease in the supply of beef.

Besides the products being supplied in a competitive environment, they can also be jointly supplied. This means that one product is automatically made when another product is produced, that is one product is a by-product of the other one. For example, when more beef is produced, more hides will be available to be turned into leather.

In the case of products which are jointly supplied, a rise in the price of one product will cause an extension in supply of the other product. Firms make more of one product because its price has risen. The supply of the other product will increase automatically. More is produced, not because it has risen in price but because the price of a related product has risen.

Disasters and wars

Natural disasters, such as hurricanes, floods and wars, can result in a significant decrease in supply. The earthquake and resulting tsunami that hit Japan in March 2011 caused extensive damage to infrastructure and killed workers. These effects reduced the supply of a range of products.

Discoveries and depletions of commodities

The supply of some commodities, such as coal, gold and oil, is affected by discoveries of new sources. For example, the discovery of new oilfields will increase the supply of oil. In contrast, if coal is used up in some mines, the supply of coal will be reduced in the future.

GROUP ACTIVITY 1

Decide whether the following would cause a decrease in the demand, an increase in the demand, a decrease in the supply or an increase in the supply of gold bracelets:

a a decrease in incomes
b a decrease in the cost of the equipment used to mine gold
c an increase in the price of silver bracelets
d an increase in the tax on gold
e the discovery of new deposits of gold
f a strike by gold mining workers

Summary

You should know:

- A fall in the price of a product will make suppliers less willing and able to sell it.
- Supply schedules and supply curves show the relationship between the price and the quantity supplied.
- A fall in price causes a contraction in supply, whereas a rise in price causes an extension in supply.
- Causes of a change in supply include changes in the costs of production, improvements in technology, taxes, subsidies, weather conditions, health of livestock and crops, changes in the price of related products, disasters, wars and discoveries of new sources and depletion of commodities.
- An increase in supply shifts the supply curve to the right.
- A decrease in supply moves the supply curve to the left.
- An increase in supply will lower the price and cause an extension in demand.
- A decrease in supply will raise the price and cause a contraction in demand.

Multiple choice questions

1 What is the relationship between demand and price and the relationship between supply and price?

	Demand and price	Supply and price
A	directly related	directly related
B	directly related	inversely related
C	inversely related	directly related
D	inversely related	inversely related

2 What does a market supply curve show?

A The proportion of total output produced by different firms in the industry

B Proportion of total output sold

C The relationship between the total quantity supplied and demand for the product

D The relationship between the total quantity supplied and the price of the product

3 How would an increase in supply be illustrated?

A A movement up the supply curve

B A movement down the supply curve

C A shift to the left of the supply curve

D A shift to the right of the supply curve

4 What would cause an increase in the supply of milk?

A An increase in the price of cattle feed

B An increase in wages paid to farm workers

C The introduction of a subsidy to cattle farmers

D The outbreak of a disease affecting cows

Four-part question

a Define *supply*. **(2)**

b Explain why supply and price are positively related. **(4)**

c Analyse, using a supply diagram, the effect of an improvement in the quality of the training car workers receive on the supply of cars. **(6)**

d Discuss whether or not changes in demand or changes in supply have a larger influence on the market for tomatoes. **(8)**

Chapter 9
Price determination

Learning objectives

By the end of this chapter you will be able to:

- use demand and supply schedules and curves to establish equilibrium prices and sales in a market
- use demand and supply schedules and curves to identify disequilibrium prices and excess demand and supply in a market

Introducing the topic

Market traders of fresh fish are sometimes left with unsold fish at the end of the day which they have to throw away. The next day they are likely to lower the price they charge. On other occasions, they may find that they are selling out of fish very quickly. In this circumstance, they may decide to raise their price. In practice, it can be difficult for producers to know what is the appropriate price to charge and there may have to be adjustments to eliminate shortages and surpluses.

9.1 How prices are determined

Consumers want low prices, whilst sellers want high prices. So how is the price of a product determined? In some cases, there is direct bargaining between buyers and sellers. Buyers often haggle with market traders, seeking to drive the price down, and the traders aim to keep the price relatively high. In other cases, the bargaining is more indirect. Firms estimate and then charge what they think is the equilibrium price, that is the price where demand and supply are equal. If they find that they cannot sell all of their output at this price, they will lower it. If, on the other hand, they find that consumers want to buy more than what they are offering for sale at this price, they will raise the price.

9.2 Market equilibrium

Equilibrium price

KEY TERM

Equilibrium price: the price where demand and supply are equal.

Equilibrium price is also sometimes referred to as the *market clearing price*. This is because it is the price where demand and supply are equal, and so there are no shortages or surpluses of the product. The equilibrium price of a product can be found by comparing the demand and supply schedules of that product, and seeing where demand and supply are equal. Table 9.1 uses the information previously given on train tickets in Chapters 7 and 8.

Price ($)	Quantity demanded	Quantity supplied
50	2200	6000
45	2500	5000
40	3000	4300
35	3800	3800
30	5000	3600
25	7000	3500

Table 9.1: The daily demand for and supply of train tickets from Station X to Station Y

In this case the equilibrium price is $35, since at this point demand and supply are equal.

The equilibrium price can also be found by examining a demand and supply diagram. It occurs where the demand and supply curves intersect.

Figure 9.1 shows that the equilibrium price is P and the equilibrium quantity is Q. Prices will stay at P and sales at Q until demand and supply conditions change.

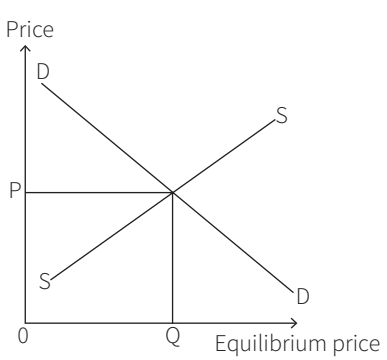


Fig. 9.1: Equilibrium price

9.3 Moving from market disequilibrium to market equilibrium

Market forces move price towards the equilibrium. If a firm sets the price above the equilibrium level, it will not sell all of the products it offers for sale – there will be a surplus (**excess supply**). To ensure the firm sells all of the products it wants to, it will lower price until the market clears, with the quantity demanded equalling the quantity supplied. Figure 9.2 shows a market initially being in a state of **disequilibrium** with supply exceeding demand.

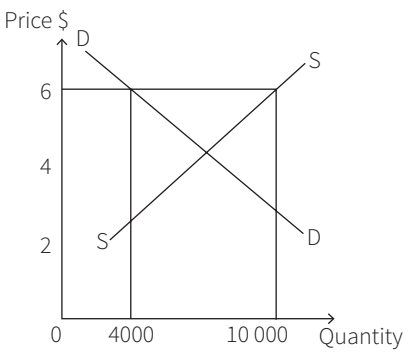


Fig. 9.2: Supply exceeding demand

KEY TERMS

Excess supply: the amount by which supply is greater than demand.

Disequilibrium: a situation where demand and supply are not equal.

TIP

It is useful to draw a demand and supply diagram when explaining how prices move from disequilibrium towards equilibrium.

At $6, the firm is willing and able to sell 10 000 products, but consumers buy only 4000. This leaves 6000 unsold products. As a result price will fall, causing demand to extend and supply to contract until price reaches the equilibrium level. Figure 9.3 shows this adjustment.

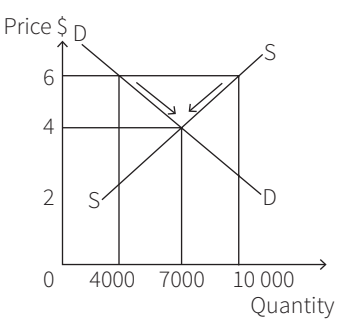


Fig. 9.3: Return to equilibrium

KEY TERM

Excess demand: the amount by which demand is greater than supply.

Market forces will also move the price, if it is initially set below the equilibrium level. In this case, there will initially be a shortage of the product with demand exceeding supply (**excess demand**) as shown in Figure 9.4.

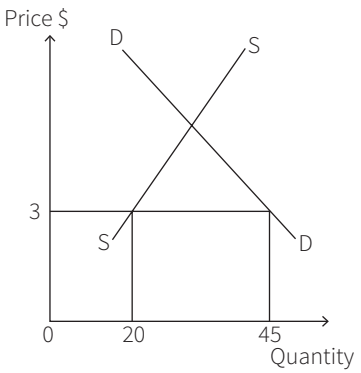


Fig. 9.4: Demand exceeding supply

Some consumers anxious to buy the product will be willing to pay a higher price and suppliers recognising this excess demand will raise the price. Figure 9.5 shows the price being pushed up to the equilibrium level of $5.

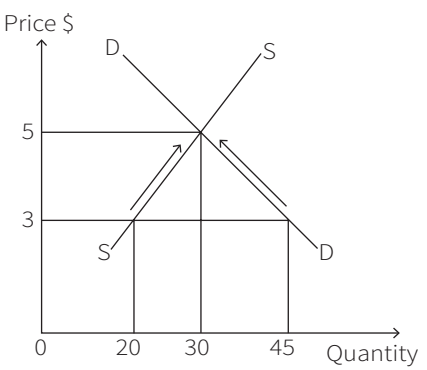


Fig. 9.5: Return to equilibrium

TIP

When drawing diagrams to show a market moving from disequilibrium to equilibrium include arrows to show the movements along the demand and supply curves.

INDIVIDUAL ACTIVITY 1

As the 2014 FIFA World Cup Brazil approached, sales of Brazilian football shirts increased not only in Brazil, but also in a number of other countries. Two weeks before the competition started, shops in London and Sao Paulo reported that demand for shirts was outstripping supply.

a On a demand and supply diagram, illustrate the market for Brazilian football shirts in Sao Paulo two weeks before the 2014 World Cup.

b What would you have expected to happen to the price of Brazilian football shirts in Sao Paulo in this situation? Explain your answer.

Summary

You should know:

- Price is determined by the interaction of demand and supply.
- At the equilibrium price, demand is equal to supply.
- If a market is in disequilibrium initially, market forces will move it towards equilibrium.
- If price is below the equilibrium price, there will be excess demand.
- If price is above the equilibrium price, there will be excess supply.

Multiple choice questions

1 Equilibrium price is the price at which:

A Everything that is produced is sold

B The amount consumers demand is equal to the amount sellers supply

C The number of buyers equals the number of sellers

D Supply exceeds demand

2 A market is experiencing a shortage. What will happen to price and sales as the market moves back to equilibrium?

	Price	Sales
A	Decrease	Fall
B	Decrease	Rise
C	Increase	Fall
D	Increase	Rise

3 If there is excess demand in a market, what is the relationship between price and equilibrium price, and sales and equilibrium sales?

	Price	Sales
A	above equilibrium	above equilibrium
B	above equilibrium	below equilibrium
C	below equilibrium	below equilibrium
D	below equilibrium	above equilibrium

4 A market is operating with a disequilibrium price. What must this mean?

A Demand and supply are not equal

B Shortages do not exist

C The price mechanism is not working

D There is no opportunity cost involved

Four-part question

a What may be the opportunity cost of buying apples? **(2)**

b Explain why the market for apples may be in disequilibrium. **(4)**

c Analyse, using a demand and supply diagram, why a surplus of apples will be eliminated. **(6)**

d Discuss whether or not consumers will benefit from a market being in disequilibrium. **(8)**

Chapter 10
Price changes

Learning objectives

By the end of this chapter you will be able to:

- explain how changes in market conditions cause price changes
- use demand and supply diagrams to illustrate changes in market conditions and the consequences for equilibrium price and sales

Introducing the topic

The price of food and vegetables can vary significantly from month to month. The price of calculators has been falling for a number of years, while the price of housing in many countries has been rising. What causes prices to change?

10.1 The effect of changes in demand

Price changes when the market conditions of demand and supply change. Changes in demand will cause a change in price and a movement along the supply curve. Figure 10.1 shows the effect of an increase in demand. Initially there is a shortage of *xy*. This shortage forces the price to move up.

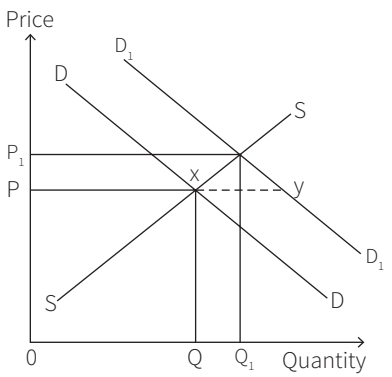


Fig. 10.1: The effect of an increase in demand

The higher price encourages an extension in supply until a new equilibrium price of P_1 is reached. At this price, demand and supply are again equal. In contrast, a decrease in demand will cause a fall in price and a contraction in supply. Figure 10.2 shows demand decreasing from DD to D_1D_1. With lower demand, there will be a surplus of unsold products at the initial price of P. This surplus pushes down the price. As a result, supply contracts until the new equilibrium price of P_1 and a new quantity of Q_1 are reached.

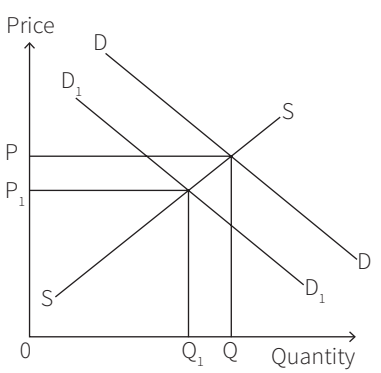


Fig. 10.2: The effect of a decrease in demand

INDIVIDUAL ACTIVITY 1

Use a demand and supply diagram to illustrate the effect of the following events on the market for economics books in India:

a a successful advertising campaign run in the country by publishers of economics books

b a decrease in the number of students studying economics.

10.2 The effect of changes in supply

Changes in supply cause a change in price and a movement along the demand curve. Initially, an increase in supply will cause a surplus. This surplus will drive down the price and result in an extension in demand, as shown in Figure 10.3.

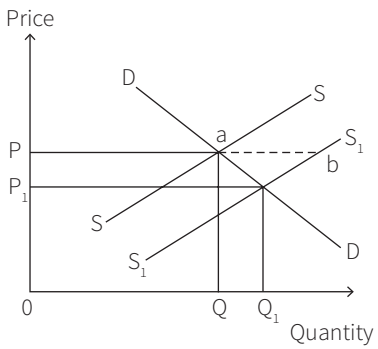


Fig. 10.3: The effect of an increase in supply

A decrease in supply will have the opposite effect. It will cause a rise in price, which in turn causes a contraction in demand, as shown in Figure 10.4.

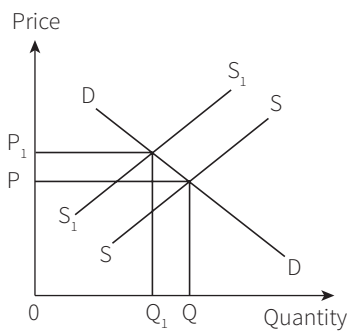


Fig. 10.4: The effect of a decrease in supply

TIP

When questions ask about the effect on the market of a product, make sure you cover demand, supply and price. Also, be careful to get the order of events right. For example, an increase in demand will first cause a rise in price and then an extension in supply.

INDIVIDUAL ACTIVITY 2

In each case, using a demand and supply diagram, analyse the effect on the market for Ghanaian football shirts.

a A fall in incomes in Ghana and neighbouring countries.

b A rise in the productivity of workers making Ghanaian football shirts.

c Ghana winning the World Cup.

d A tax being placed on Ghanaian football shirts.

e New, cheaper, but more efficient, machinery being introduced to make Ghanaian football shirts.

10.3 Changes in demand and supply

It is, of course, possible for both the conditions of demand and the conditions of supply to change at the same time. In this case, the impact on the market will depend not only on the direction of the changes, but also on the size of the changes. For example, a report may come out stating that eating apples is good for people's health and, at the same time, that good weather contributes to a record harvest. In this case, both demand and supply will increase. This will result in an increase in the quantity being bought and sold. The effect on price, however, will depend on relative strengths of shifts in demand and supply. Figure 10.5 shows the increase in demand being greater than the increase in supply. As a result, price rises.

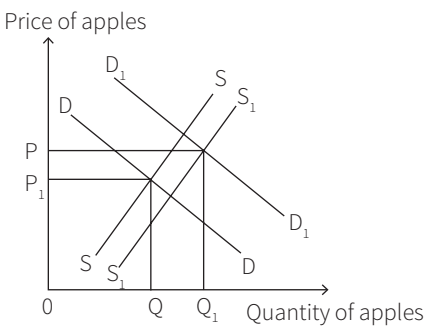


Fig. 10.5: The effect of demand increasing more than supply

In contrast, Figure 10.6 shows the increase in supply exceeding the increase in demand, causing price to fall.

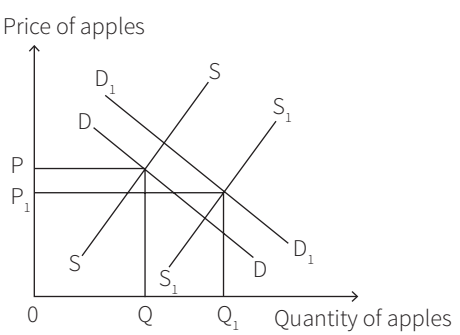


Fig. 10.6: The effect of supply increasing more than demand

GROUP ACTIVITY 1

Discuss why the price of agricultural products fluctuates more than the price of manufactured products.

INDIVIDUAL ACTIVITY 3

In 2013 and 2014, Vietnam suffered an outbreak of avian (bird) flu. Some chickens, suspected of having the disease, were slaughtered and some healthy chickens were vaccinated. This action was taken to prevent the spread of the disease not only among the chicken population but also to the human population.

Use a demand and supply diagram to analyse the effect this is likely to have on the market for chicken in Vietnam.

Summary

You should know:

- An increase in demand will raise price and cause an extension in supply.
- A decrease in demand will lower price and cause a contraction in supply.
- An increase in supply will lower the price and cause an extension in demand.
- A decrease in supply will raise the price and cause a contraction in demand.
- An increase in supply will lower the price and cause an extension in demand.
- A decrease in supply will raise the price and cause a contraction in demand.

Multiple choice questions

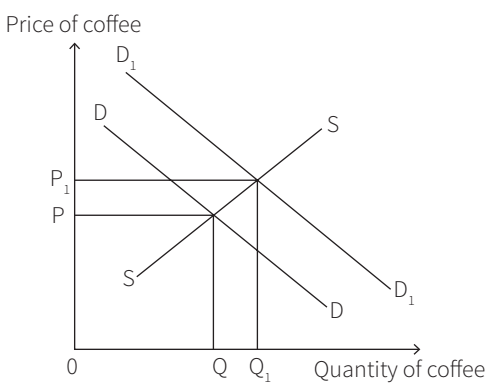
1 The diagram shows a change in the market for coffee. What could explain this change?

A A rise in the price of coffee

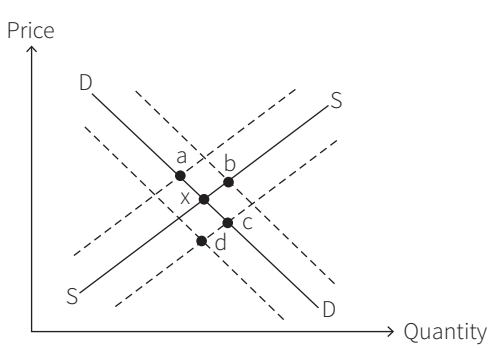
B A rise in the price of tea

C A successful advertising campaign for tea

D A health report indicating that drinking coffee can cause headaches

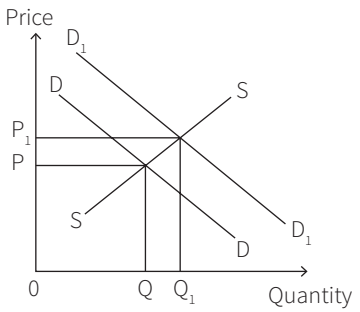


2 The diagram shows the demand for and supply of a product. The initial equilibrium is at point x. The cost of raw materials used to produce the product falls. Which point represents the new equilibrium?

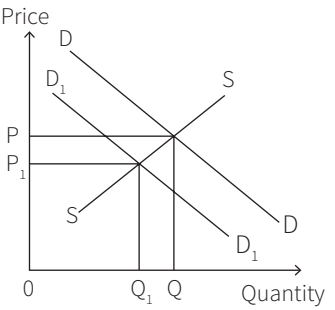


3 Which diagram best illustrates the effect of an increase in income on the market for an inferior good?

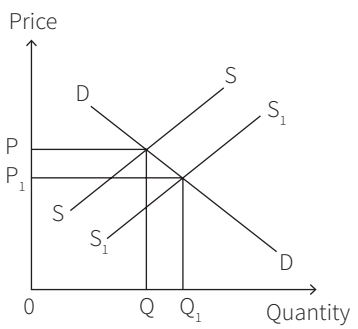
A



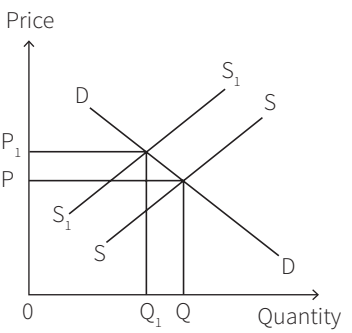
B



C



D



4 What effect would a decrease in supply of a product have on its price and demand?

	Price	Demand
A	decreases	contracts
B	decreases	extends
C	increases	contracts
D	increases	extends

Four-part question

a Identify **two** causes, apart from an increase in income, of an increase in demand for a product. **(2)**

b Explain why an increase in wages is likely to increase demand but may reduce supply. **(4)**

c Analyse, using a demand and supply diagram, the granting of a subsidy to the producers of a product. **(6)**

d Discuss whether or not the price of air travel is likely to rise in the future. **(8)**

Chapter 11
Price elasticity of demand

Learning objectives

By the end of this chapter you will be able to:

- define price elasticity of demand
- calculate price elasticity of demand
- interpret price elasticity of demand figures
- draw and interpret demand curves to show different price elasticity of demand
- explore the determinants of price elasticity of demand
- explain the relationship between price elasticity of demand and total spending on a product, and the revenue gained
- discuss the implications of price elasticity of demand for decision making by producers, consumers, producers and government

Introducing the topic

Would you expect a rise in the price of bread to have much impact on the demand for bread? Probably not and you are likely to think that the demand for a luxury watch will be more sensitive to price changes. Bread may be regarded to be a need, while a luxury watch is more of a want. Whether a product is a necessity or luxury is one influence on how responsive demand is to a change in price.

11.1 Definition of price elasticity of demand

KEY TERM

Price elasticity of demand (PED): a measure of the responsiveness of the quantity demanded to a change in price.

Price elasticity of demand (PED) measures the extent to which the quantity demanded changes when the price of the product changes. The formula used to calculate it is:

$$\text{PED} = \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in price}}$$

This is often abbreviated to:

$$\text{PED} = \frac{\%\Delta\text{QD}}{\%\Delta\text{P}}$$

11.2 Calculating PED

To work out elasticity of demand, it is necessary to first calculate the percentage change in quantity demanded and the percentage change in price. To do this, the change in quantity demanded is divided by the original demand and multiplied by 100. The same process is used to work out the percentage change in price. For example, the quantity demanded may rise from 200 to 240 as a result of price falling from $10 to $9. In this case, the percentage change in quantity demanded is:

$$\frac{\text{Change in demand}}{\text{Original quantity demanded}} \times 100 \text{ i.e. } \frac{40}{200} \times 100 = 20\%$$

The percentage change in price is:

$$\frac{\text{Change in price}}{\text{Original price}} \times 100 \text{ i.e. } \frac{-\$1}{\$10} \times 100 = -10\%$$

When these changes have been calculated, the percentage change in quantity demanded is divided by the percentage in price to give the PED. In this case, this is 20%/–10%. Remember that a division involving different signs gives a minus figure. Hence the PED is –2.

INDIVIDUAL ACTIVITY 1

In each case, calculate the PED:

a A fall in price from $4 to $3 causes the demand to extend from 60 to 105.

b Demand falls from 200 to 180 when price rises from $10 to $12.

c A reduction in price from $12 to $6 results in an extension in demand from 100 to 140.

11.3 Interpretation of PED

The PED figure provides two pieces of information. One is given by the **sign**. In the vast majority of cases, it is a minus. This tell us that there is an inverse relationship between the quantity demanded and price – a rise in price will cause a contraction in demand and a fall in price will cause an extension in demand.

The other piece of information is provided by the **size** of the figure. This indicates the extent by which demand will extend or contract when price changes. A figure of –2, for example, indicates that a 1% change in price will cause a 2% change in quantity demanded.

INDIVIDUAL ACTIVITY 2

Demand for a luxury product falls from 500 to 200 when price rises from $2000 to $2200.

a Calculate the PED.

b In this case, by what percentage would demand contract, if the price rose by 1%?

11.4 Elastic and inelastic demand

Most products have either elastic or inelastic demand. **Elastic demand** occurs when a change in price results in a greater percentage change in quantity demanded, giving a PED figure (ignoring the sign) of more than 1, but less than infinity.

When demand is elastic, price and total revenue move in opposite directions. For example, ten products may initially be demanded at a price of $5 each, giving a total revenue of $50. If the price falls to $4 each and demand rises to 20 (giving a PED of –5, i.e. 100%/–20%), then the total revenue would increase to $80. In the case of elastic demand, a firm can raise total revenue by lowering the price, but it must be aware that if it raises the price, its total revenue will fall. Elastic demand is usually illustrated by a shallow demand curve. Figure 11.1 shows that the percentage change in quantity demanded is greater than the percentage change in price.

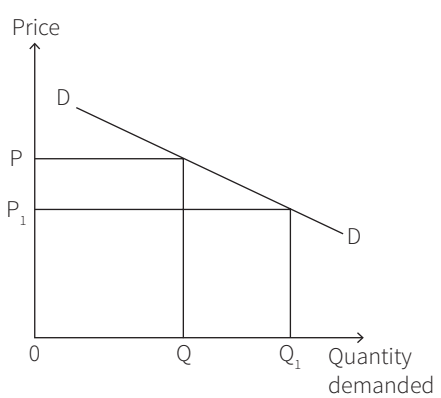


Fig. 11.1: Elastic demand

Inelastic demand is when the quantity demanded changes by a smaller change than the price and the PED is less than 1, but greater than zero. In this case, price and total revenue move in the same direction. If the price is raised, the quantity demanded will fall, but by a smaller percentage than the change in price and hence more revenue will be earned. If the price is lowered, more products will be demanded, but not enough to prevent the total revenue from falling. In this case, if a firm wants to raise revenue, it should raise its price.

KEY TERMS

Elastic demand: when the quantity demanded changes by a greater percentage than the change in price.

Inelastic demand: when the quantity demanded changes by a smaller percentage than the change in price.

LINK

Chapter 38.4 The consequences of a change in the exchange rate

Inelastic demand is usually represented by a relatively steep demand curve, as shown in Figure 11.2.

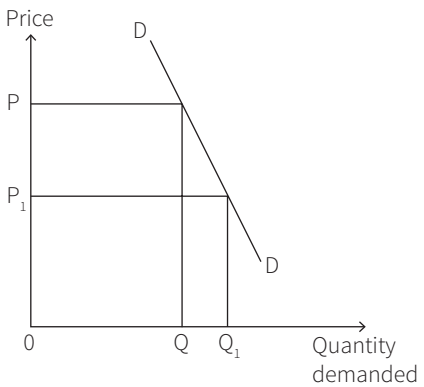


Fig. 11.2: Inelastic demand

TIP

In defining elastic demand, it is not accurate to state that it is when a change in price causes a large change in quantity demanded. This is because the change in price may have been larger than the change in quantity demanded. Elastic demand is when a change in price causes a greater *percentage* change in quantity demanded. The same care has to be taken with inelastic demand. In this case, it is smaller percentage change in quantity demanded.

TIP

As shown in this chapter, elastic demand is often shown by a shallow demand curve and inelastic demand by a steep demand curve. To be certain that this is the case, however, it would be necessary to know how the axes are measured.

11.5 Determinants of price elasticity of demand

The main factor that determines whether demand is elastic or inelastic is the availability of substitutes of a similar quality and price. If a product does have a close substitute, it is likely to have elastic demand. In this case, a rise in price will be likely to cause a significant fall in the quantity demanded as consumers will switch to the substitute. However, if there is no close substitute available, demand will probably be inelastic. The quantity demanded will not fall much in response to a rise in price because there is no suitable alternative to switch over to.

The other influencing factors are all linked to the availability of substitutes. These factors include the proportion of income spent on the product, whether the product is a necessity or a luxury, whether the product is addictive or not, whether its purchase can be postponed, how the market is defined and the time period under consideration.

If the purchase of a product takes up a small proportion of people's income, demand is likely to be inelastic. For example, if the price of salt rose by 20%, the quantity demanded is likely to alter by a much smaller percentage. This is because a 20% rise in price is likely to involve consumers paying only a little more. In fact, some may not even notice the rise in price. In contrast, products which take up a large proportion of people's income to be bought, tend to have elastic demand. In this case, a 20% rise in price would involve consumers paying

significantly more. Such a rise in the price of a new car would be likely to cause a greater percentage contraction in demand.

Besides taking up a large percentage of income, a new car may also be regarded as a luxury. Luxury products usually have elastic demand. They do not have to be purchased, so a rise in price may result in a greater percentage fall in quantity demanded. If their prices fall, however, the quantity demanded is likely to rise by a greater percentage as more of the population can afford to buy them now. In contrast to luxuries, necessities such as soaps tend to have inelastic demand. People cannot cut back significantly on their use, even if their prices rise.

People also find it difficult to cut back on their purchases of products which are addictive, such as cigarettes and coffee. This means that such products have inelastic demand. If the purchase of a product can be delayed, demand tends to be elastic. A rise in price will result in a greater percentage fall in the quantity demanded as people will postpone the purchase of the product, hoping that its price will drop back in the future. If it does, the quantity demanded will rise by a greater percentage, with the build-up of sales.

The more narrowly defined a product is, the more elastic its demand is. Demand for one brand of tea is more elastic than demand for tea in general and even more elastic than demand for hot drinks in general. This is because the narrower the definition, the more substitutes a product is likely to have. Demand also becomes more elastic, if the time period under consideration is long. This is because it gives consumers more time to switch their purchases. In the short term if the price of a product rises, customers may not have enough time to find alternatives and if it falls, new customers will not have sufficient time to notice the change in price and switch away from rival products.

GROUP ACTIVITY 1

Decide in each case whether demand is likely to be elastic or inelastic:

a cut flowers
b gold jewellery
c coffee
d train travel by commuters
e food.

Differences in PED

PED for the same products can differ with time. What were once seen as luxuries can turn into necessities as people become richer. This changes their demand from elastic to inelastic. In Europe and the USA, almost every teenager now has a mobile (cell) phone and a rise in price would not discourage many from buying the latest model. A wide range of other products, including TVs and cars, are seen as being essential requirements to sustain a modern lifestyle.

Due to different tastes, different income levels and different cultures, PED can also be found to vary between countries. Demand for rice is more inelastic in Bangladesh than it is in the USA, where it competes with a greater range of food products. In India, where cricket has a devoted following, demand for tickets to international cricket matches is more inelastic than it is in the Netherlands, where it is a relatively new sport.

Other degrees of elasticity

The most common degrees of elasticity are elastic and inelastic. Very occasionally other types are found.

i **Perfectly elastic demand** occurs when a change in price causes a complete change in the quantity demanded. A firm can sell any quantity at the going market price, for example Q or Q_1, but nothing above this price. For example, if one of the many wheat farmers raises his price, he may lose all of his sales with buyers switching to rival farmers. In this case, PED is infinity and is represented by a horizontal straight line as shown in Figure 11.3.

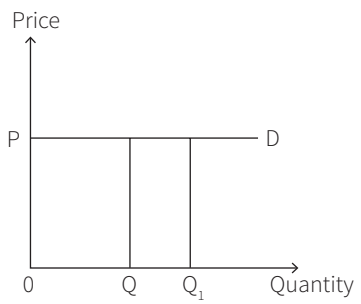


Fig. 11.3: Perfectly elastic demand

KEY TERMS

Perfectly elastic demand: when a change in price causes a complete change in the quantity demanded.

Perfectly inelastic demand: when a change in price has no effect on the quantity demanded.

Unit elasticity of demand: when a change in price causes an equal change in the quantity demanded, leaving total revenue unchanged.

ii **Perfectly inelastic demand** is when the quantity demanded does not change when price changes. Consumers buy the same quantity despite the alteration in price and PED is zero. Figure 11. 4 shows demand remaining unchanged at Q as price rises from P to P_1.

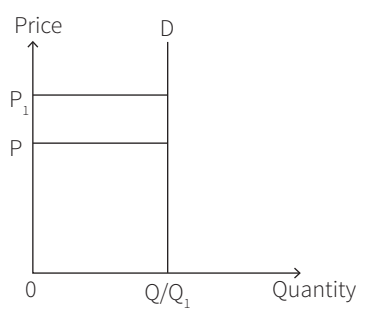


Fig. 11.4: Perfectly inelastic demand

iii **Unit elasticity of demand** is found when a percentage change in price results in an equal percentage change in quantity demanded, giving a PED of one (unity). When PED is unity, the area under the demand curve stays the same as price changes, showing that total revenue and total spending remain unchanged as price changes. Figure 11.5 illustrates this.

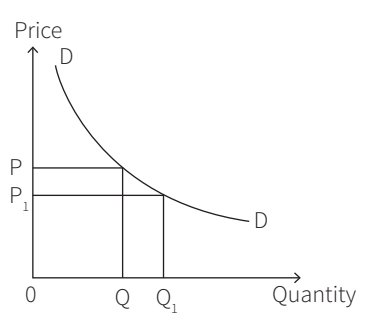


Fig. 11.5: Unit elasticity of demand

PED and the total spending on a product and revenue gained

As mentioned above, when demand is inelastic, a change in price will cause total revenue (and total spending) to move in the same direction. So a rise in price will cause total revenue to rise. When demand is perfectly inelastic, a change in price will not only cause revenue to move in the same direction, but also by the same percentage. For instance, the price may originally have been $10 and 50 units may have been sold. Total revenue would have been $500. If the price rose by 20% to $12, the quantity demanded would stay the same at 50 and so revenue would also rise by 20% to $600.

When demand is elastic, a change in price results in total revenue moving in the opposite direction. In this case, a rise in the price will cause total revenue to fall. In the case of perfectly elastic demand, a rise in price will cause demand to fall to zero.

In the case of unit elasticity of demand, price and the quantity demanded change by the same percentage and so total revenue remains unchanged. It is interesting to note that it is the quantity demanded which remains unchanged when price changes in the case of perfectly inelastic demand, whereas it is total revenue which does not change in the case of unit price elasticity of demand.

TIP

Remember that inelastic demand does not mean that demand does not change with price changes. It does alter, but by a smaller percentage than price. It is only when demand is perfectly inelastic that demand does not change with price.

11.6 Changes in PED

PED becomes more elastic as the price of a product rises. Consumers become more sensitive to price changes, the higher the price of the product. This is because, for example, a 10% rise in price when price was initially $10 000 would involve consumers having to spend considerably more ($1000) to buy the product. If a supplier was foolish enough to keep raising the price, a point would come when the product would be priced out of the market. At this point, demand would be perfectly elastic.

As the price falls, demand becomes more inelastic. For example, a 10% fall in price when the price was initially $1 is not very significant and is unlikely to result in much extra demand. If the price falls to zero, there will be a limit to the amount people want to consume. At this point, demand is perfectly inelastic. Figure 11.6 shows how PED varies over a straight line demand curve. At the mid-point there is unit PED, with the percentage change in quantity demanded matching the percentage change in price.

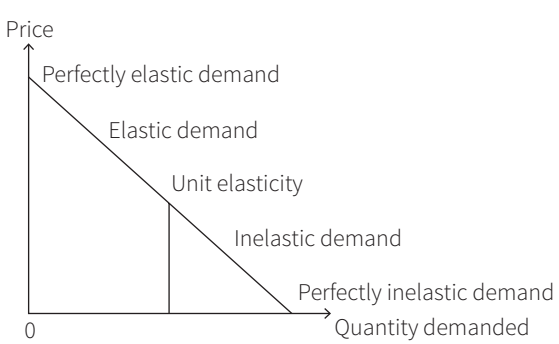


Fig. 11.6: Variation of PED over a demand curve

PED also changes when there is a shift in the demand curve. The more consumers want and are able to buy a product, the less sensitive they are to price changes. So a shift in the demand curve to the right reduces PED at any given price. In Figure 11.7, PED is initially −5 (50%/–10%) when price falls from $10 to $9. Then, when demand increases to D_1D_1, PED falls to −2.5 (25%/–10%).

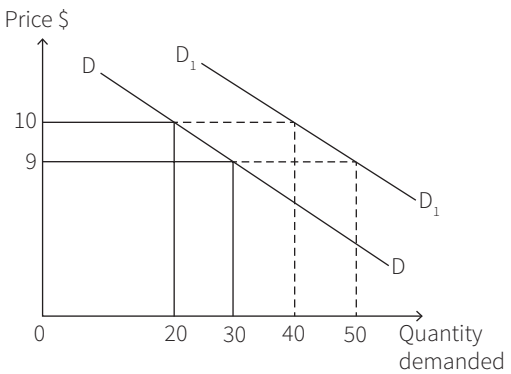


Fig. 11.7: The effect of an increase in demand on PED

When demand decreases, consumers become more sensitive to price changes and demand becomes more elastic. Figure 11.8 shows PED rising from −5 (50%/−10%) to −10 (100%/–10%).

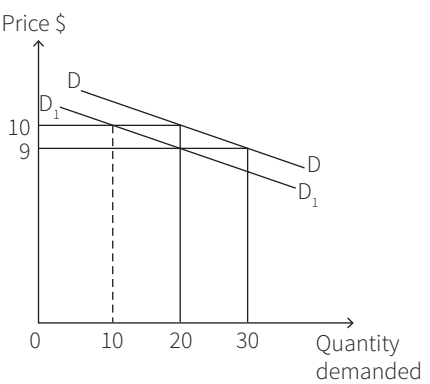


Fig. 11.8: The effect of a decrease in demand on PED

INDIVIDUAL ACTIVITY 3

In each of the following examples, first calculate the PED and then decide if the PED is elastic, inelastic, perfectly elastic, perfectly inelastic or unity.

a The price of a product falls from $8 to $6, causing demand to extend from 1250 to 12 500.

b Demand contracts from 500 to 400 when price rises from $40 to $42.

c Demand extends from 2000 to 2800 when price falls from $20 to $18.

d Price rises from $15 to $30, but demand stays unchanged at 5000.

e An increase in price from $80 to $90 and as a consequence, a decrease in quantity demanded from 400 to 300.

11.7 Implications of PED for decision making

A change in a product's price is often the main influence on its demand. This is one of the reasons why economists study the effect of a price change in some depth.

Consumers are more likely to benefit from lower prices and higher quality when demand is elastic. This is because producers would be reluctant to raise price as demand would contract by a greater percentage and revenue would fall. The quality may also be high if the elastic demand is the result of the existence of close substitutes. In this case, a producer may have to provide a good quality product to remain competitive.

It is widely recognised that a fall in price will result in an extension in demand. A producer, however, in considering whether to cut the price of a product will need to know the extent of any rise in demand. If demand is going to rise by only a relatively small amount, it may not pay to reduce the price. For instance, the producer's firm may be currently selling 100 units a day at $4 each and hence earning a total revenue of $400. If it is expected that by lowering its price to $3, demand will only rise to 120, the firm would experience a fall in revenue of $40.

A producer may try to make the firm's product more distinctive. This would discourage consumers switching to other firms' products as they would not be seen as such close substitutes. It would make demand for the firm's product more price inelastic and would give the producer more power to raise price.

While taking a decision on its subsidy and taxation policies, a government also needs to know the responsiveness of the quantity demanded to a change in price. It may, for instance, be seeking to discourage consumption of a certain product. In this case, it is more likely to be successful if demand is elastic. If, however, demand for a product does not alter much with a change in price, placing a tax on such a product will not be a very effective way of achieving this aim.

Summary

You should know:

- It is important for economists, firms and the government to know the extent to which demand changes as a result of a change in price.
- Price elasticity of demand is a measure of the extent to which the quantity demanded changes as a result of a change in price.
- The most common types of PED are elastic and inelastic. Elastic demand is when the quantity demanded changes by a greater percentage than the change in price, whereas inelastic demand is when the quantity demanded changes by a smaller percentage than the change in price.
- The main factor that determines whether demand is elastic or inelastic is the availability of close substitutes of the product.
- Demand for a product is likely to be inelastic if it has no close substitutes, takes up a small proportion of income to be bought, is a necessity, addictive or its purchase cannot be postponed.
- PED can vary with time and between countries.
- The categories of PED are elastic, inelastic, perfectly elastic, perfectly inelastic and unity.
- As price rises, demand becomes more elastic.
- An increase in demand will make the demand more inelastic.

Multiple choice questions

1 What is price elasticity of demand?

A A measure of the extent to which price changes when the quantity demanded changes

B A measure of the extent to which the quantity demanded changes when price changes

C A measure of the extent to which total revenue changes when price changes

D A measure of the extent to which price changes when total revenue changes

2 Demand for a product is inelastic. What effect will a fall in price have?

A Demand will not change

B Demand will change by a greater percentage

C Total revenue will fall

D Total revenue will rise

3 What characteristic is likely to make the demand for a product elastic?

A It is a necessity

B It is habit-forming

C It is relatively cheap

D It has close substitutes

4 The price of a product rises from $60 to $90. This causes demand to contract from 800 to 600. What type of price elasticity of demand does this product have over this price range?

A Perfectly inelastic

B Inelastic

C Unity

D Elastic

Four-part question

a Define *price elasticity of demand.* **(2)**

b Explain the difference between inelastic demand and perfectly inelastic demand. **(4)**

c Analyse how the price elasticity of demand of a product influences the relationship between changes in price and total revenue. **(6)**

d Discuss whether or not demand for laser eye surgery will become more inelastic over time. **(8)**

Chapter 12
Price elasticity of supply

Learning objectives

By the end of this chapter you will be able to:

- define price elasticity of supply
- calculate price elasticity of supply
- interpret price elasticity of supply figures
- draw and interpret supply curves to show different price elasticity of supply
- explore the determinants of price elasticity of supply
- discuss the implications of price elasticity of supply for decision making by producers, consumers, producers and government

Introducing the topic

Why does the supply of container ships change less quickly than the supply of pens when their price changes? Why would an increase in demand and a rise in price have no impact on the number of seats offered for sale at a football match between Barcelona and Real Madrid? How might advances in technology, such as the development of 3D printing, affect the supply of car parts? All of these questions relate to the extent to which supply adjusts to changes in price and so to the changes in demand which have caused the alterations in price.

KEY TERM

Price elasticity of supply (PES): a measure of the responsiveness of the quantity supplied to a change in price.

12.1 Definition of price elasticity of supply

Economists make use of the concept of **price elasticity of supply (PES)** to study how responsive supply is to a change in price. PES measures the extent to which the quantity supplied changes when the price of a product changes. The formula is:

$$\text{PES} = \frac{\text{Percentage change in quantity supplied}}{\text{Percentage change in price}}$$

The abbreviated form of this is:

$$\text{PES} = \frac{\%\Delta QS}{\%\Delta P}$$

12.2 Calculating PES

PES is calculated in the same way as price elasticity of demand (PED). This time, however, it is the percentage change in quantity supplied which has to be calculated. Again, it is found by dividing the change in quantity supplied by the original quantity supplied, and multiplying by 100. Similarly, the percentage change in price is calculated by dividing the change in price by the original price and multiplying by 100. For example, the quantity supplied may rise from 100 to 130 as a result of price increasing from \$10 to \$12. In this instance, the percentage change in quantity supplied is:

$$\frac{\text{Change in quantity supplied}}{\text{Original quantity supplied}} \times 100 \text{ i.e. } 30 \times 100 = 30\%$$

And the percentage change in price is:

$$\frac{\text{Change in price}}{\text{Original price}} \times 100 \text{ i.e. } \frac{\$2}{\$10} \times 100 = 20\%$$

This means that the PES is:

$$\frac{30\%}{20\%} = 1.5$$

INDIVIDUAL ACTIVITY 1

In each case, calculate the PES:

a A fall in price from \$5 to \$4 causes supply to contract from 10 000 to 4000.

b Supply extends from 200 to 210 when price rises from \$10 to \$14.

c An increase in price from \$4000 to \$4400 results in an extension of supply from 80 to 90.

TIP

In the case of both PED and PES, do not forget to divide the change by the **original** figure and multiply by 100, while calculating percentages.

12.3 Interpretation of PES

As the quantity supplied and price are directly related, PES is a positive figure. The figure indicates the degree of responsiveness of the quantity supplied to a change in price. The higher the figure, the more responsive supply is. A PES of 2.6, for example, means that a 1% rise in price will cause a 2.6% extension in supply.

INDIVIDUAL ACTIVITY 2

Supply of a product rises from 5000 to 7000 due to a rise in price from $4 to $5.

a Calculate the PES.

b In this case, by what percentage would supply extend if price rose by 1%?

12.4 Elastic and inelastic supply

Supply is usually found to be elastic or inelastic. **Elastic supply** is when the percentage change in quantity supplied is greater than the percentage change in price. In this case, PES is greater than 1, but less than infinity. The higher the figure, the more elastic supply is. Elastic supply is usually illustrated by a shallow curve, as shown in Figure 12.1. A straight-line supply curve illustrating elastic supply would touch the vertical axis.

KEY TERMS

Elastic supply: when the quantity supplied changes by a greater percentage than the change in price.

Inelastic supply: when the quantity supplied changes by a smaller percentage than the change in price.

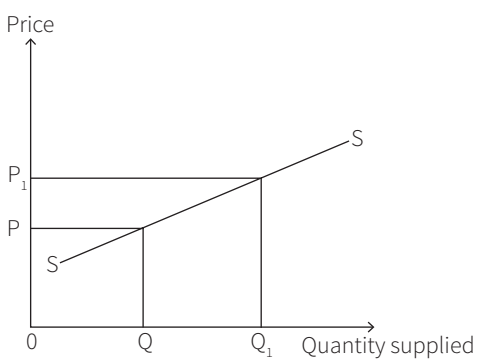


Fig. 12.1: Elastic supply

In contrast, **inelastic supply** is when the percentage change in quantity supplied is less than the percentage change in price and so PES is less than 1, but greater than zero. A PES of 0.2 would mean that supply is more inelastic than that for a PES of 0.7. Figure. 12.2 illustrates inelastic supply. The supply curve is steep, showing that the quantity supplied changes by less than the price in percentage terms. A straight-line supply curve illustrating inelastic supply would touch the horizontal axis.

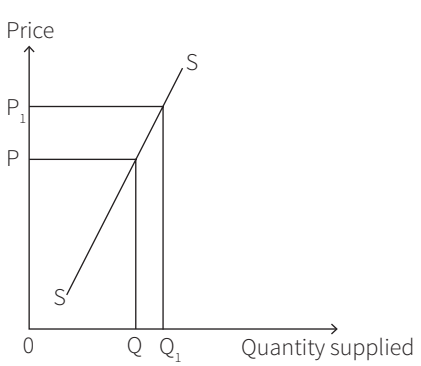


Fig. 12.2: Inelastic supply

12.5 Determinants of price elasticity of supply

The three main factors which determine the PES of a product are:

i the time taken to produce it

ii the cost of altering its supply and

iii the feasibility of storing it.

If the product can be made quickly, the cost of altering its supply is low. Also, if it can be stored, the quantity supplied can be adjusted relatively easily in the event of a price change. In such a case, a rise in price will result in a greater percentage change in supply. This is because firms can alter the amount they offer for sale by making more, using up spare capacity, shifting resources and employing more resources, and by drawing on stocks. If the price falls, firms will cut back on production, remove some products from the market and place them in storage.

In contrast, if it takes a long time to make a product, it is expensive to change production (perhaps because firms are working at full capacity). Again, if the product cannot be stored, it will be more difficult to adjust its supply in response to a change in price. As a result, supply will be inelastic. Supply of many agricultural products is inelastic. This is because it takes time for crops to grow and animals to mature, and many agricultural products cannot be stored. If the price of apples falls, for example, it is unlikely that the quantity offered for sale will decline significantly. This is because once picked, apples have a relatively short shelf-life. If the price of apples rises, again farmers cannot alter the quantity supplied substantially. It can take years before new apple trees start producing a significant crop. However, the supply of apples in one area or one country may be relatively elastic if apples can be moved from one place to another in response to a difference in demand and hence price.

GROUP ACTIVITY 1

Decide, in each case, whether supply is likely to be elastic or inelastic:

a rubber bands

b t-shirts

c aircraft

d pencils

e lamb.

Other degrees of PES

In addition to elastic and inelastic supply, three other degrees of elasticity may be found, although not nearly as frequently as elastic and inelastic supply.

KEY TERM

Perfectly inelastic supply: when a change in price has no effect on the quantity supplied.

i **Perfectly inelastic supply** is when the quantity supplied does not alter with price changes and PES is zero. If, for example, more people are demanding to see a film at a particular cinema, ticket prices may rise. However, it is unlikely to increase the seating capacity in the short run. In the longer run, if demand remains high, the owners of the cinema are likely to increase its size.

Figure 12.3 shows perfectly inelastic supply. A rise in price from P to P_1 leaves the quantity supplied unchanged at Q.

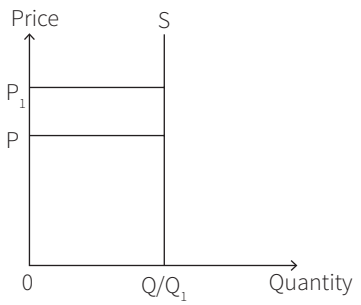


Fig. 12.3: Perfectly inelastic supply

ii **Perfectly elastic supply** is when a change in price will cause an infinite change in supply, giving a PES of infinity. PES may come close to infinity in very competitive markets. In this case, firms would supply whatever quantity people want to buy at the given price. An increase in demand would not cause a change in price. If demand and price were to fall, supply would fall to zero. Figure 12.4 illustrates perfectly elastic supply.

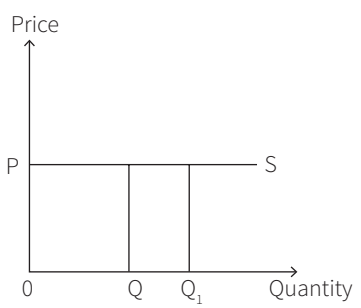


Fig. 12.4: Perfectly elastic supply

iii **Unit PES** occurs when a given percentage change in price causes an equal percentage change in supply. Unit PES is illustrated by any straight line that goes through the origin (the point where the vertical and horizontal axes intersect) as shown in Figure 12.5.

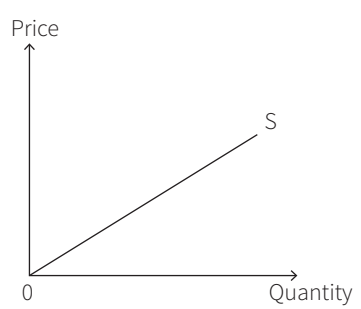


Fig. 12.5: Unit price elasticity of supply

KEY TERMS

Perfectly elastic supply: when a change in price causes a complete change in quantity supplied.

Unit PES: when a change in price causes an equal percentage change in the quantity supplied.

12.6 Changes in PES

As already suggested, PES can vary with time. The supply for most of the products becomes more elastic as the time period increases. This is because producers have more time to adjust their supply. This may involve switching production from/to other products, and building new factories and offices or selling off existing plants.

Advances in technology, by reducing the production period and lowering costs of production, make the supply more elastic. In recent years, it has become much easier and cheaper to produce magazines. As a result, not only has the number of magazines on offer increased, but also the speed with which new titles appear and titles which are declining in popularity, disappear.

12.7 Implications of PES for decision making

Consumers benefit from supply being elastic. This is because it means that supply is responsive to consumer demand. If demand increases, price will rise. If supply is elastic, the quantity supplied will rise by a greater percentage than the change in price. Sales may rise significantly without there being a large increase in price as shown in Figure 12.6.

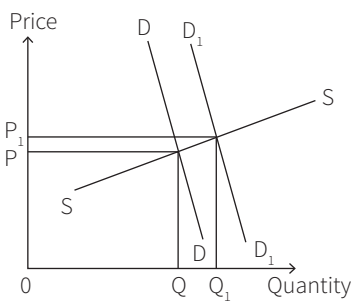


Fig. 12.6: The responsiveness of supply in a market with elastic supply

Producers want their supply to be as elastic as possible. Their profits will be higher, the quicker and more fully they can adjust their supply in response to changes in demand and hence price.

If governments want to encourage the output and consumption of a product they are likely to be more successful giving a subsidy to producers if supply is elastic. Governments use a variety of policy measures to promote flexibility in production, for example a number of governments have changed the law making it easier for firms to hire and fire labour.

Summary

You should know:

- PES is a measure of the responsiveness of the quantity supplied to a change in price.
- The most common types of PES are elastic and inelastic supply. Elastic supply is when the quantity supplied changes by a greater percentage than price whereas inelastic supply is when the quantity supplied changes by a smaller percentage than price.
- The main factors that determine whether supply is elastic or inelastic are whether production can be changed cheaply and quickly and whether the product can be stored.
- Supply of a product is likely to be inelastic if it takes a long time to produce it, if it is expensive to alter production and if it cannot be stored.
- Supply tends to become more elastic with time.
- The categories of PES are elastic, inelastic, perfectly elastic, perfectly inelastic and unity.

Multiple choice questions

1 What is the formula for PES?

A $\frac{\text{Change in quantity supplied}}{\text{Change in price}}$

B $\frac{\text{Percentage change in quantity supplied}}{\text{Percentage change in price}}$

C $\frac{\text{Change in quantity supplied}}{\text{Change in quantity demanded}}$

D $\frac{\text{Percentage change in quantity supplied}}{\text{Percentage change in quantity demanded}}$

2 What does a PES of 0.8 indicate?

A Supply is elastic
B Supply is perfectly elastic
C Supply is perfectly inelastic
D Supply is inelastic

3 In what circumstance would supply of a product be elastic?

A It is costly to produce
B It takes time to produce
C It can be stored
D It uses resources which are in short supply

4 Which diagram illustrates elastic supply?

A

B

C

D

Four-part question

a Define *perfectly inelastic supply.* **(2)**

b Explain how an economist can determine whether the supply of a product is elastic or inelastic. **(4)**

c Analyse why the supply of agricultural products tends to be more inelastic than the supply of manufactured products. **(6)**

d Discuss whether or not producers would want the demand and the supply of their product to be more price elastic. **(8)**

Chapter 13
Market economic system

Learning objectives

By the end of this chapter you will be able to:

- define a market economic system
- explain the difference between private and public sectors
- discuss the advantages and disadvantages of the market economic system
- recognise how efficiency can be assessed
- describe the role of market forces in different countries

Introducing the topic

A number of countries are increasing the role of market forces and reducing the role of the government in their economies. For example, Cuba is increasing the role of market forces in its economy. The country's government has legalised the private sale of cars and homes, and removed some price controls and regulations. Why is it making these changes?

13.1 The market economic system

As noted in Chapter 6, resources move automatically as a result of changes in price. In turn, price changes are determined by the interaction of demand and supply. The use of resources is changing all the time in response to changes in consumer demand and the costs of production. Resources move towards those products whose demand is rising and away from those which are becoming less popular. Figure 13.1 shows an increase in demand for air travel and a decrease in demand for sea travel.

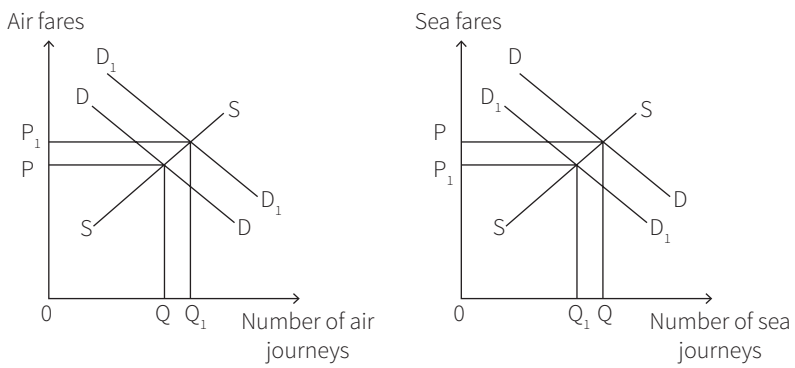


Fig. 13.1: (a) An increase in demand (b) Changes in the markets for air travel and sea travel

The changes in demand cause prices to change. These alterations in price encourage firms to switch their resources from sea travel to air travel.

INDIVIDUAL ACTIVITY 1

The price of onions rose significantly in India in 2015. Traders blamed the hike in price on a poor crop after unusually light monsoon rains. In the same year in India, the price of tomatoes rose, largely due to higher demand caused by an increase in incomes.

a Draw a diagram, in each case, to show why the price of onions and the price of tomatoes rose in India in 2015.

b Explain how, in each case, the markets responded to changing circumstances.

The importance of competition and incentives

The advantages of a market economic system rely, in large part, on competitive pressures. One of the benefits claimed for a market system is *choice*. If there is a large number of firms producing a product, consumers will have a choice of producers. This should increase the prospects of consumers deciding what is made, with producers competing with each other to meet their demand. In such a case, consumers are said to be *sovereign*.

Competition, whether actual or potential, should also result in low prices. Actual competition arises when there are rival firms in the industry. Potential competition occurs when it is easy for firms to enter or leave the industry. If it is possible for consumers to switch from high price firms to low price firms, or for other firms to start producing the products if prices and profits are high, there will be pressure on firms to keep their prices low in order to stay in business. To do this, they will seek to keep their costs low. The more successful a firm is in keeping its costs low and the more it targets the desires of consumers, the more efficient it is said to be.

The market economic system encourages efficiency by rewarding those entrepreneurs and workers who respond to market signals and punishes those who do not. This is sometimes

referred to as the market system providing both a *carrot* (a reward) and a *stick* (punishment) to promote efficiency.

Entrepreneurs, who are quick to pick up on changes in consumer demand, are likely to earn high profits. These provide them with the incentive and ability to innovate and expand. In contrast, those entrepreneurs who are unresponsive to changing consumer demand are likely to suffer losses.

In labour markets, workers increase their chance of earning high wages by developing those skills which are in high demand, working hard, accepting more responsibility and by being willing to change their nature and place of work. Those who are not prepared (or able) to work, who lack the appropriate skills and who are geographically, or occupationally, immobile may receive no or low incomes.

INDIVIDUAL ACTIVITY 2

In 2016, a shortage of up to 48 000 lorry drivers in the USA led some US companies to recruit truckers from India and a range of other countries. The companies attracted the drivers by offering them higher wages than they could earn at home. In fact, the wages were twelve times those paid in India.

a What market incentive is touched on in this passage?

b Explain (using a diagram) what is likely to have happened to the wages paid to lorry drivers in India, in 2016.

Private and public sectors

The **private sector** covers business organisations which are owned by shareholders or individuals. These organisations respond to changes in market forces and are profit motivated. The public sector is controlled by the government. It covers government run services and **state-owned enterprises (SOEs)**, also called nationalised industries.

The government's priority may be to promote the welfare of the country's population.

93

LINK

Chapter 15.3 Government measures to address market failure (Nationalisation and privatisation)

TIP

Be careful with the word 'public'. Sometimes, it refers to the government as in 'public expenditure' and 'public sector'. It can, however, also refer to people as a whole as in the 'general public' or open to all people, as in a 'public limited company'.

KEY TERMS

Public sector: the part of the economy controlled by the government.

State-owned enterprises (SOEs): organisations owned by the government which sell products.

Privatisation: the sale of public sector assets to the private sector.

GROUP ACTIVITY 1

India has a long tradition of government planning, but the degree of government intervention in the economy has been reduced in the last two decades. **Privatisation** started in 1991, with the creation and sale of a small number of shares in some SOEs. This process speeded up in the first decade of the 2 000s. It slowed down in the second decade, but there was still some debate about whether a number of state-run enterprises, including the national airline, Air India, should be transferred from the private to the public sector.

Explain one reason for better performance of a firm when:

a it is in the private sector

b it is in the public sector.

13.2 The advantages of a market economic system

A market economic system has the potential to provide some significant, connected advantages.

- A market economic system should be very responsive to changes in consumer demand. In fact, in this economic system, consumers are said to be *sovereign*. This means that it is consumers who have the power to determine what is produced.
- Resources should change automatically and quickly to reflect changes in consumer demand. This is for three reasons. One is that the **price mechanism** in a market economic system provides information on which products are increasing in demand and which ones are falling in demand. The second is that the market economic system provides an incentive for resources to move in response to changes in demand. For example, if demand for books is increasing, whilst the demand for cinema tickets is falling, profits and wages will be rising in the publishing industry, while they will be falling in the film industry. These changes will encourage some firms to switch production and some workers to change their jobs. The third reason is that the market economic system punishes those firms, workers and owners of capital and land who do not respond to changing demand. For example, if a firm continues to produce a product which is falling in demand, it will make a loss.
- There is choice. Consumers can choose which products to buy and which firms to buy from. Firms can also decide what they want to produce and workers can choose who to work for.
- Costs and prices may be low. The profit motive and competition promote efficiency. Those firms which produce at the lowest costs, and so which are able to charge the lowest prices, are likely to sell more and earn more profit. In contrast, those firms which produce products of the same quality at a higher price are likely to go out of business. Indeed, by rewarding efficiency, and punishing inefficiency, the market economic system should encourage the production of the goods and services that consumers want and are prepared to pay for, in the right quantities and at the lowest possible cost per unit.
- Quality may be high. Market forces can promote the improvement of methods of production and a rise in the quality of products made. It does this by putting competitive pressure on firms, and by providing them with the profit incentive to try to gain more sales by making their products more attractive to consumers.

KEY TERM

Price mechanism: the system by which the market forces of demand and supply determine prices.

TIP

Efficiency is a key economic concept. In assessing the performance of an economy or firm, consider whether it is efficient or not.

13.3 The disadvantages of a market economic system

There is a risk that the market forces of demand and supply may not work well. In fact, **market failure** may occur, with market forces failing to ensure the maximum benefit for society. There are a number of reasons for this.

- Consumers and private sector firms may only take into account the costs and benefits to themselves, and not the costs and benefits of their decisions to others. For example,

KEY TERM

Market failure: market forces resulting in an inefficient allocation of resources.

some people may smoke, even if it annoys and endangers the health of those around them. Another example is that to keep their costs and prices down, firms may dump waste material in local rivers rather than process it.

- Competition between firms should ensure efficiency but, in practice, there may be little competition. A market may become dominated by one or a few firms. These firms have considerable market power leading to limited or no choice for consumers. They can raise the prices of their products and produce poor quality products, as people have no choice but to buy from them.
- Even when there is competition and firms want to respond to desires of consumers, they may not be able to do this. This may be because they cannot attract more workers as workers lack the right skills or are geographically immobile.
- Firms will not make products unless they think they can charge for them. There are some products, such as defence, which most people may want, but know that if they are provided for some, they will have to be provided for all. In such cases, people can act as **free riders**. They can benefit from the product even if they do not pay for it. When it is not possible to exclude non-payers, private sector firms do not have the financial incentive to produce the product.
- Advertising can distort consumer choice. It can persuade people to buy products they would not otherwise have wanted or encourage them to buy larger quantities. Consumers and producers may also lack information and hence may make inefficient choices.
- As well as market forces sometimes failing to achieve efficiency, they can also result in what may be regarded to be inequitable (unfair) outcomes. In a market economic system, some consumers will have a lack of income. There can be a very uneven distribution of income, with some people being very rich, and others being very poor. The sick and disabled may find it difficult to earn incomes. The old may not have made adequate financial provision for their retirement. Some workers may become unemployed and may find it difficult to find new jobs.
- Differences in income will increase over time. Those earning high incomes can afford to save and buy shares. Their savings and shares will earn them interest and dividends (a share of profits). In contrast, the poor cannot afford to save. The children of the rich will be more likely than the children of the poor, to earn high incomes. This is because their parents are able to spend more on their education, provide better equipment such as computers at home for them and thus they have high hopes of what they can achieve.

KEY TERM

Free rider: someone who consumes a good or service without paying for it.

LINK

Chapter 15.3 Government measures to address market failure (Unfairness)

GROUP ACTIVITY 2

1 In the USA there is a considerable gap between the rich and the poor. Explain, how in a market economy, some people can be:

a rich

b poor.

2 Decide which of the following may be found in a market economy:

a most people working for SOEs

b controls on the prices of most products

c entrepreneurs earning high profits

d most land being privately owned.

KEY TERM

Allocative efficiency: when resources are allocated to produce the right products in the right quantities.

13.4 Allocative efficiency

Allocative efficiency occurs when resources are allocated in a way that maximises consumers' satisfaction. This means that firms produce the products that consumers demand, in the right quantities.

Figure 13.2a shows allocative efficiency being achieved with supply matching consumers' demand. In contrast, Figures 13.2b and 13.2c depict allocative inefficiency. In the case of 13.2b, there are too few resources being devoted to the product, which results in a *shortage*. In 13.2c, too many resources are allocated for producing the product and there is a *surplus*.

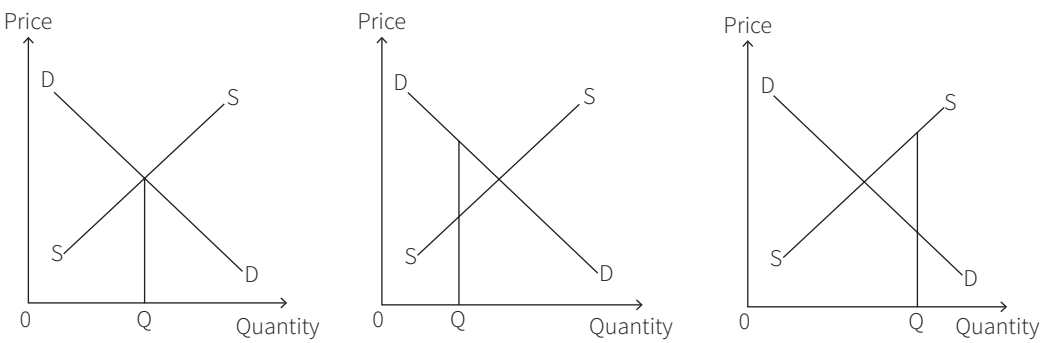


Figure 13.2: (a) Allocative efficiency (b) Allocative inefficiency: under-production (c) Allocative inefficiency: over-production

Market forces, by changing prices, should eliminate shortages and surpluses, and move markets towards allocative efficiency. Competition can play a key role in this process. This is because in a competitive market, a firm has an incentive to be allocatively efficient in the form of profit. It also has a threat of punishment in the form of the risk of going out of business if it is not allocatively efficient. If it is more responsive to the needs of consumers as compared to its rivals, it should gain a larger market share and earn high profits at least for a while. In contrast, if it does not produce commodities demanded by consumers, it will lose sales to rivals and may be driven out of the market.

INDIVIDUAL ACTIVITY 3

In recent years, UK consumers have become more health conscious. This has led to a fall in demand for crisps. A number of crisp producers have gone out of business.

a What effect is a fall in demand likely to have on price?

b What evidence is there above of the UK crisp market working efficiently?

KEY TERM

Productively efficient: when products are produced at the lowest possible cost and making full use of resources.

13.5 Productive efficiency

A firm is said to be **productively efficient** when it produces at the lowest possible cost per unit. Again, in a competitive market, a firm has both an incentive and a threat of punishment which should drive it towards being productively efficient. If it can drive its costs down to the lowest possible level, it may capture more sales and gain more profit. If, however, its costs per unit are higher than its rivals, it will lose market share and possibly all of its sales.

If a firm is productively efficient, it means that it is not wasting resources. If all producers in a country are productively efficient, the economy will be able to make full use of its resources and hence will be producing on its production possibility curve.

In Figure 13.3, production point A is productively efficient. With its given resources and technology, the economy is making as many products as possible. Point B is productively inefficient as some resources are either not being used or not being put to good use. For example, some workers may be unemployed, some workers may be lying idle, and some factory and office space may be empty. Also, there may be some workers involved in jobs to which they are not best suited and the capabilities of some capital goods may not be fully exploited.

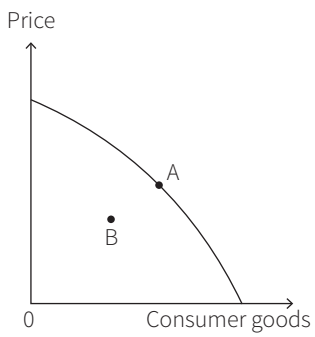


Fig. 13.3: Productive efficiency (A) and inefficiency (B)

13.6 Dynamic efficiency

Dynamic efficiency arises when resources are used efficiently, over a period of time. The profit incentive, and threat of going out of business, can encourage firms in a market system to spend money on research and development, and to innovate. Those firms that introduce new methods of production and bring out new, improved products, increase their chance of gaining high profits. Those that do not seek to keep up with new ideas to produce products and do not develop new products, run the risk of being driven out of the market.

KEY TERM

Dynamic efficiency: efficiency occurring over time as a result of investment and innovation.

GROUP ACTIVITY 3

Bata Pakistan Limited is a shoe producer and retailer. In recent years, it has expanded the range of products it produces. It now, for example, produces and sells handbags. The firm has faced increased competition which has reduced the growth of its profits.

a What evidence is there in the passage, that Bata may have been responding to consumer demand?

b How may consumers benefit from the high profits earned by a firm?

13.7 Examples of the different economic systems

To a certain extent, all economies are mixed economies. This is because there is some government intervention in all economies and some private sector production. The term *mixed economy*, or *mixed economic system*, however, is largely used to describe an economy which has private and public sectors of reasonably similar sizes. An example of such an economy is Sweden.

Whilst there is no economy without a public sector, the USA is often described as a market economy. The US government does carry out some functions, for example providing defence. The economy is, nevertheless, considered to be a market economy as most capital and land

is owned by individuals, and groups of individuals, and market forces play the key role in deciding the fundamental economic questions.

In North Korea, there is a very limited degree of small scale private sector agricultural production, but the economy is largely a planned economy. Most land and capital is owned by the government and it makes most of the decisions as to what to produce, how to produce it and who receives the output.

Changes in economic systems

In the 1980s and 1990s a number of economies, including the UK and New Zealand, moved from being largely mixed economies to being mainly market economies. The role of the government was reduced by removing a number of government regulations, selling off SOEs and parts of SOEs (privatisation) and lowering taxation.

There was an even more dramatic change in the economies of Eastern Europe, including Poland and Russia, in the 1990s. They moved from being planned economies towards market economies. These economies have experienced a significant increase in consumer choice and a rise in the quality of products produced. They have also, however, seen a rise in income inequality and poverty.

Recent years have witnessed an increasing role of market forces in a number of economies in Asia, including China and India, and in Africa, including South Africa. In contrast, there has been a rise in government intervention in a number of Latin American economies, including Bolivia and Venezuela.

Summary

You should know:

- In a market system, changes in prices cause the shift in resources, from making products that are becoming less popular to making those that are becoming more popular.
- Competition and incentives, including higher profits and higher wages, play key roles in a market system.
- The main advantages claimed for a market economy are that output reflects consumer tastes, consumers have greater choice, competition promotes efficiency which lowers prices and increases quality, and financial incentives encourage hard work and enterprise.
- Among the disadvantages that may arise from operating a market economy are that output may not reflect the full costs and benefits, private sector firms may abuse their market power, resources may be immobile, products that consumers want, but cannot be charged for directly, cannot be produced, and there may be poverty.
- A market system rewards efficiency and punishes inefficiency.
- Allocative efficiency is achieved when the products desired by consumers are made in the right quantities.
- A firm that produces at the lowest possible average cost is productively efficient.
- Innovation can lead to dynamic efficiency.
- In a mixed economy, resources are allocated by means both of the price mechanism and government decision.
- Recent decades have seen a number of countries in Eastern Europe, Asia and Africa move towards a market economy.

Multiple choice questions

1 What is an advantage of a market economy?

A An absence of poverty

B Consumer sovereignty

C Firms having considerable market power

D Full employment

2 What encourages firms to produce what consumers demand?

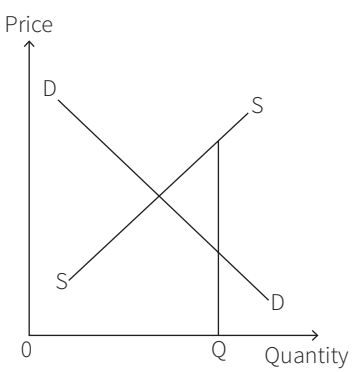
A The chance to earn a high profit

B The chance to experience high unit costs of production

C The desire to attract new firms into the industry

D The desire to keep revenue as low as possible

3 The diagram below shows the current position in a market. How will market forces move the situation towards allocative efficiency?



	Price	Demand	Supply
A	fall	fall	rise
B	fall	rise	fall
C	rise	fall	rise
D	rise	rise	fall

4 In a market system, what encourages firms to keep their costs low?

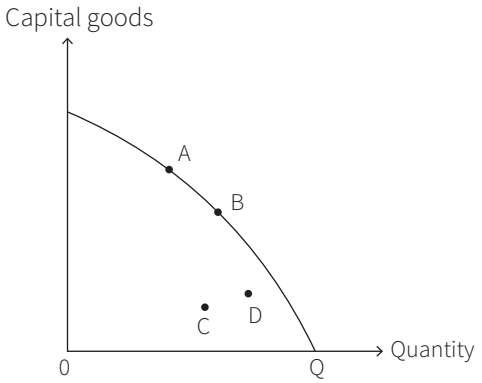
A Competition

B Government regulations

C Subsidies

D Taxation

5 In the diagram below, which movement shows an increase in productive efficiency?



A A to B

B B to C

C C to D

D A to D

Four-part question

a Identify **two** differences between the private sector and the public sector. **(2)**

b Explain why consumers are said to be sovereign in a market economic system. **(4)**

c Analyse the role of profit in a market economic system. **(6)**

d Discuss whether or not prices will be low in a market economic system. **(8)**

Chapter 14
Market failure

Learning objectives

By the end of this chapter you will be able to:

- define market failure
- distinguish between social, private and external costs and benefits
- explain why external costs and external benefits cause market failure
- explain why information failure may cause market failure
- define merit and demerit goods
- explain why merit and demerit goods result in market failure
- define public goods and private goods
- distinguish between private and public goods
- explain why public goods result in market failure
- explain why monopoly power causes market failure
- explain why factor immobility results in market failure
- discuss the consequences of market failure

Introducing the topic

Do you think enough resources are devoted to education and healthcare in your country?
Do you think too many resources are devoted in the global economy to cigarette production?

Are you worried about the level of pollution in your country and the world? Why do market forces sometimes result in a misallocation of resources?

Chapter 13 described the benefits that arise when markets work well. In practice, however, there are a number of reasons why markets may fail to be efficient. These reasons were introduced in the previous chapter, and are now explained in more depth here. Some of the measures that governments can take to correct market failure are also outlined briefly.

14.1 The nature of market failure

Market failure occurs when market forces fail to produce the products that consumers demand, in the right quantities and at the lowest possible cost. In other words, market failure arises when markets are inefficient. There are a number of indicators of market failure including shortages, surpluses, high prices, poor quality and lack of innovation.

If left to market forces, some products may be under-produced, some over-produced and some may not be produced at all. Prices may be high due to lack of competitive pressure and difficulties in lowering the costs. A lack of investment and reduction in expenditure on research and development, can also slow down the improvement in products.

KEY TERMS

Third parties: those not directly involved in producing or consuming a product.

Social benefits: the total benefits to a society of an economic activity.

Social costs: the total costs to a society of an economic activity.

Private benefits: benefits received by those directly consuming or producing a product.

Private costs: costs borne by those directly consuming or producing a product.

External costs: costs imposed on those who are not involved in the consumption and production activities of others directly.

14.2 Failure to take into account all costs and benefits

The consumption and production of some products may affect people who are not involved in their consumption or production directly (those indirectly affected are often referred to as **third parties**). In such cases, the total benefits and total costs to society, called **social benefits** and **social costs**, are greater than the benefits and costs to the consumers and producers, known as **private benefits** and **private costs**. For example, the social costs of a firm producing chemicals will include costs not only to the firm, but also to people living nearby.

Costs to third parties are called **external costs**. Among the private costs to the firm will be the cost of buying raw materials, fuel and wages. The external costs imposed on those living nearby may include noise pollution, air pollution and water pollution. If the decision to produce chemicals is based only on the private costs to the firm, there will be over-production. Figure 14.1 shows that if only the private costs to the firm are taken into account, then the supply would be curve SS, whereas the full cost to society is higher at curve SxSx. The difference between the two is accounted for by the external costs. The allocatively efficient output is Qx, but the market output is Q.

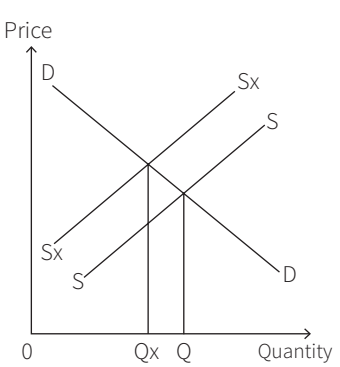


Fig. 14.1: Over-production

Demand, based just on the private benefits to those consuming the product, will lead to under-consumption and hence under-production if the total benefit to society is greater. For example, among the benefits students may receive by undertaking university degree courses are greater number of career choices, higher future earnings, life-long interests and life-long friends. The social benefits include not only these private benefits, but also the benefits to other people (**external benefits**) who will be able to enjoy a higher quantity and quality of output as graduates are usually highly productive workers. In Figure 14.2 the demand for degree courses, based on private benefits, is curve DD, whilst the total benefit to the economy is shown by curve DxDx. The number of degree courses that would be undertaken, if left to market forces, is Q, whereas the number which would cause the maximum benefit to the society is Qx.

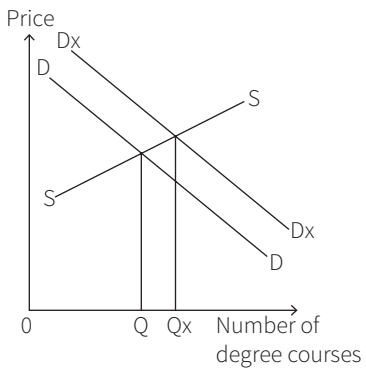


Fig. 14.2: Under-production

KEY TERMS

External benefits: benefits enjoyed by those who are not involved in the consumption and production activities of others directly.

Socially optimum output: the level of output where social cost equals social benefit and society's welfare is maximised.

Whenever there is a gap between the total effects on society, and the effects on those directly consuming and producing the products, markets will fail to allocate resources efficiently. The level of output which will cause maximum benefit to the society (**socially optimum output**) will occur when the social benefit of the last unit produced is equal to the social cost of that unit. If the social cost exceeds the social benefit, it implies that too many resources are being devoted to the production of the product. Society would benefit from reducing its output. In contrast, if the benefit society would gain from producing more of the product is greater than the cost to society of producing more output, then more resources should be devoted to its production.

A case where the social cost (in most countries) exceeds the social benefit, is the use of road space by private cars. When people are thinking of making a trip in their car, they take into account the private costs and benefits, that is the cost and benefits to themselves. If the benefits received by them by undertaking the journey exceed the costs, for example the cost of petrol and wear and tear on the vehicle, they will make the journey. What they do not consider is the external costs caused by them, including air pollution, noise pollution, congestion and accidents. A number of governments, including Singapore and the UK, have introduced *road pricing schemes*. These seek to charge the full costs of their journeys. Different amounts are charged according to when and where people drive. Someone driving along a deserted country road is likely to cause lower external costs than someone driving into a city centre at peak time.

Pollution is an external cost

TIP

It is a common mistake to confuse social and external costs and benefits. Remember: social costs and benefits are the total costs and benefits of an economic activity. They include both the external and private costs and benefits.

INDIVIDUAL ACTIVITY 1

In January 2016, people in Buenos Aires and other major cities in Argentina demonstrated against the building of a new, large chemical factory. The demonstrators claimed that the factories would pollute the local river – harming local tourism, farming and fishing.

a Identify two private costs of building a factory.

b Explain why pollution is an external cost.

14.3 Information failure

For consumers to buy the products that will give them the highest possible satisfaction at the lowest possible prices, they have to be fully informed about the nature of the products on offer, the benefits they can receive from them and their prices. Workers need to know what jobs are on offer, the location of the workplace, the qualifications required and the remuneration they would receive. They should also be aware about the nature of jobs for which their skills are best suited.

Similarly, producers need to know what products are in demand, where good quality raw materials can be purchased at lowest possible prices and what are the most cost-effective methods of production. If they lack this information, they will make decisions that are not in their best interests. Besides consumers paying more than required and buying products of lower quality than available, workers may end up in the wrong jobs, and producers' costs may be higher and revenues lower than possible due to information failure.

Information failure can occur in a number of ways. There may be a lack of information or inaccurate information. There may also be asymmetric information which occurs when consumers and suppliers do not have equal access to information. For instance, if a car mechanic tells a motorist that her or his car needs an expensive repair, the motorist may lack the technical knowledge to question the advice.

14.4 Merit goods

In the case of some products, there is both the problem of information failure and the problem of social benefits or costs being greater than the private benefits or costs.

Merit goods are products that are more beneficial to the consumers than they themselves realise, and they have benefits for those who are not involved in their consumption directly, that is external benefits. This failure of the consumers to acknowledge the true value to themselves, and to others, means that these products would be under-consumed and hence under-produced, if left to market forces.

KEY TERM

Merit goods: products which the government considers consumers do not fully appreciate how beneficial they are and so which will be under-consumed if left to market forces. Such goods generate positive externalities.

Healthcare is an example of a merit good. For instance, some people may not recognise the importance of regular medical check-ups and/or visiting a doctor. Hence, they are unlikely to take into account the benefits of their fitness to others. The associated external benefits may include higher output as a result of workers having less time off work (hence being more productive) and prevention of spread of diseases.

There are various measures that a government may adopt to overcome the problem of a lack of consumption, in the case of merit goods. One is by providing information on the benefits of consuming the products. If successful, there should be an increase in demand. In the absence of an increase in demand, the government may need to try another approach. Figure 14.3a shows the demand that will exist if left to market forces, DD, and demand based on the full benefits to society, DxDx. To persuade consumers to purchase the allocatively efficient quantity of Qx, the price of the product needs to fall to P_1. Figure 14.3b shows this being achieved, as a result of a subsidy shifting the supply curve to the right.

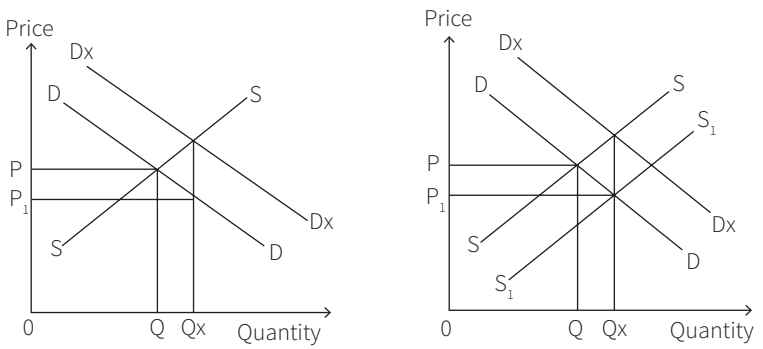


Fig. 14.3: (a) Under-consumption if left to market forces (b) The effect of subsidy

If a government thinks that consumers undervalue the product significantly or there are considerable external benefits, it may provide the product free to consumers and/or make its consumption compulsory. For example, inoculation against a range of diseases is provided free, and the wearing of seat belts in cars is compulsory in the UK.

LINK

Chapter 15.3 Government measures to address market failure (Direct provision)

GROUP ACTIVITY 1

Some African countries provide free primary education. In a number of other African countries, state schools charge fees.

a Identify two arguments for providing free primary education.

b Explain why, if left to market forces, education is likely to be under-consumed.

14.5 Demerit goods

KEY TERM

Demerit goods: products which the government considers consumers do not fully appreciate how harmful they are and so which will be over-consumed if left to market forces. Such goods generate negative externalities.

As their name suggests, **demerit goods** are the opposite of merit goods. Demerit goods are more harmful to consumers than they realise and they generate external costs. For example, cigarettes are a demerit good. Some people do not fully realise the damage smoking inflicts on their health. Their smoking also imposes costs on people around them by polluting the air, causing a number of them to develop cancer through passive smoking and generating litter.

Demerit goods are over-consumed and hence over-produced. To tackle this problem, a government could raise their price by imposing a tax on them. It could also seek to discourage consumption, by providing information about their harmful effects. Also, if it thinks that the consumption of certain products causes serious problems, it may ban them.

Recently a number of countries, including the UK and Ireland, have imposed a ban on smoking in public places. This measure is designed not only to discourage smoking, but also to protect the health of non-smokers. Other measures that governments use to reduce smoking include government sponsored health campaigns, placing health warnings on packets of cigarettes, taxation and banning the advertising of cigarettes. Bhutan has gone further than most countries in banning the purchase of cigarettes in the country.

GROUP ACTIVITY 2

Between 2007 and 2016, alcohol-related medical emergencies and hospital treatments increased by 50% in the UK. In 2015 the state funded National Health System (NHS) treated 333 010 people for medical problems caused by excessive drinking, including liver disease and severe alcohol poisoning.

a Explain why alcohol is a demerit good.

b Explain two ways which the UK government could use to reduce the consumption of alcohol.

14.6 Public and private goods

KEY TERM

Public good: a product which is non-rival and non-excludable and hence needs to be financed by taxation.

The degree of market failure is greater in the case of **public goods** than merit goods and demerit goods. Whilst too few merit goods and too many demerit goods will be produced if left to market forces, no public goods would be made.

As mentioned in Chapter 13, private sector firms will not have any incentive to make products they cannot charge for. It is not possible to exclude non-payers from taking advantage of the benefits of products such as defence. If these public goods are provided for some people, others can consume them without paying for them. Those who do take advantage in this way

are called free riders. For example, if a flood defence system is built to protect a coastal town, all homes in the area would be protected whether their owners are prepared to pay for it or not.

Besides non-excludability, public goods have another key characteristic. This is non-rivalry. This means that consumption of the product by one more person does not reduce someone else's ability to consume it. For example, one more person walking down a lit street does not reduce the benefit that other people receive from the street lights.

Public goods also usually have two other characteristics.

- They are non-rejectable. It is not possible for people to reject the services of the police, for example.
- The cost of supplying a public good to one more consumer is often zero. Defending one more person in the country will be unlikely to cost the army anything.

Most products, including merit and demerit goods, are **private goods**. These products are both rival and excludable. In these cases, it is possible to stop non-payers from enjoying the products and if one person consumes a unit of the product, someone else cannot. For example, an individual cannot take a computer out of a shop without paying for it and if they do buy it, no one else can have that particular computer. Even though primary and secondary education, and healthcare, are not directly charged for in some countries, they are nevertheless private goods. This is because they can be charged for, and also because they are rival goods (in some cases). If one child is occupying a place in a class or one patient is occupying a hospital bed, no one else can occupy these places. Of course, education and healthcare are examples of a special type of private goods – that is, merit goods.

KEY TERM

Private good: a product which is both rival and excludable.

Markets will supply private goods, although not necessarily in the right quantities. They will not, however, supply public goods. This means that public goods have to be financed through taxation. The government can then produce them itself or pay a private sector company to produce them.

LINK

Chapter 15.3 Government measures to address market failure (Direct provision)

Flood defences are a public good

GROUP ACTIVITY 3

Decide whether the following are private goods or public goods:

- biscuits
- lighthouse protection for shipping
- a flood control system
- public car parking spaces
- public library services.

LINK

Chapter 23.2 Monopoly markets

14.7 Abuse of monopoly power

Market failure can arise due to producers having more market power than consumers. If one firm dominates a market, it may not be allocatively, productively or dynamically efficient. It will lack competitive pressure to respond to consumer demands, to keep its costs low and to improve its product. If it is the only firm selling the product, that is a **monopoly**: consumers will have no choice but to buy from it, even if the price of the product is high, the product does not meet the needs of the consumers and its quality is poor.

Abuse of market failure can also occur, when there is more than one firm producing the product. If there are, for example, five major producers in a market there is a risk that they may collude to reduce competition and, in effect, act as one seller. For example, they may all agree to charge the same high price. This is referred to as **price fixing**.

KEY TERMS

Monopoly: a single seller.

Price fixing: when two or more firms agree to sell a product at the same price.

There are various ways through which governments try to promote competition and prevent firms from abusing their market power. These include removing restrictions on the entry of new firms into a market and making uncompetitive practices such as price fixing illegal. They may also stop some firms from merging, that is joining together to form one new firm, if it is thought that the merged firm will act against the interests of consumers by charging high prices and producing poor quality products.

TIP

In deciding whether a good is a private or a public good, the key thing to consider is not whether a price is charged for it, but whether a price could be charged for it.

INDIVIDUAL ACTIVITY 2

In recent years, a number of agreements have been signed between different countries to allow more airlines to fly between particular locations, including between Heathrow Airport in London and the USA. Until 2008, only four airlines – British Airways (BA), Virgin Atlantic, American Airlines and United Airlines – were permitted to fly between London and New York. Now a range of airlines including Air France, Air India, British Airways, Delta, Lufthansa, KLM and Virgin Atlantic fly between Heathrow Airport and the USA.

a What incentive would encourage more airlines to fly on a particular route?

b Explain two benefits offered by increased competition to consumers.

14.8 Immobility of resources

LINK
Chapter 2.2 Mobility of the factors of production

To achieve allocative efficiency, it is necessary for resources to move from producing products that are decreasing in demand towards those which are experiencing an increase in demand. This requires resources to be both occupationally and geographically mobile. In practice, some resources may be immobile. If, for example, demand for a country's financial services might be increasing, whilst demand for its steel may be decreasing, there may be a shortage of financial services, unemployment of workers and under-utilisation of capital equipment if resources cannot easily move between the two.

The main measures a government can take to promote occupational mobility of labour are to improve education and to provide training in the new skills needed. Also, governments can provide investment grants to make it easier for firms to change the use of land and buildings. Geographical mobility of workers can be encouraged by making it easier for them to buy or rent housing in areas where demand for labour is high. This might be achieved by construction of more houses in such areas or by the government providing financial help for those workers who move to these locations.

14.9 Short-termism

There is a risk that market forces may not result in sufficient resources being devoted to capital goods. If a country produces a high quantity of consumer products, people can enjoy a high living standard. For them to enjoy more consumer products in the future, some resources have to be diverted for making capital goods. Private sector firms may be interested in making quick profits and may not plan for times ahead. Such a short-sighted approach can result in a lack of investment. As a result, a government may have to stimulate private sector investment by, for example, cutting taxes on firms and undertake some investment itself.

Summary

You should know:

- Market failure occurs when markets do not operate efficiently.
- If left to market forces, those products whose social benefits exceed their private benefits will be under-consumed and hence under-produced. There will be over-consumption and over-production of products, if their social costs exceed their private costs.
- Consumers, workers and producers may not make the right choices due to lack of information, inaccurate information or because they have less information than the other party in a transaction (asymmetrical information).
- Merit goods would be under-consumed, if left to market forces, because people do not realise their true value to themselves and because they generate benefits to third parties.
- Demerit goods would be over-consumed in a market system. They are more harmful to the consumers than they realise and involve external costs.
- Public goods are both non-excludable and non-rival. They would not be produced in a market system, as it is not possible to stop free riders from enjoying them.
- Where there is a lack of competition, a firm may not keep its costs down, may charge a high price and may produce a poor quality product.
- The most efficient allocation of resources may not be achieved due to a lack of mobility of resources.
- Private sector firms, keen to earn high profits in the short term, may under-invest.

TIP
In discussing whether a market system works well, or any other economic issue, consider arguments for and against and where appropriate come to a conclusion.

Multiple choice questions

1 In which case is market failure occurring?

A Consumers determining what is produced
B Firms producing above the lowest possible cost
C Price falling as a result of a decrease in demand
D Price rising as a result of an increase in costs of production

2 A merit good is one which:

A has an absence of external benefits
B has higher private benefits than consumers realise
C imposes costs on those who are not involved in its production directly
D is both non-excludable and non-rival

3 Which type of goods would be over-produced if left to market forces?

A Basic necessities
B Capital goods
C Demerit goods
D Public goods

4 What is a cause of market failure?

A Competition between firms
B Consumers lacking information about where the lowest prices can be found
C Differences in pay between skilled and unskilled workers
D Resources being both geographically and occupationally mobile

Four-part question

a Define an *external cost*. **(2)**
b Explain the difference between a merit and a demerit good. **(4)**
c Analyse why the social benefit of education exceeds the private benefits. **(6)**
d Discuss whether or not trees in the rainforests of Brazil should continue to be cut down. **(8)**

Chapter 15
Mixed economic system

Learning objectives

By the end of this chapter you will be able to:

- define a mixed economic system
- explore the effects of imposing maximum and minimum prices in product and labour and markets
- explain how a range of policy measures including indirect taxation, subsidies, regulation, privatisation, nationalisation and direct provision may be used by the government to correct market failure
- discuss how effective government intervention is in overcoming the drawbacks of a market economic system
- compare expenditures by public and private sectors

Introducing the topic

Why do governments in every country intervene in the economy and why do they do this to a different extent? Can a government actually improve the performance of an economy? Do you think the measures it can take will be successful?

KEY TERM

Mixed economic system: an economy in which both the private and public sectors play an important role.

15.1 A mixed economy

Governments intervene in a mixed economic system. A **mixed economic system** has a combination of the features of a planned and a market economic system. Some firms are privately owned (in the private sector) and some are government owned (in the public sector). Some prices are determined by the market forces of demand and supply, and some are set by the government. In this type of economic system, both consumers and the government influence what is produced.

A mixed economy seeks to gain the advantages of both a market and a planned economy, whilst avoiding their disadvantages. Having some products produced by the private sector may generate choice, increase efficiency and create incentives. Benefits may also be gained as a result of state intervention. They may include:

- The government should take into account all the costs and benefits that will arise from their decisions. This should mean, for example, that even if a railway line and station would not make a profit in the private sector, they would be maintained by the state if the benefit to society is greater than the cost.
- Government can also encourage the consumption of products that are more beneficial for consumers and others than they realise by granting subsidies, providing information or passing legislation.
- Government can discourage the consumption of products that are more harmful for consumers and others than they appreciate by imposing taxes on such products, providing information or passing legislation.
- Government can finance the production of products that cannot be charged for directly, for example, defence.
- Government can seek to prevent private sector firms from exploiting consumers by charging high prices.
- Government is likely to seek to make maximum use of resources, including labour, and hence try to ensure that those people willing and able to work can find jobs.
- There is a possibility that the government will plan ahead to a greater extent than private sector firms and hence may devote more of its resources to capital goods.
- Government can help vulnerable groups, ensuring that they have access to basic necessities. It can also create a more even distribution of income, by taxing the rich at a high rate.

The government in a mixed economy may encourage a healthy diet

There are, nevertheless, risks attached even to a mixed economic system and there is no guarantee that it will perform better than the other two types of systems. Market failure can occur and government intervention may make the situation worse.

TIP

Be careful not to confuse a market economic system and a mixed economic system. In a market economic system, it is the price mechanism which allocates resources. In a mixed economic system, it is both the price mechanism and the government which decide the use of resources.

15.2 Maximum and minimum prices

A government may limit firms' ability to set their own prices by imposing price controls. A government may set a maximum ceiling on the price in order to enable the poor to afford basic necessities. To have any impact, a maximum price has to be set below the equilibrium price. Figure 15.1 shows a maximum price being set at P_x below the equilibrium price of P. Some people will now be able to purchase the product at a lower price. The problem is, however, that a shortage will be created as at this lower price the quantity demanded exceeds the quantity supplied. To prevent the development of an illegal market in the product, some method of its allocation will have to be introduced. This might be through queuing, **rationing** or even a **lottery**.

KEY TERMS

Rationing: a limit on the amount that can be consumed.

Lottery: the drawing of tickets to decide who will get the products.

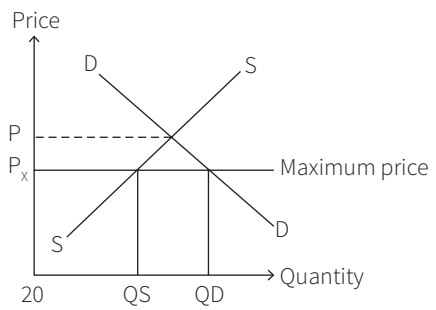


Fig. 15.1: The effect of setting a maximum price

To encourage production of a product a government may set a minimum price (P_x). This is a price floor, as it represents the lowest price producers are allowed to charge. To have an impact on a market, this will have to be set above the equilibrium price as shown in Figure 15.2. This time the problem created is a surplus, with the quantity supplied being greater than the quantity demanded. To prevent the price being driven down, the surplus will have to be bought up by the government or some other official body.

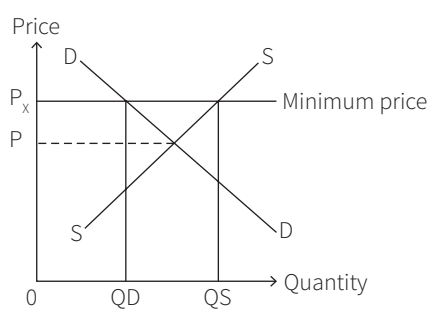


Fig. 15.2: The effect of setting a minimum price

A minimum price may also be set on the price of labour in the form of a minimum wage. The motives for such a move and its impact are discussed in Chapter 18. Minimum and maximum prices can also be used in exchange rate systems.

LINK

Chapter 18.2 Wage determination and the reasons for differences in earnings (Government policies)

Chapter 33.3 Possible government policy measures to reduce poverty

Chapter 38.1 A foreign exchange rate (A fixed exchange rate)

INDIVIDUAL ACTIVITY 1

China has recently removed price controls on most consumer goods. Their prices are now determined by the market. The prices of a number of services, however, remain under the control of the National Development Reform Commission – the chief economic planning body in the country. These include, water, oil, power, cable TV fees and parking fees for cars. The price controls are designed to protect people against monopolies and to keep inflation low. There is some evidence, however, that price controls are distorting the market and damaging the economy. Petrol stations in Southern China, for example, run out of oil quite regularly.

a How are prices determined by the market?

b How do price controls distort the market?

c Does the passage suggest that the Chinese National Development Reform Commission sets maximum or minimum prices on the products mentioned? Explain your answer.

15.3 Government measures to address market failure

Subsidies and indirect taxes

A government may subsidise a number of the country's firms. In contrast, all firms are likely to be affected by taxes in some way. Government tax firms' profits, which has an impact on the ability and willingness of firms to invest. Indirect taxes raise firms' costs of production, whilst income tax lowers consumers' disposable income, and as a result demand for firms' products.

LINK

Chapter 8.4 Conditions of supply (Causes of changes in supply)

The effect of a subsidy given to producers is influenced by the size of the subsidy and the price elasticity of demand. As explained in Chapter 8, a subsidy being an extra payment to producers, shifts the supply curve to the right. The larger the subsidy, the more increase there is in supply.

On a diagram, the size of the subsidy is represented by the distance between the two supply curves. In Figure 15.3, the subsidy per unit is SY. If all the subsidy is passed on to consumers, prices would fall to P_2. As demand is inelastic, producers have to pass on most of the subsidy to encourage an extension in demand. Price actually falls to P_1 with consumers receiving most of the benefit ($PSXP_1$) and the producers keeping the rest (P_1XYP_2).

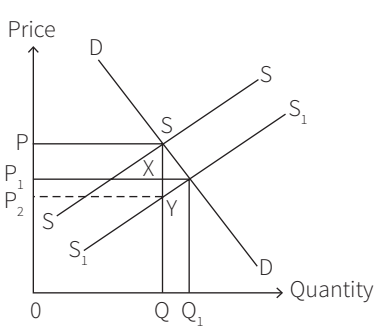


Fig. 15.3: The effect of a subsidy in the case of inelastic demand

If demand is elastic, a subsidy will have more impact on the quantity sold and less on the price. In this case, the producers can keep more of the subsidy as shown in Figure 15.4. In deciding whether to grant a subsidy, a government has to consider the opportunity cost as the money which could have been used for another purpose.

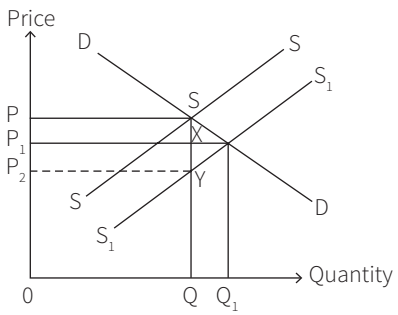


Fig. 15.4: The effect of a subsidy in the case of elastic demand

LINK
Chapter 11.4 Elastic and inelastic demand
Chapter 12.4 Elastic and inelastic supply

The impact of a tax is again influenced by the size of the tax and the price elasticity of demand. The higher the tax, the greater is its impact. A tax on a product with inelastic demand would have a greater effect on price than the quantity sold. In the case of a product with elastic demand, it is the other way round.

If a government wants to raise revenue, it should tax products with inelastic demand. This is because the quantity sold will not fall by much. For example, a tax of $2 per product may be placed on a product that initially has sales of 2000 a day. If the tax causes sales to fall to 1800, the government will receive $3600 in revenue. However, if the demand had been elastic and sales had fallen to 900, the government tax revenue would have been only $1800.

In contrast, if the government's aim is to discourage the consumption of a product (in particular a demerit good) it will be more successful if demand is elastic. This is one of the problems in using taxation to discourage smoking, as demand for tobacco products is inelastic.

TIP

In answering questions on subsidies, check whether the question is asking about subsidies to producers (which would shift the supply curve) or subsidies to consumers (which would shift the demand curve). If the question just refers to a subsidy, presume it is a *subsidy to a producer* as this is the most common form of subsidy.

INDIVIDUAL ACTIVITY 2

Emissions of carbon dioxide from the aviation industry more than doubled between 1990 and 2016 and are forecast to double again by 2030. Under international law, aviation fuel for international flights is exempt from taxation. Environmentalists argue that airlines should be taxed for the pollution they cause.

a Identify two external costs caused by air travel.

b What impact is a tax on air travel likely to have on the number of flights?

c Explain one external benefit that could arise from the operation of a new airport.

Competition policy

Competition policy seeks to promote competitive pressures and prevent firms from abusing their market power. There are a number of ways a government might be able to do this, including prevention of mergers that it thinks will not be in the interest of consumers,

removal of barriers to entry and exit into markets, regulation of monopolies and prohibition of uncompetitive practices. Uncompetitive practices may include, for example, predatory pricing and limit pricing. Predatory pricing involves a firm charging a price below the cost to drive a rival firm (or firms) out of the market. Limit pricing is setting the price low enough to discourage the entry of new firms into the market.

Environmental policies

Firms can be affected by a range of policies designed to improve environmental conditions. A government may place restrictions on the amount of pollutants emitted by firms into the air, sea and rivers. It may then fine any firms which exceed these limits.

Another policy, which has become more popular in recent years, is tradable permits. This involves a government issuing permits to firms, allowing them to pollute up to a certain limit and to sell part of their allocated limit, if they pollute less. The idea is that the cleanest firms will be able to sell most of their permits, whilst those who pollute the most will have to buy more of other firms' permits. This will reduce the costs of the cleanest firms, whilst raising the costs of the worst polluting firms. As a result, the cleanest firms should capture a higher market share and consequently, pollution should fall.

INDIVIDUAL ACTIVITY 3

The European Union, an economic bloc of European countries, runs an emissions trading scheme. Companies in certain energy-intensive sectors are issued with permits to produce a certain tonnage of carbon dioxide. If they produce less than their allowance, they can sell the excess.

a What is meant by an energy-intensive sector?

b Explain how an emissions trading scheme may reduce pollution.

Regulation

Regulation includes rules and laws which place restrictions on the activities of firms. Besides setting price controls, outlawing uncompetitive behaviour and limiting the amount of pollution emitted by a firm, a government may regulate the target audience for the product, the quality of products and mode of staff management by firms. For example a government may pass a law banning the sale of cigarettes to children. It may also require firms to ensure that the products produced by them meet certain standards and that they allow their workers a specified number of regular holidays. In addition, it may place restrictions on timing for opening/closing of shops and control the routes that buses must follow.

As a measure to correct market failure, regulations have the advantages of being backed up by law and easily understood. The government does, however, have to check that the rules and laws are being followed and this may be difficult and expensive. Also, a regulation works only if most people agree with it. For example, it would be difficult to enforce a law that everyone wears a safety helmet when riding a motorcycle if such a move is opposed by most of the riders. This is because too much time and money would need to be spent on prosecuting the offenders and the government may become very unpopular.

There are a number of other problems with imposing regulations, for example they do not directly compensate those who suffer as a result of market failure and regulations may be too restrictive – reducing market flexibility and creating barriers to entry.

Nationalisation and privatisation

To benefit the public and to improve economic performance, a government may set up an industry or **nationalise** a private sector industry. Industries owned by the government are known as state-owned enterprises, **public corporations**, and nationalised industries. The chairman and board of managers are appointed by the government. They are responsible for the day-to-day management, but are accountable to the government. There are no shareholders in state-owned enterprises. The funds come from the government, from government approved loans and from the private sector. State-owned enterprises do not always seek to make a profit. Their prime aim is to work in the public interest.

There are a number of advantages that can be claimed for state-owned enterprises. Some of them are as follows:

- State-owned enterprises base their decisions on the full costs and benefits involved.
- They can be used to influence economic activity. To boost the country's output, public corporations can be directly encouraged to increase their output.
- In cases where it is practical to have only one firm in the industry, such as rail infrastructure, a state-owned enterprise would not abuse its market power.
- Ownership of a whole industry by the government makes planning and coordination easier. For example, if the state runs the train system, it can ensure that train timetables are coordinated.
- It is important to ensure that basic industries, such as electricity and transport, survive, charge low prices and produce good quality, as other domestic industries depend on them.

There are, however, a number of disadvantages associated with state-owned enterprises.

- They can be difficult to manage and control. The large size of the organisations may mean that time has to be spent on meetings and communicating with staff, slowing down decision making.
- They may become inefficient, produce low quality products and charge relatively high prices, due to a lack of competition and the knowledge that they cannot go bankrupt.
- They will need to be subsidised if they are loss making. The use of tax revenue to support them has an opportunity cost – it could be used to spend on, say, training more teachers and nurses.

Concern about the performance of state-owned enterprises and increased confidence in market forces has led a number of countries to sell their state-owned enterprises, or part of their state-owned enterprises, to the private sector. Those supporting this move argue that private sector firms are likely to produce the products desired by consumers, at a low cost and offer them at low prices. This is because market forces provide an incentive for firms to be efficient in the form of profit and a threat of bankruptcy if they are inefficient. Besides low prices and high quality, privatisation may result in greater choice. Freedom from government regulation may reduce administration costs and enable managers to respond more quickly to changing conditions. There may, also, be less risk of under-investment in the private sector. The funds available to a public sector firm for investment will depend on the profits it earns and its ability to convince shareholders and lenders of its success. Public corporations may be kept short of funds for investment, however successful they are, if the government wants to spend the money elsewhere.

KEY TERMS

Nationalisation: moving the ownership and control of an industry from the private sector to the government.

Public corporation: a business organisation owned by the government which is designed to act in the public interest.

LINK

Chapter 13.1 The market economic system

TIP

Be careful with the word 'public'. Sometimes, it refers to the government as in 'public expenditure' and 'public sector'. It can, however, also refer to people as a whole as in the 'general public' or open to all people, as in a 'public limited company'.

LINK

Chapter 13.1 The market economic system (Private and public sectors)

Privatisation, however, is itself criticised. There is no guarantee that private sector firms will face the full pressure of market forces. Some private sector firms may not face competition – they may be monopolies (i.e. the only firm selling the product). In this case, they can be inefficient, charge high prices and produce low quality products without compromising on profits. They may not take into account the total costs and benefits to the society due to their actions. For example, they may cause pollution. Privatisation also reduces a government's control of the economy.

INDIVIDUAL ACTIVITY 4

Copy and complete the table, which compares a state-owned enterprise and a private sector firm.

	State-owned enterprise	Private sector firm
Ownership	The government	
Sector		Private
Aim	Acts in the public interest	

A comparison of a public corporation and a public limited company

Direct provision

Most governments produce at least some goods and services that they think are essential. In some countries, governments provide affordable housing to rent. Housing, education and healthcare are seen as essential services, and some governments produce them and provide them to people free of cost or at subsidised prices. Besides being essential products, education and healthcare are also merit goods.

Education is a merit good

LINK

Chapter 26.2 The reasons for government spending

Chapter 14.4 Merit goods

Chapter 14.6 Public and private goods

Chapter 13.3 The disadvantages of a market economic system

As explained in Chapter 14, a merit good is one whose benefit to consumers and others is undervalued by them. As a result, they would under-consume it and so private sector firms would under-produce it. This is why some governments produce educational and healthcare services and other merit goods such as library services. To stimulate the consumption of merit goods, governments also pay private sector firms to produce them, provide information about their benefits and, in some cases, make their consumption compulsory.

There are some products that private sector firms have no incentive to produce. This is not because people do not want them, but because they know that if they are provided, they can consume them without paying. For example, it is not possible to exclude someone from enjoying the benefits of street lighting even if they are not prepared to pay for them directly. This is why governments produce them, or pay private sector firms to make them, and raise finance through taxation. It is also interesting to note that public goods are non-rival. This means that a person enjoying the product does not reduce someone else's enjoyment. An additional family moving into a town protected by sea defences, does not reduce the defence experienced by other families.

Unfairness

Besides intervening in a market economy to correct market failure, governments also intervene on grounds of equity – that is, fairness. As mentioned in Chapter 13, income distribution can become very uneven if it is solely determined by market forces. Some people will be very rich, but some will be very poor. Private sector firms will only produce those products that people are willing to buy and able to pay for. This may mean that they will not produce products needed by the poor.

A government is likely to try and ensure that everyone in the country has access to basic necessities including housing, education and healthcare. To achieve this, it can give financial assistance to the poor and provide some essential products free to consumers. In fact, in a number of countries, state education and healthcare is provided free, not only because they are merit goods, but also to make them accessible to the poor. Such free state services are financed by taxation. Taxation and benefits may also be used to reduce income and wealth inequality.

A big difference in the income and wealth of the rich and poor, besides being unfair, can be socially divisive and can result in some workers being less productive. Some people in the country, including the elderly and the sick, may be unable to earn incomes. There may be social unrest if there is considerable income inequality. Also, if people are poor they may be less healthy, less well educated and consequently less productive.

Effectiveness of government intervention

As suggested above, government intervention can reduce market failure. There is a risk, however, that government failure may occur. It may overestimate the extent of the private benefits offered to the people by consuming merit goods and it may find it difficult to calculate the most efficient quantity of public goods to supply.

Governments can take time to make decisions and those decisions may be influenced by political factors and, in some cases, corruption. For example, a government may decide not to raise the tax on petrol, despite concerns about the environment, because it may be politically unpopular and may lose it votes.

Government intervention may also reduce economic efficiency by reducing incentives. If taxes on earned income and unemployment benefits are high, some people may be discouraged from working. High taxes on firms' profits can reduce entrepreneurs' willingness and ability to invest.

A development of effectiveness of government intervention

There is some debate as to whether public or private sector expenditure leads to a more efficient allocation of resources. Do households and firms make better decisions than the government? In practice, there are advantages and disadvantages of both private and public sector expenditure. A new airport, for example, could be built by the private or public sector. There may be a

number of advantages in it being built by a private sector firm. The profit incentive and force of competition may imply that it will build a high quality airport at low cost and in less time.

There is a risk, however, that a private sector firm may be a monopoly and hence may not be forced to keep its costs down. Thus, it may charge a high price for building the airport. Also, a private sector firm will take only private costs and benefits into account.

Using public expenditure to build an airport may also have its own drawbacks. Knowing that the state is paying, a state-owned enterprise, or private sector firm hired by the government, may not keep its costs down. A state-owned enterprise may lack the commercial expertise to complete the project on time. There may also be delays in decision making by the government to go ahead with the project. A major benefit, however, of a major investment project being undertaken by government is that it will base its decision (as to whether to proceed with it) on the consideration of all factors involved, that is social impact, costs and benefits. It is likely to carry out a **cost benefit analysis (CBA)** in the first place. This involves measuring all the private costs and benefits involved. In the case of an airport, the private costs will involve the cost of the land, the cost of the labour employed to build and run the airport, and the cost of the building material and maintenance. The major private benefit is the revenue that will be earned.

KEY TERMS

Cost benefit analysis (CBA): a method of assessing investment projects which takes into account, social costs and benefits.

Multinational companies (MNCs): companies which produce in more than one country.

After measuring the private costs and benefits, the economists carrying out a CBA, then seek to place a value on external costs and benefits. This is not an easy process. The external costs may include operation of the airport, damage to the environment, noise due to risk of accidents and traffic congestion near the airport. The external benefits may include employment in the area due to tourism and making it a more attractive as a site for domestic firms and **multinational companies (MNCs)**.

When all the calculations have been made, the social costs and benefits are compared. If social costs exceed social benefits, the government will not proceed with the project. If social benefits exceed social costs, it will go ahead (if the net social benefit is greater than that on rival projects). There will still be a debate, however, on whether it is the best use of government money. Government expenditure on one item always involves a significant opportunity cost. The money could have been spent on, for example, education.

GROUP ACTIVITY 1

The private sector in China is responsible for a growing amount of output and employment. Some economists argue that private sector firms are more profitable and efficient than the state sector.

In your group, discuss the questions below.

a How may the government benefit from private sector firms being more profitable?

b Why may private sector firms be more efficient than state-owned enterprises?

Summary

You should know:

- In a mixed economy, resources are allocated by means both of the price mechanism and government decision.
- Subsidies and taxes influence firms' output and the price they charge for their products.
- The impact of a subsidy/tax depends on its size and price elasticity of demand.
- Other types of policies which influence private sector firms are industrial, competition and environmental policies.

- Maximum prices are set below the equilibrium price. They lower prices, but lead to shortages.
- Minimum prices are set above the equilibrium price. They can help producers, but lead to surpluses.
- Regulations are backed up by law, but it can be expensive to implement them and difficult to check their violation by people. Their effectiveness is influenced by their acceptance by the people.
- Besides correcting market failures, governments intervene in economies to protect vulnerable groups and to ensure an even distribution of income and wealth.
- Expenditure by the private sector on an investment project may ensure efficiency, but a private sector firm considers only private costs and benefits.

Multiple choice questions

1 The production of which of types of goods, given below, has to be financed by the government?

A Capital **B** Consumer
C Merit **D** Public

2 A government decides to subsidise rail travel. What will be an external benefit of this move?

A A rise in government expenditure **B** Increased crowding on trains
C Lower fares for train passengers **D** Reduced congestion on roads

3 A firm, concerned about its reputation, decides to install new equipment in order to reduce the pollution created by it. What impact will this have, on private and external costs?

	Private costs	External costs
A	fall	fall
B	fall	rise
C	rise	fall
D	rise	rise

4 What is an argument for state intervention in an economy?

A To encourage the consumption of harmful products
B To increase the role of the price mechanism in allocating resources
C To make the distribution of income more uneven
D To prevent private sector firms from overcharging consumers

Four-part question

a Define a *minimum price*. **(2)**

b Explain how a maximum price will affect a market. **(4)**

c Analyse **three** ways a government could encourage consumption of a merit good. **(6)**

d Discuss whether or not consumers benefit more from a market economic system or a mixed economic system. **(8)**

Exam-style questions

Multiple choice questions

1 Who decides what is produced in a market economy?

A consumers
B managers
C shareholders
D the government

2 The table shows demand and supply schedules for bread.

Price of a loaf of bread ($)	Number of loaves demanded per week	Number of loaves supplied per week
0.80	500	180
1.00	400	240
1.20	320	320
1.40	240	500

What will be the equilibrium price for a loaf of bread?

A $0.80
B $1.00
C $1.20
D $1.40

3 Price is initially set above equilibrium. Market forces then move it towards equilibrium. As price falls, what will happen to demand and supply?

	Demand	Supply
A	contracts	contracts
B	contracts	extends
C	extends	extends
D	extends	contracts

4 Which of the following is likely to cause the price of the lamb to decrease?

A an decrease in the number of sheep farmers
B an increase in the price of beef
C a subsidy given to sheep farmers
D a successful advertising campaign for lamb

5 What effect is an increase in advertising expenditure likely to have, on the demand and supply curves of a product in the short term?

	Demand	Supply
A	decreases	decreases
B	decreases	increases
C	increases	increases
D	increases	decreases

6 The table shows the demand and supply of a book published by a Japanese firm.

Price per book ($)	Quantity demanded per week	Quantity supplied per week
10	5000	2000
15	4000	3000
20	3000	4000
25	2000	5000

When the price rises from $10 to $15 per book, what is the price elasticity of demand for the book?

A –0.4
B –0.8
C –1.0
D –2.5

7 What could make demand for a product become more elastic?

A a fall in its price
B a fall in the proportion of income spent on the product
C a decrease in the time period under consideration
D an increase in the number of close substitutes

8 What is meant by inelastic supply?

A when a fall in price causes a greater percentage fall in supply
B when a fall in price causes a smaller percentage fall in supply
C when a rise in price causes a fall in supply
D when a rise in price causes no change in supply

9 Which profit-making enterprise will not harm the environment?

A intensive farming using chemical fertilisers
B recycling waste paper into newspapers
C steel manufacturing, which generates the emission of carbon dioxide
D deforestation in tropical rainforests to obtain timber for furniture production

10 Which government measure is designed to increase external benefits?

A A decision to reduce spending on education
B A subsidy given to bus companies
C A reduction in the tax on alcohol
D The removal of fines on companies that pollute

Data response questions

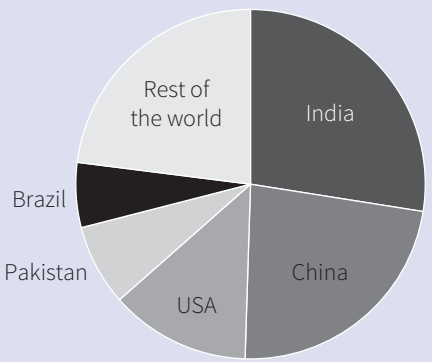
Study the source material for each question carefully and then answer Questions 1 and 2.

Source material: Transport and cotton production

There is not much traffic on the motorway between Islamabad and Lahore. This first motorway built in Pakistan was opened in 1997. It cost $1.2 billion to construct. One reason for the lack of traffic on the motorway is the existence of a rival road, the Grand Trunk Road, which is shorter and toll-free.

Improvements in road infrastructure can bring a number of benefits to an economy. These include reducing costs of production faced by a number of industries including construction materials, cotton and paper products.

Some economists, however, argue that less tax revenue should be spent by the government on roads and more on education. Higher spending on education can increase labour productivity which, in turn, can reduce unemployment and increase productive potential. Labour productivity, for example, is higher in the USA in the cotton industry than in the other major cotton producers. The pie chart shows the share of the global output of cotton (96.5 million bales) in the five largest producers in 2016.



Percentage share of global cotton production

One of the reasons for the greater productivity in the USA is that workers work with more advanced farm machinery.

India is seeking to raise its labour productivity by a range of ways. These include reducing congestion on its roads. Between 2000 and 2015, the number of cars on India's roads tripled. The higher volume of traffic is causing considerable pollution. In 2016 India's capital city, Delhi, was named by the World Health Organisation (WHO) as the world's most polluted city. The government has introduced new regulation including stricter emissions standards for new vehicles and has stopped subsidising diesel fuel in an attempt to reduce pollution. It is also increasing its investment to modernise and expand the country's train service.

1 Referring to the source material in your responses, complete all parts of Question 1.

a Identify **one** example of a capital good. **(1)**

b Explain **one** external cost. **(2)**

c Explain a possible opportunity cost of the Pakistan government building more roads. **(2)**

d Analyse the effect of improvements in road infrastructure on the market for cotton. **(5)**

e Analyse, using a production possibility curve diagram, the effect of the change in labour productivity on the economy. **(5)**

f Explain the pattern of cotton production. **(4)**

g Discuss whether or not train travel is a close substitute to road travel in a city. **(6)**

h Discuss whether or not regulation, in the form of stricter emission standards for new cars, is likely to reduce pollution. **(6)**

Source material: Jordan's search for new sources of energy

Jordan is currently trying to find new sources of energy for the country's firms, farms and households to use. It is exploring the possibility of nuclear power generation and has started to produce solar energy. The country benefits from long hours of sunshine and the solar energy industry converts sunshine into power.

Jordan is not the only country to be developing a solar energy industry. Other countries include China, Dubai, India, Italy, the UAE and the UK. Indeed, 2016 was the first year in which the world invested more in the industry than in coal and gas-fired power generation. Solar power is seen as a cleaner and more environmentally friendly source of energy. With advances in technology, the price of solar panels is falling. This is reducing the cost of producing solar energy and its price to customers, increasing its price competitiveness. In a number of countries the price of coal is rising which is reducing the sales of coal.

Jordan's agricultural industry needs a boost. The country lacks water and some of its land is not very fertile. It does produce a range of agricultural products including citrus fruits, tomatoes, cucumbers and olives. The country has benefited from an increased preference for fruit. In 2016, shortages of lemons pushed up their price and increased imports. The country could not take full advantage of this change as the price elasticity of supply was only 0.25. The table shows how the price of lemons rose throughout one month in 2016 and how this affected demand.

Price of 1 kilogram of lemons (Jordanian dinars)	Daily demand for lemons (tonnes)
1.00	200
1.20	180
1.50	144
2.00	32

The price and demand for lemons in one month in Jordan in 2016

Agriculture is a small industry in the country. It only accounted for 4% of the country's output and employed only 2% of its workers in 2016. Most of the country's workers are employed in the public sector where wages are higher. For example, in 2016 25 000 people were employed in the police force. This position is, however, changing. A number of the country's industries have been privatised and market forces are playing an increasing role in the economy.

2 Referring to the source material in your responses, complete all parts of Question 2.

- **a** Explain why sunshine is a free good. **(2)**
- **b** Explain why demand for coal is likely to become more elastic in the future. **(2)**
- **c** Calculate the effect that an 8% rise in the price of lemons would have on the demand for lemons. **(2)**
- **d** Analyse, using a demand and supply diagram, the effect of an increased preference for fruit on the market for fruit. **(5)**
- **e** Analyse how changes in the price of lemons affected the price elasticity of demand for lemons. **(4)**
- **f** Explain whether Jordan operates a market economic system or a mixed economic system. **(3)**
- **g** Discuss whether or not a rise in the price of a product, such as coal, will always be accompanied by a fall in sales. **(6)**
- **h** Discuss whether or not governments have to produce public goods such as the police service. **(6)**

Four-part questions

1 Air-India is a state-owned airline. Most airlines are, however, in the private sector and the prices they charge move between equilibrium and disequilibrium as a result of changes in market forces. The price elasticity of demand for air travel differs from other forms of transport.

- **a** What is meant by market forces? **(2)**
- **b** Explain the difference between an equilibrium price and a disequilibrium price. **(4)**
- **c** Analyse why different products have different price elasticities. **(6)**
- **d** Discuss how useful knowledge of price elasticity is to an airline company. **(8)**

2 Gym membership is a normal good. More people throughout the world are joining gyms in a bid to get fitter. This change in demand is also affecting the demand for substitutes and complements to gym membership. In some countries gym membership is taxed. Some economists argue that rather than taxing gym membership, governments should subsidise it.

- **a** Define a *normal good*. **(2)**
- **b** Explain the difference between a complement and a substitute. **(4)**
- **c** Analyse, using a demand and supply diagram, the effect of introducing a tax on gym membership. **(6)**
- **d** Discuss whether or not governments should subsidise gym membership. **(8)**

SECTION 3
Microeconomic decision makers

Chapter 16
Money and banking

Learning objectives

By the end of this chapter you will be able to:

- state the forms of money
- explain the functions of money
- describe the characteristics of money
- analyse the role of commercial banks
- discuss the importance of commercial banks
- analyse the role of central banks
- discuss the importance of central banks

Introducing the topic

Would you like more money? Most people would. What would you do with it? You might, perhaps, spend it. On the other hand, you might save it. You might even lend it to someone else. Banks lend money and look after our savings. All our lives are affected by banks more than we realise. The policy measures of some countries' central banks can change the prices of products not only in their own countries, but also in other countries.

16.1 Money

Forms of money

The main forms of **money** used in most countries are coins, notes and bank accounts. Coins are often used to make small purchases and are given in change. Notes are used to buy more expensive items. In most countries, the main form of money is bank accounts. These are responsible for the largest proportion (in terms of value) of payments made. There are a number of ways of transferring money from one bank account to another. These include direct debits, credit cards and mobile phones.

KEY TERM

Money: an item which is generally acceptable as a means of payment.

Although bank accounts are the most important form of money they are not legal tender, whereas coins (up to a certain value) and bank notes are. Legal tender is any form of payment which, by law, has to be accepted in settlement of a debt. So a person has to accept bank notes in payment, but they have the right to refuse, for example, a credit card. In practice, however, most people and firms find payment from bank accounts convenient and hence are willing to accept it.

The functions of money

Money carries out four functions. It acts as a:

- medium of exchange
- store of value
- unit of account
- standard of deferred payments.

Money allows people to buy and sell products. In carrying out this function, money is said to act as a medium of exchange. Products are exchanged for money and that money is used to buy other products.

Products → Money → Products

Enabling people to exchange products is money's most important function. Acting as a store of value means that money can be saved. It would be pointless to save eggs, for example, as eggs go bad over time and no one will be prepared to accept them a few weeks after they have been laid. Money, however, does not deteriorate with time and hence will be acceptable in the future.

Money can also be used to place a value on an item. Prices are expressed in monetary terms. A newspaper may be priced at $2 and a book at $30. This function of acting as a unit of account, or measure of value (as it is sometimes called), enables buyers and sellers to agree on what items are worth, relative to each other. In the example above, one book is worth fifteen newspapers. With $60 to spend, a person can either buy two books or thirty newspapers.

The fourth function of money is to act as a standard of deferred payments. This means that money allows people to borrow and lend. Someone who wants to buy something now can get it by borrowing money from someone who does not want to use it now. They can make an agreement about the amount to be repaid in the future.

The characteristics of money

To act as money, an item does not need to have intrinsic value. This means that it does not have to be worth something in its own right. For example, both silver and bank notes can act

as money, but whereas silver is wanted for a variety of purposes, bank notes have no intrinsic value. An item does have to possess a number of characteristics for it to serve as money. The most important one is that it should be generally acceptable. If people are not prepared to accept the item as payment, it will not be able to carry out the functions of money. To achieve general acceptability, the item has to be in limited supply. Why, for instance, should people accept twigs as payment in a country with many trees?

The other characteristics an item needs are that it is durable (will last some time), portable (can be carried around easily), divisible (can be divided into units of different values), homogeneous (every note or coin of the same value should be exactly the same) and recognisable (people can easily see that the item is money).

TIP

Do not confuse the functions and characteristics of money. Remember: the functions concern the transactions/operations that money helps to make possible, whereas the characteristics are the features which an item needs to possess to act as money.

GROUP ACTIVITY 1

Discuss how many characteristics of money each of the following items possesses:

a leaves **b** sea shells **c** gold.

16.2 Banking

Commercial banks

KEY TERM

Commercial banks: banks which aim to make a profit by providing a range of banking services to households and firms.

Banking is a major industry in a number of countries. It helps people to borrow and lend and carry out a range of other financial activities. By doing this, it enables more efficient use of resources and encourages the growth of output of economies.

Commercial banks are also called retail or high street banks. All three names tell us something about them. Commercial indicates that they are business organisations which usually seek to make a profit. Retail suggests that they are selling the public something – in this case banking services. High street tells us that these banks are found in most towns and cities. They are the banks we are most familiar with.

Commercial banks are a familiar sight in towns and cities

The role and importance of commercial banks

The three main and traditional functions of commercial banks are to accept deposits, to lend and to enable customers to make payments. The first function enables customers to keep their money in a safe place. Deposits can be made into two types of bank account. One is a current account, sometimes called a demand account or sight account. There is easy and immediate access to money in this type of account, but usually interest is not paid on money held in such an account. Customers use current accounts mainly to receive and make payments. The other type of account is a deposit or time account. A period of notice often has to be given before money can be withdrawn from this account. Interest is paid on any money held in a deposit account and customers use deposit accounts as a way of saving.

There are two main ways of borrowing from a bank. One is in the form of an overdraft. This enables a customer to spend more than what is in her or his account, up to an agreed limit. Interest is charged on the amount borrowed. This can be a relatively expensive way of borrowing and is mainly used to cover short-term gaps between expenses and income. The other way of borrowing is by taking a loan. This is usually for a particular purpose and for a particular period of time. Interest is charged on the full amount of the loan but the rate of interest is likely to be lower than that on an overdraft. A customer may be asked to provide some form of security, known as collateral, when taking a loan. This is to ensure that if the loan is not repaid, the asset given as collateral can be sold and the money recovered. In practice, though, banks try to avoid doing this by checking very carefully whether the person seeking a loan will be able to repay it. In the case of a firm, this is likely to involve a scrutiny of the firm's accounts and business plan.

The first two functions of banks, effectively borrowing from their customers and lending to them, means that they act as financial intermediaries. They accept deposits from those with more money than they currently want to spend and lend it to those with an immediate desire to spend more money than they have at hand. In other words, they channel money from lenders to borrowers.

Lenders → Banks → Borrowers

Commercial banks make most of their profit by charging a higher interest rate to borrowers than they pay to people who save their money with them.

The third main function that banks carry out is to enable their customers to receive and make payments. This is referred to as acting as agents for payments and providing money transmission services. There is now a range of ways in which people can receive money and make payments out of their accounts. These include credit cards, standing orders, direct debits, debit/credit cards and online banking.

Other functions of commercial banks

Over a period of time, commercial banks have built up a range of other services that they offer their customers. Most commercial banks now provide and change foreign currency. Customers can leave important documents, such as house deeds and small valuables, with their banks, and the banks are also likely to be willing to help with the administration of customers' wills.

They can provide advice and help with a number of financial matters, such as completion of tax forms, and the purchase and sale of shares. Many banks also now sell insurance and offer a wide variety of savings accounts, with a range of conditions and interest rates. Some now offer mortgage loans, which are loans to buy houses.

GROUP ACTIVITY 2

From 2003 to 2015 the profits of Brazil's four largest commercial banks increased by 460% from 5 billion Reais to more than 28 billion Reais. This was despite the high interest rates the banks were charging, particularly on overdrafts.

a What is an overdraft?

b Discuss whether Brazil's banks are likely to continue to earn high profits.

KEY TERMS

Liquidity: being able to turn an asset into cash quickly without a loss.

Central bank: a government-owned bank which provides banking services to the government and commercial banks and operates monetary policy.

The aims of commercial banks

The key aim of a commercial bank is to make a profit for its shareholders. The main way it does this is by giving loans (which bankers often refer to as advances). Another aim which can conflict with the key aim is what is known as **liquidity**. Banks have to ensure that they can meet their customers' requests to withdraw money from their accounts. To do this, banks have to keep a certain amount of what are called liquid assets. These are items which can be turned into cash quickly and without incurring loss. Banks earn most of the interest by giving long-term loans. However, if they tie up all their money in such loans, they would not be able to pay out cash to the customers requesting it. They have to balance profitability and liquidity – having some assets earning high interest but being illiquid, and having others earning low or no interest but being liquid.

Islamic finance

In a number of Islamic countries, commercial banks are not allowed to charge interest on bank loans. This is because many Muslims regard charging of interest, sometimes called usury, as a sin. Traditionally, Islamic banks have provided finance for firms by lending to them in return for a share in their profits. In recent years, more US and European commercial banks have sought to expand existing branches and open up new branches in Islamic countries in the Middle East and Asia. Most employ Islamic sharia scholars and experts who can issue religious edicts (*fatwas*) that approve financial products including loans. The US-based bank Citigroup, for example, has created an independent sharia advisory board of Islamic scholars to offer it advice.

INDIVIDUAL ACTIVITY 1

ICICI Bank is India's largest private sector bank. It has more than 4500 branches in India and also operates in more than eighteen other countries including China, Dubai, South Africa, UK and the USA. The bank's overseas branches aim their services mainly at Indian communities. They are, however, attracting a high number of non-Indian customers. The main reason why they have been so successful is largely because they have often paid a higher interest rate on deposits than rival banks.

a What function of a commercial bank is mentioned in the extract?

b Explain one other function of a commercial bank.

Central banks

A **central bank** is the single most important and influential bank in the country or, in the case of the European Union, the region. The five most well-known central banks in the world are probably the Federal Reserve Bank of the USA (often called the Fed), the European Central Bank (ECB), the Bank of England, the Reserve Bank of India and the People's Bank of China. Central banks are owned by governments and are responsible to them.

Role and importance of a central bank

The role a central bank plays in an economy means that it can have a significant impact on households, firms and the performance of the economy. Its functions include:

- **Acts as a banker to the government.** Tax revenue is paid into the government's account at the central bank, and payments by the government for goods and services are made out of this account.
- **Operates as a banker to the commercial banks.** Holding accounts at the central bank enables commercial banks to settle debts between each other and to draw out cash, if their own customers are taking more cash from their branches than usual.
- **Acts as a lender of last resort.** This means it will lend to banks which are temporarily short of cash.
- **Manages the national debt.** The national debt is the total amount the government owes. Over time, government debt tends to build up. The central bank carries out borrowing on behalf of the government by issuing government securities, for example government bonds, pays interest on these and repays them when they fall due.
- **Holds the country's reserves of foreign currency and gold.** The central bank keeps foreign currency and gold to influence the exchange rate.
- **Issues bank notes.** The central bank is responsible for printing notes and destroying notes which are no longer suitable for circulation. It also authorises the minting of coins.
- **Implements the government's monetary policy**. The prime aim of this is to keep inflation low and steady. This involves controlling the money supply and influencing interest rates throughout the economy, by changing the interest rate it charges on its loans. The government may instruct the central bank to increase or decrease the money supply. In some cases, central banks implement interest rate changes decided by their respective governments. In other cases, central banks have been given the responsibility to set interest rates.
- **Controls the banking system.** Many central banks play a key role in regulating and supervising the banking system.
- **Represents the government** at meetings with other central banks and international organisations such as the World Bank and the International Monetary Fund.

LINK

Chapter 38.1 A foreign exchange rate (A fixed exchange rate)

Chapter 38.5 The advantages and disadvantages of floating and fixed exchange rates

INDIVIDUAL ACTIVITY 2

The Reserve Bank of India (RBI) is the central bank of India. It is based in Mumbai and has nineteen regional offices across India. One of its functions is to implement and monitor monetary policy. Another is to ensure that the country's commercial banks follow sound policies, including sensible lending policies.

a Identify one way in which a central bank differs from a commercial bank.

b What is the key feature of a sensible lending policy?

c Explain one other function of a central bank.

TIP

When answering a question on banking, check very carefully, the type of bank focused on in the question. It is a common mistake to confuse a commercial and a central bank.

Independence of central banks

A number of governments have given their central banks the authority to decide the rate of interest. The governments still decide the aims of their central banks and give them a target for inflation. The Bank of England, for example, is instructed to use the rate of interest to achieve an inflation target of 2%. If it thinks that there is a danger that the price level will increase by more than 2%, it is likely raise the rate of interest whereas if it thinks it will fall below 2%, it is likely to lower the rate of interest.

There are a number of advantages in allowing the central bank to decide the rate of interest for banking. Unlike a national government, a central bank is unlikely to be tempted to lower the rate of interest to win public support. Most central banks also have extensive knowledge of the banking system and the appropriate rate of interest to set.

Summary

You should know:

- The four functions of money are – medium of exchange, store of value, unit of account and standard of deferred payments.
- To act as money, an item has to be generally acceptable, limited in supply, durable, portable, divisible, homogeneous and recognisable.
- The three main functions of commercial banks are – to accept deposits, lend and to enable their customers to make payments.
- Other functions of commercial banks include dealing in foreign currency, holding important documents and small valuables, helping with wills and tax, selling insurance and providing mortgage loans.
- A central bank is owned by the government. Its functions include acting as the banker to the government and commercial banks, managing the national debt, holding reserves of foreign currency, acting as lender of last resort, issuing bank notes, controlling the money supply, implementing interest rate changes, supervising the banking system and meeting with other central banks and international organisations.

Multiple choice questions

1 Money enables people to save. Which function of money does this describe?

A Medium of exchange
B Store of value
C Unit of account
D Standard for deferred payments

2 What would make an item unsuitable to act as money?

A It is easy to carry
B It is generally acceptable
C It is perishable
D It is recognizable

3 What is a function of a central bank?

A Controlling the money supply
B Deciding on the amount of government expenditure
C Issuing shares
D Raising taxes

4 What is the main aim of a commercial bank?

A To act as banker to the government
B To issue bank notes
C To make a profit
D To manage the national debt

Four-part question

a Identify **two** characteristics of money. **(2)**

b Explain **two** functions of a central bank. **(4)**

c Analyse in what circumstances a commercial bank will increase its lending. **(6)**

d Discuss whether or not gold rings can carry out the functions of money. **(8)**

Chapter 17
Households

Learning objectives

By the end of this chapter you will be able to:

- discuss the influences on the spending of households
- discuss the influences on the saving of households
- discuss the influences on the borrowing of households

Introducing the topic

Some households spend large sums of money, while others spend only a small amount each week. Some households also save large sums of money each week. Others do not save anything some weeks. The amount that households and their members borrow also varies. Why do you think there are these differences?

17.1 Spending

People spend in order to buy goods and services and to maintain a given standard of living. Among the main items involving expenditure are food, clothing and footwear, housing, gas, electricity, water, consumer durables, transport, entertainment, and leisure goods and services.

Influences on spending

KEY TERMS

Disposable income: income after income tax has been deducted and state benefits received.

Wealth: a stock of assets including money held in bank accounts, shares in companies, government bonds, cars and property.

Rate of interest: a charge for borrowing money and a payment for lending money.

The main influence on the amount spent by a person or household is **disposable income**. As income rises, people usually spend more in total, but less as a percentage of their income.

Among the other factors influencing the amount of expenditure are **wealth**, confidence, the rate of interest, the distribution of income and advances in technology.

Wealth is linked to expenditure in four main ways. One is that wealth generates income, for example, dividends from shares and this income can be spent. The second is that wealth can be cashed in by, for example, withdrawing money from a bank account or selling a car, and then spent. The third way is that people can use their wealth as security for loans. The fourth, and last way, is that wealth also affects confidence. If, for example, the value of people's housing rises, people will feel richer and are likely to spend more.

Confidence is an important influence on consumption. If people feel more optimistic about their future career prospects and income, they are likely to spend more. In contrast, if they become pessimistic about economic prospects they will tend to spend less. Expenditure may also fall if the **rate of interest** rises. This is because, it will make borrowing more expensive, encourage saving and reduce the amount spent by people who have borrowed in the past. Of course, those people who have savings will gain more income and consequently, they may spend more. Their higher spending, however, will be more than offset by reduced expenditure of others. This is because savers tend to be richer than borrowers and tend to spend a smaller percentage of their income.

The difference that exists between the proportion of income that high and low income groups spend means that a more even distribution of income and transfer of income from the rich to the poor, is likely to increase expenditure in a country.

Advances in technology may also increase expenditure. This is because new products, such as plasma TVs, encourage people to replace existing products.

Making a spending decision

Income and consumption

People can either spend or save their disposable income. When people are very poor, they cannot afford to save. All of their disposable income will be spent on buying basic necessities to survive. In fact, some may have to spend more of their income in order to be able to buy enough food, clothing and pay for housing. When people spend more than their income, they are said to be *dissaving*. This is because they are either drawing on their past savings or, more likely, borrowing other people's savings.

As income rises people are able to both spend and save more. As people become richer they buy more and better quality products. However, whilst the total amount spent rises with income, the proportion spent tends to fall. A top class footballer in Italy may earn a disposable income of $80 000 a week, whilst an unemployed person in Italy may live on benefits of $120 a week. The unemployed person may spend all of the $120. The footballer can clearly afford to spend more and is likely to do so. However, even if he has a very luxurious lifestyle, it is unlikely that he will spend all of the $80 000. If he spends $60 000 (a huge amount) he will only be spending 75% of his disposable income, whilst the unemployed person is spending 100% of his income.

The proportion of income which people spend is sometimes referred to as the **average propensity to consume (APC)**. It is calculated by dividing **consumption** by disposable income. Table 17.1 shows that as income rises, expenditure increases, but the APC falls. For example, at an income of $300 people spend 90% of their income.

Disposable income ($)	Consumption ($)	APC
100	120	1.2
200	200	1.0
300	270	0.9
400	320	0.8
500	350	0.7

Table 17.1: The relationship between disposable income and consumption

The relationship between disposable income and consumption can also be shown graphically. Figure 17.1 shows that at very low levels of income, there is dissaving. At Z level of income, all income is spent. Then as income rises past Y, saving occurs. Over the complete range of income, expenditure continues to rise but it rises at a slower rate.

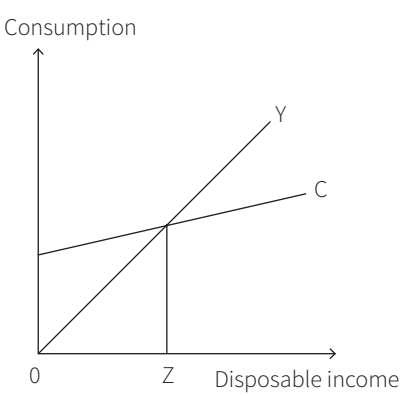


Fig. 17.1: The relationship between disposable income and consumption

KEY TERMS

Average propensity to consume (APC): the proportion of household disposable income which is spent.

Consumption: expenditure by households on consumer goods and income.

Pattern of expenditure

Different income groups tend to have different patterns of spending. The poor tend to spend a higher proportion of their income, and total expenditure, on food and clothing than the rich. This is not because they eat more and wear more than the rich! Indeed, the rich are likely to spend more in total on food, as they tend to buy a greater variety and higher quality of food, and more on clothes, as they buy more clothes and clothes of a higher quality. The amount they spend is, however, usually a smaller proportion of their income and total expenditure. A rich US family may spend $400 a week on food and clothing out of a disposable income of $2000 and a poor family may spend $40 out of a disposable income of $100. This would mean that 40% of the disposable income of the poor family goes on food and clothing, as against 20% of the disposable income of the rich one.

The rich spend more, both in total and as a proportion, on luxury items, consumer durables, entertainment and services. For example, the rich spend more on cars, jewellery, theatre trips and foreign holidays. This difference in spending patterns also occurs between countries, with spending, as a proportion of disposable income and total expenditure on food and other necessities, being higher in poor countries, while spending on luxuries forms a greater share of disposable income and total expenditure in rich countries.

Spending patterns vary within income groups in a country, according to differences in household composition, tastes and age. Households without children are likely to spend a higher proportion on recreation and eating out than households with children. Some households may value cultural activities more than others, whilst others may be keener to spend more on medical care. The retired tend to spend a higher proportion, than average, on heating and a lower proportion on transport and entertainment. On the other hand, people in their late teens and twenties often spend a higher proportion on clothing and entertainment.

TIP

It is important to distinguish between the absolute amount spent and percentage of expenditure spent on a particular item or category of items.

GROUP ACTIVITY 1

The table shows how three people spend their disposable income. Place the three people in the most likely order of disposable income from the richest to the poorest.

	Person A	Person B	Person C
Food and clothing	35%	45%	15%
Consumer durables	35%	35%	45%
Leisure goods and services	30%	20%	40%

17.2 Saving

There are a number of forms of saving. Some forms are *contractual*. This means that people sign a contract, agreeing to save a certain amount on a regular basis. The main forms of contractual saving are insurance policies and pension schemes.

Non-contractual saving includes placing money in bank and building society accounts, buying government securities, shares and property. By its very nature, non-contractual saving varies more with time and is more heavily influenced by changes in interest rates than contractual saving.

Reasons for saving

People save for a variety of reasons. Some people are what are called target savers. This means that they save to gain a particular sum of money for a particular purpose. This may be, for example, to buy a car or a home.

People also save for their retirement, for their children's future, for precautionary reasons and to provide an income or capital gain. When people retire, their income from their work stops. Even if they receive a state pension and an occupational pension, income from savings can make their retirement more comfortable.

Some people save in order to help finance their children's education or to leave them an inheritance when they die. Most people like to have some savings to cope with emergencies and unexpected problems and take advantage of any unforeseen opportunities. For example, people may lose their jobs, their drains may become blocked or they may see a car for sale (at what they regard to be a bargain price).

Some people also save to increase their current income. The more people save, the more interest they tend to receive not only in total, but also per unit saved. This is because financial institutions usually reward, disproportionately, those who save large amounts. Those who hold their savings in the form of shares, government bonds or a house, may also hope that they will benefit from a rise in the value of their assets.

Influences on saving

Among the influences on saving we have:

- **Income.** As with consumption, the main influence on saving is disposable income. As disposable income rises, the total amount saved and the proportion saved (the **savings ratio**) increases.
- **Wealth.** The wealthier people are, the easier they will find it to save.
- **The rate of interest.** A rise in the rate of interest may reduce some target saving as people can now attain their target amounts by saving less. Overall, it is likely to increase non-contractual saving as it pushes up the reward for saving.
- **The tax treatment of savings.** Tax concessions on the income earned from saving will encourage people to save. In a number of countries there are some tax free savings schemes where no tax is charged on the interest earned.
- **The range and quality of financial institutions.** The greater the variety of saving opportunities on offer, the more likely people will find a scheme that will suit them. Confidence in the ability of institutions to pay an interest and repay the amount saved, is also important.
- **Age structure.** The young and the old tend to save less than middle-aged people. The old, especially the very old, draw on their savings to ensure a reasonable living standard during retirement.
- **Social attitudes.** The attitude to saving varies between countries. In some it is held in high esteem, while in others people prefer to spend most of their income when they receive it.

KEY TERM

Savings ratio: the proportion of household disposable income that is saved.

INDIVIDUAL ACTIVITY 1

The table below shows the household savings ratios of selected countries in 2016.

Country	%
Bangladesh	9.8
Chile	20.0
India	23.2
Pakistan	10.5
South Africa	–0.80

a Explain how South Africa could have had a negative savings ratio.

b What was the rate of household expenditure in Bangladesh, in the period shown?

c What might Chile's and Bangladesh's savings ratios suggest about the relative income levels in the countries in this period?

d Explain the possible reasons, other than differences in disposable income, which may be responsible for the savings ratio of India being higher than that of Pakistan.

TIP

Remember that a rise in disposable income enables people to both spend and save more.

KEY TERM

Average propensity to save (APS): as savings ratio, it is the proportion of household disposable income that is saved.

Income and saving

Saving is disposable income which is not spent. As already noted, it is not possible to save below a certain income level. As disposable income rises, both the total amount saved and the proportion of disposable income saved increases. Table 17.2, using the same disposable income and consumption figures as in Table 17.1, shows this. The **average propensity to save (APS)** is calculated by dividing saving by disposable income. The APS is the same as the savings ratio or savings rate.

Disposable income ($)	Consumption ($)	Savings ($)	APS
100	120	–20	–0.2
200	200	0	0.0
300	270	30	0.1
400	320	60	0.2
500	350	150	0.3

Table 17.2: The relationship between disposable income and saving

At an income of $500, people save 30% of their disposable income. It is useful to note that APS plus APC add up to 1, since disposable income is either spent or saved. Figure 17. 2 shows the usual relationship between disposable income and saving.

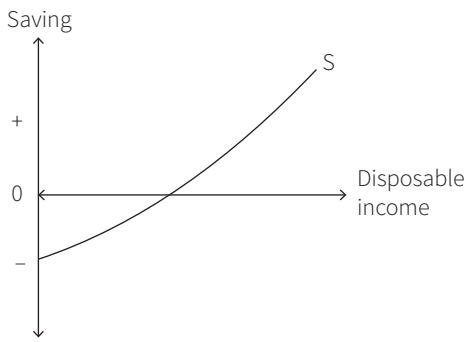


Fig. 17. 2: The relationship between disposable income and saving

INDIVIDUAL ACTIVITY 2

The table shows the relationship between disposable income, consumption and saving.

a Copy and complete the table

b Calculate what proportion of income is spent when income is (i) $100 and (ii) $300

Income ($)	Consumption ($)	Saving ($)
100	100	
200	180	
300	240	
400	280	
500	300	

INDIVIDUAL ACTIVITY 3

The savings ratio in Japan fell from 14% in 1990 to 11.6% in 2016. One reason given for this by Japanese economists was the rise in the number of retired people in relation to the number of workers.

a Define the term *savings ratio*.

b Explain why the savings ratio may fall due to a rise in the number of retired people in relation to the number of workers.

17.3 Borrowing

Borrowing moves income from people who do not want to spend it now to those who need more money than they currently have. Some people who run into financial difficulties borrow in a bid to maintain their living standards. These people hope that their income will soon rise, so that they can repay the loans and overdrafts. Other people borrow in order to, for example, buy a car or go

KEY TERM

Mortgage: A loan to help buy a house.

on a foreign holiday. Most people who buy a house have to borrow some of the money to finance their purchase. The loan they take out is called a **mortgage**. People may also borrow to finance their own education or the education of their children or to cover healthcare costs.

Borrowing enables people to spend more than their current disposable income. It does, however, involve a cost in the form of interest which has to be paid. It is also usually a temporary situation as loans and overdrafts have to be repaid. The poor, whilst sometimes having a greater need to borrow, are likely to experience greater difficulty in borrowing. This is because they will have less security to offer for any loan and lenders may be more worried about their ability to keep up interest payments and repay any loan. The influences affecting the amount of money people borrow include:

- **The availability of loans and overdrafts.** The easier it is to borrow, the more likely people are to borrow.
- **The rate of interest.** A rise in the rate of interest will increase the cost of borrowing, which is likely to reduce borrowing.
- **Confidence.** The more confident people are about the future, the more they will anticipate earning in the future. They may adjust their spending patterns now, financing some of their extra expenses by borrowing with an expectation that their higher income will enable them to repay their loans.
- **Social attitudes.** Some countries and some groups within countries are more concerned about the risks of people getting into debt by borrowing, than others.

Summary

You should know:

- Disposable income can be spent or saved.
- As disposable income rises people spend more in total, but less as a percentage.
- Saving rises in total and as a percentage of disposable income, as people get richer.
- The poor spend a higher proportion of their total expenditure and disposable income on food and other basic necessities than the rich, but a smaller proportion on luxuries.
- The influences on expenditure include the level of disposable income, wealth, confidence, the rate of interest, the distribution of income and advances in technology.
- Some forms of saving are contractual and some are non-contractual.
- People save to buy certain products, to make their retirement more comfortable, to help their children, to cope with unexpected expenses and opportunities and to earn income.
- The main influences on saving are income, wealth, the rate of interest, the tax treatment of saving, the range and quality of financial institutions, age structure and social attitudes.
- By borrowing, people can spend more than their disposable income.
- The key influences on borrowing are the availability of loans, the rate of interest, confidence and social attitudes.

Multiple choice questions

1 Interest rates rise. How is this likely to affect household savings and expenditure?

	Saving	Expenditure
A	rise	rise
B	rise	fall
C	fall	fall
D	fall	rise

2 What is most likely to cause a rise in expenditure in an economy?

A A rise in confidence
B A rise in income tax
C A reduction in wealth
D A more uneven distribution of income

3 What can cause a fall in saving?

A A rise in the range of financial institutions
B A fall in the rate of interest
C A rise in disposable income
D A fall in the rate of tax imposed on earnings from saving

4 What must be occurring, if consumption is less than disposable income?

A Borrowing
B Income levels are falling
C Income is being redistributed to the poor
D Saving

Four-part question

a Identify the *opportunity cost of saving*. **(2)**
b Explain **two** reasons why young workers may save less than middle-aged workers. **(4)**
c Analyse the causes of a reduction in borrowing by households. **(6)**
d Discuss whether or not an increase in income will cause an increase in spending. **(8)**

Chapter 18
Workers

Learning objectives

By the end of this chapter you will be able to:

- analyse the wage and non-wage factors that influence an individual's choice of occupation
- analyse how wages are determined
- discuss the influences on wage determination
- draw demand and supply diagrams to analyse labour markets
- discuss the reasons for differences in earnings
- discuss the advantages and disadvantages of division of labour/specialisation for workers, firms and the economy

Introducing the topic

What career would you like to follow? What influences your choice? One factor, although it is unlikely to be the only one, is the wages you might expect. Why do you think some careers get paid more than others? Do you think you would enjoy a job if it was very specialised?

18.1 Factors that influence an individual's choice of occupation

There is a wide range of factors that may influence a person's choice of jobs. These can be divided into wage factors (also called monetary or pecuniary factors), non-wage factors (also referred to as non-monetary or non-pecuniary factors) and limiting factors.

Wage factors

An important influence on what jobs a person decides to do, is the pay on offer. The total pay a person receives is known as his **earnings**. In addition to the basic wage, earnings may also include overtime pay, bonuses and commission.

KEY TERMS

Earnings: the total pay received by a worker.

Wage rate: a payment which an employer contracts to pay a worker. It is the basic wage a worker receives per unit of time or unit of output.

Wages

Wages may also be referred to as pay or salaries. Generally, the higher the **wage rate** on offer, the more a person would want to do the job. Higher pay is one reason why working for example as a doctor is a more attractive prospect than working as a cleaner.

The wages of many workers are based on a standard number of hours. Some workers' wages, however, vary according to the number of hours they work (a time rate system) or the amount they produce (a piece rate system). The former benefits the employers as they can easily estimate their labour costs and also the workers as they can bargain collectively about the rate paid. However, a time rate system does not reward hard work since it pays lazy and industrious workers the same.

This problem is overcome by a piece rate system, which pays workers according to their output. This system can only be used if a worker's output can be easily measured and the product is standardised. This is why, though it is sometimes found in agriculture and manufacturing, it is very uncommon in the services sector. For example, it could not be applied to doctors. One doctor may carry out three operations, while another may perform eight operations in a day. The three operations, however, might have been more complex operations. Less supervision may be needed with a piece rate system, but workers may focus on quantity at the expense of quality. Also, the health of some workers may suffer, if they feel pressurised to produce a high output.

Doctors are well-trained and well-paid

Overtime pay

Overtime pay may be paid to the workers who work in excess of the standard working week. It is usually paid at a higher rate. Overtime can benefit both employees and employers. Workers with young families, for example, are often anxious to increase their pay and may be attracted by jobs that offer regular overtime. It enables employers to respond to higher demand without taking on new workers, until they are sure that the higher demand will last. It is easier, less costly and less disruptive to reduce overtime than to sack workers if demand declines.

There is a risk, however, that workers may become tired as a result of working for longer hours. If this does occur, the output they produce over the day may not increase and even its quality may fall. In fact, some employers have found that when workers are aware that they are going to be working for longer hours, they pace themselves accordingly and put less effort into each hour.

Bonuses

A bonus is an extra payment. It can be paid to workers who produce above a standard amount, finish a project ahead of time, secure a profitable contract or contribute to higher profits in some other way. Bonuses can provide an incentive for workers to produce both a high and a good quality output or to stay with a firm. However, care has to be exercised while awarding them. Resentment may be caused if it is thought that they are awarded unfairly. This resentment can lead to those workers who do not receive a bonus becoming demotivated. As a result, the quantity or quality of their output may fall and some workers may resign.

Those people who welcome a challenge and have confidence in their own ability may be attracted to the jobs which pay bonuses. In recent years, there have been instances when very large bonuses have been paid to some workers in the financial sector, particularly in merchant banking.

Commission

Commission is often paid to the sales people. It involves them receiving a proportion of the value of the sales they make. Sometimes, this is in addition to a standard wage and sometimes it makes up their total payment.

INDIVIDUAL ACTIVITY 1

Chinese airlines are among the fastest growing, carrying more and more passengers. The country's airline industry is expanding more rapidly than the rate at which pilots can be trained. As a result, it is seeking to recruit foreign pilots. In 2016, some Chinese airlines were offering pilots from other countries wages of $320 000 a year. This was four times the average wage of Brazilian pilots and approximately one and half times the average wage of US pilots.

a How much were pilots paid, on average, in Brazil in 2016?

b Explain what would be expected to happen to pilots' pay in Brazil.

Non-wage factors

People do not always choose the highest paid job on offer. They take into account a range of other factors including job satisfaction, type of work, working conditions, working hours, holidays, pensions, fringe benefits, job security, career prospects, size of firm and location.

Job satisfaction

Nursing and teaching are not particularly well-paid occupations and a number of those undertaking them can earn more in other occupations. These jobs, however, can provide a high degree of job satisfaction. Nurses and teachers can derive considerable satisfaction from improving people's health and educating students. Of course, some jobs provide both high pay and a high level of job satisfaction. Brain surgeons, TV presenters and top football players all have interesting, challenging and well-paid jobs.

Type of work

Most people would rather do non-manual than manual work. This is because it is physically less tiring and generally offers more mental stimulation. Non-manual work also tends to be better paid. People also like to do jobs which enjoy a high status and most of these tend to be non-manual. For example, university professors tend to be held in higher regard than stone-masons. Some people are prepared to undertake dangerous work, for example deep sea diving and bomb disposal, but most people prefer to work in a safe environment.

Working conditions

Working conditions are an important determining factor. People like to work in pleasant surroundings, with friendly colleagues and enjoying regular breaks.

Working hours

Occupations vary in terms of the number of hours expected from workers and the timing of those hours. Managers and senior officials tend to work for longer hours than shop workers.

Some occupations offer workers the opportunity to work part-time, say 16 hours a week. A number of them also offer flexible working hours, where workers alter the hours they work from week to week. This is sometimes to suit the employer, with workers working longer hours when demand for the product is high, and sometimes to suit the worker. An example of the latter case is parents engaging in term-time working.

Nurses, emergency plumbers and catering staff often work unsociable hours, for example they often have to work at nights and in the evenings when other people are resting or enjoying themselves. Some nurses and other workers, including factory workers, work in shifts. This involves working at different periods of the day and night. There may be day and night shifts or three eight-hour shifts during the day.

Holidays

In a number of countries, the law sets down a minimum length of holiday entitlement for full-time workers. Even in these countries, however, the length of holidays varies. Teaching is one occupation, well known for the length of holidays on offer. In fact, one reason for people preferring to go for teaching is the benefit of long holidays. Having time off when their children are on holiday is an advantage for parents.

Pensions

With people living longer in most countries, occupational pensions are becoming an important influence. There is considerable variation in the provision of occupational pensions. Some jobs provide their workers with generous pensions, whilst others do not provide any financial help post retirement. In many countries, for example, the police can retire relatively early on good pensions, whereas casual agricultural workers are unlikely to receive a pension. Generally, workers in the public (state) sector receive more generous pensions than those in the private sector.

Fringe benefits

Fringe benefits are the extra benefits provided to workers by their employers. These may include free or subsidised meals, health schemes, and social and leisure facilities. Playing for a major football club, such as Real Madrid or Manchester United, will bring a wide range of fringe benefits. The club may, for example, buy a player a house, arrange insurance for him and get his car repaired.

Job security

Many workers are attracted by occupations which offer a relatively high degree of job security. A high degree of job security means that workers are unlikely to be made redundant. Such a situation is more likely to occur in occupations where there is a high demand for the product and workers are given long-term contracts. High demand for the product would mean that employers would not want to get rid of the workers and a contract would restrict their ability to do so. Civil servants often have a high degree of job security, but casual workers, including agricultural and building workers, have little job security and can be dismissed at short notice.

Career prospects

People are often prepared to accept low wages at the start of their careers, if they think there is a good possibility that they will gain promotion to a well-paid and interesting post. Trainee accountants, barristers and doctors are not usually highly paid and often work for long hours at the beginning of their careers. They will expect, however, that as they pass examinations and gain experience, their pay will rise to a relatively high level and their work will become more challenging.

Size of the firms

People are often attracted to jobs in large firms and organisations. This is because such firms and organisations often pay more and offer better career prospects, job security and fringe benefits than smaller ones. For example, a number of people are attracted to work for the country's civil service for such reasons. On the other hand, some people prefer to work for smaller firms. This is because they believe that the atmosphere will be more friendly than in a large firm. Studies have found that labour relations are indeed better in small factories and offices.

Location

People may choose an occupation which is close to their home. This will mean that they do not have to spend much money or time on travelling to and from work.

GROUP ACTIVITY 1

In 2016, in the UK five of the most popular occupations for new graduates were in accountancy, the civil service, investment banking, public sector healthcare (the National Health Service NHS) and public sector broadcasting (BBC). Some of those who applied for jobs with the NHS were attracted by what they considered to be good career opportunities provided by the country's largest employer.

a How many of the five occupations mentioned are in the public sector in the UK?

b Apart from good career opportunities, explain two possible reasons for a graduate to opt for a job in public sector healthcare.

Limiting factors

Most people would obviously like a well-paid, satisfying job with good working conditions, long holidays, generous fringe benefits, good career prospects and a convenient location.

In practice, however, people's choice of occupation is limited by a number of factors including the qualifications they have, the skills they possess, the experience they have and the place where they live. The more occupationally mobile and the more geographically mobile people are, the wider the choice of occupation available to them.

Occupational choice and opportunity cost

Choosing to take up one occupation involves rejecting other occupations. Workers have to decide what is important to them. A worker may be prepared to give up a well-paid job, or the opportunity to undertake such as job, in favour of a less well-paid job that offers more job satisfaction. For example, a merchant banker may resign to take up a job as a teacher.

GROUP ACTIVITY 2

a Identify three reasons why a person may want to be a pilot.

b Explain three reasons why a person, despite wanting to be a pilot, may not succeed in becoming a pilot.

TIP

If you are asked a question about *non-wage factors* influencing a person's choice of occupation it is not relevant to include a discussion on wages, overtime, pay, bonuses or commission.

18.2 Wage determination and the reasons for differences in earnings

The key factors that determine the amount of pay received by workers and why some workers earn more than others are the demand for and supply of their labour. Other influencing factors include the relative bargaining power of employers and workers, government policies, public opinion and discrimination.

Demand and supply

The higher the demand for and the lower the supply of workers in an occupation, the higher the pay is likely to be. Figure 18.1 shows the markets for doctors and for cleaners.

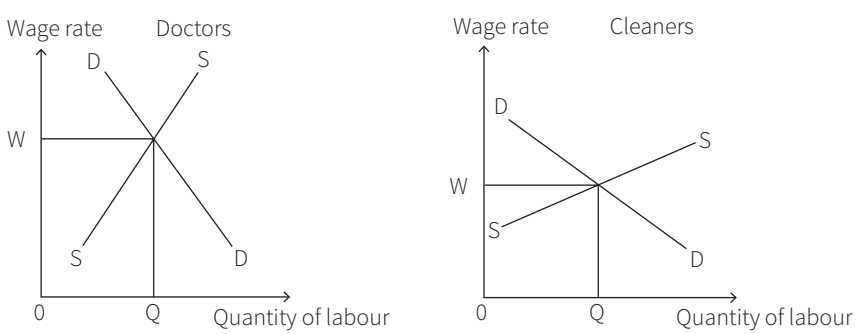


Fig. 18.1: The market for doctors and cleaners

The supply of doctors is low, relative to demand for their services. There is only a limited number of people with the necessary qualifications, and the willingness and ability to undertake a long period of challenging training to become doctors.

It might also be expected that the supply of cleaners would be low and their pay high, as few people would want to work as cleaners. Cleaning is not a particularly interesting job as it can involve unsociable hours, not very pleasant working conditions and does not usually offer good career prospects. The supply of cleaners, nevertheless, is often high relative to their demand. This is because although some people may not be keen to work as cleaners, they do so because the job does not require any qualifications, or special skills, and only a minimum amount of training is sufficient. This often results in the supply of cleaners being high relative to their demand.

Unskilled workers are generally paid less than skilled workers. Demand for skilled workers is high, whilst their supply is low. There are two main influences on the demand for workers. One is the amount of output they can produce and the other is the price for which that output can be sold. Skilled workers are usually highly productive, producing both a high quantity and a high quality of output per hour. Also, the supply of skilled workers is usually lower than that of unskilled workers.

Supply also explains why some workers, who are involved in dangerous jobs, are well-paid. There is a limited supply of people who are willing to work as steeplejacks. To try to overcome this reluctance a number of employers pay workers undertaking this job a higher rate than that paid to other building workers.

The supply of workers in the agricultural and manufacturing sectors varies. In a number of countries, including some Asian and African countries, there is a surplus of agricultural workers which results in lower agricultural wages. The demand for and price of products made by manufacturing industries tend to increase at a more rapid rate than those made by primary sector industries. This helps to keep the demand for manufacturing workers high, relative to agricultural sector workers.

Demand and supply of workers in the private and public sectors vary among countries. In some countries the public sector is expanding, whilst in others it is contracting. A number of people like working in the public sector because of greater job security, longer holidays and better pensions than those offered in the private sector.

INDIVIDUAL ACTIVITY 2

Under which circumstance is an occupation likely to be well-paid?

a Demand is high/low.
b Supply is high/low.
c Workers have strong/weak bargaining power.
d Workers are skilled/unskilled.

Relative bargaining power of employers and workers

Wages are likely to be higher in occupations where workers have strong bargaining power relative to employers. This is more likely to be the case if most of the workers are members of a trade union or professional organisation which can bargain collectively on their behalf.

Most doctors and lawyers, for example, belong to their professional organisation which represents their interests. This bargaining position is strengthened by the knowledge that they would be difficult to replace with other workers and any industrial action taken by them would have serious consequences. In contrast, most cleaners and waiters do not belong to a workers' organisation. Their bargaining strength is further reduced by the fact that they are usually widely dispersed and therefore are not organised as a strong union. Also, they can be replaced by other workers relatively easily.

LINK

Chapter 19.2 The role of the trade unions

Public sector workers in many countries, including the UK and India, are more likely to belong to a trade union or professional organisation than private sector workers. In some cases, this can be attributed to the fact that the governments are more willing to negotiate with trade unions than private sector employers. In other cases, it is because public sector workers find it easier to get together to operate as one bargaining body.

Public sector workers also tend to be affected by government labour market policies more than their counterparts in the private sector. These policies may or may not raise wages. A government is, for example, likely to ensure that all its workers are paid at, or above, a **national minimum wage (NMW)**, whereas some private sector firms may seek to find ways round such legislation. If, however, a government introduces a policy to hold down wage rises in a bid to reduce inflationary pressure, it is in a stronger position to restrict the wage rises of its own workers.

KEY TERM

National minimum wage (NMW): a minimum rate of wage for an hour's work, fixed by the government for the whole economy.

Government policies

Government policies affect wages in a variety of ways. A government clearly influences the wages of those workers whom it employs in the public sector. Its policies also influence wages in the private sector. Those policies, which promote economic growth, tend to push up wages throughout the economy as they increase demand for labour.

Specific government policies may have an impact on particular occupations. For example, if a government introduced a law requiring car drivers to take a test every ten years, demand for driving instructors would be likely to rise, pushing up their wages.

Government labour market policies, of course, directly affect wages. One of the best known labour market policies is a national minimum wage (NMW). Such a policy imposes a wage floor, making it illegal to pay a wage rate below that. The aims behind a NMW are to raise the pay of low-paid workers and reduce poverty. To have any impact on wages, however, a NMW must be set above the market equilibrium wage rate. This has led some economists and politicians to argue that it may cause unemployment.

LINK

Chapter 15.2 Maximum and minimum prices

Figure 18.2 shows a NMW raising the wage rate from W to W_1, but this causes unemployment since the supply of people wanting to work at this wage rate exceeds demand for workers' labour.

Other economists argue that a NMW can raise both the wage rate and employment. They think that paying a higher wage to workers will raise their motivation and hence their productivity. This, combined with higher demand for products arising from higher wages, can increase demand for labour. Figure 18.3 shows that if demand for labour does increase,

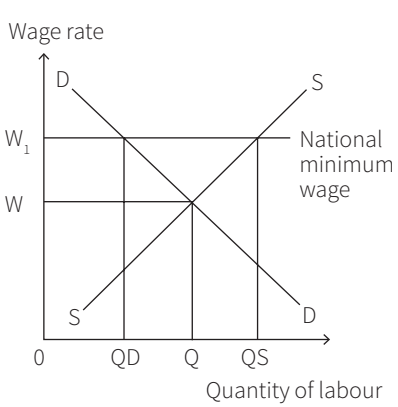


Fig. 18.2: A national minimum wage causing unemployment

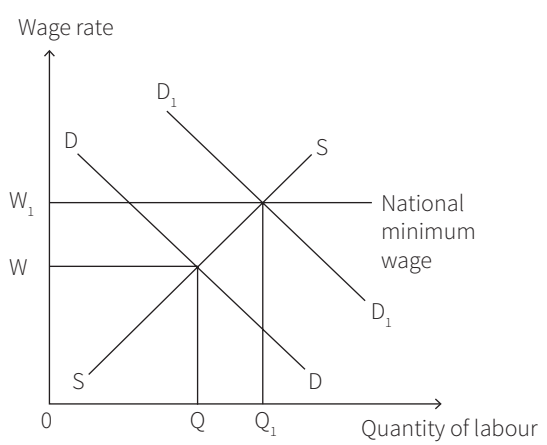


Fig. 18.3: A national minimum wage with rising employment

KEY TERM

Wage differential: the difference in wages.

the equilibrium wage rate may be equal to NMW. The introduction of a NMW may provoke some workers, who were previously being paid a wage at or just above that level, to press for a wage rise to maintain their **wage differential**.

Public opinion

Public opinion tends to consider that jobs which involve long periods of study and training should be highly rewarded. There are variations in how some occupations are regarded in different countries. For example, engineers are more highly regarded in Scandinavian countries than they are in the UK. A number of occupations are generally held in high esteem, like doctors and nurses.

Public opinion can influence wage rates in a number of ways. One is through the wage claims made by the workers. For example, firefighters tend to regard their labour as being worth as much as that undertaken by the police. So, if the police get a pay rise, firefighters are likely to seek an equivalent pay rise. In most countries, there is usually a league table of wage rates, with workers trying to maintain their position in the table and challenging it only occasionally. So, for example, a hotel porter is unlikely to expect to be paid as much as a veterinary doctor.

Public opinion can put pressure on a government to revise the wages it pays to the public sector workers. The public may, for example, believe that nurses should be more highly rewarded. A government seeking to gain or maintain popular support, may feel compelled to raise nurses' pay. There are a relatively high number of women working in the nursing profession. In some countries, social attitudes are against working women. In these countries, it is harder for women to find employment and they may be receiving significantly less pay than their male counterparts.

Firefighting can be a high-risk job

INDIVIDUAL ACTIVITY 3

Factory workers in the garment industry in Mauritius are among the lowest paid in the country, earning less than the workers in mining, transport and construction industries. Most work on 'piece rates' and are paid a productivity bonus if they exceed their production targets. As their pay is so low, they are heavily dependent on both bonuses and overtime. These extra payments take their earnings above the national minimum wage.

a Define:

i piece rates

ii national minimum wage.

b Explain three possible reasons why factory workers in the garment industry may receive lower pay than construction workers.

Discrimination

Discrimination occurs when a group of workers is treated unfavourably in terms of employment, the wage rate, the training received and/or promotional opportunities. For example, some employers may be reluctant to have female workers. The lower demand will result in lower pay, as shown in Figure 18.4.

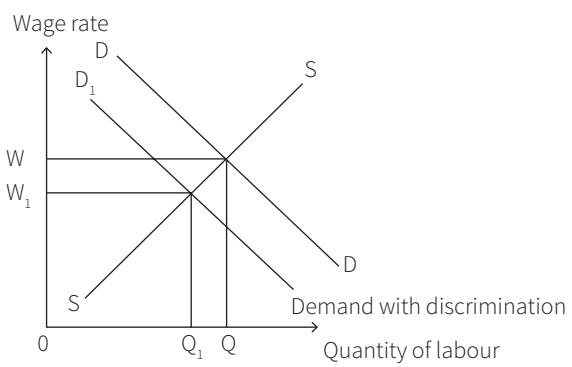


Fig. 18.4: The effect of discrimination

Increasingly, governments are making such discrimination illegal. Nevertheless, throughout the world, women are (on average) still paid less than men. One reason for this is that women tend to work for fewer hours than men. Even when hourly wage rates are considered, however, women still get paid less than men. There are a number of reasons for this:

- women tend to be less well qualified than men, but this is changing in a number of countries, with more women now going to university than men
- they tend to be more heavily concentrated in low-paid occupations
- they are less likely to belong to trade unions and professional organisations
- they are still discriminated against.

INDIVIDUAL ACTIVITY 4

Latin America has a relatively large gender gap. In 2015 men of the same age and level of education earned 17% more than women. In that year, female workers in Chile earned 18% less than male workers. A smaller proportion of women are working in Chile, as compared to any other Latin American country. To encourage more women to enter the labour force and to generate greater wage equality, the Chilean government introduced a new labour code for the public sector. This forbids pregnancy tests, removes the need for mention of a candidate's gender from job applications and requires training during normal working hours. The government is encouraging the private sector to adopt the code as well.

a Identify two possible reasons for a smaller proportion of working women in Chile than in other Latin American countries.

b What evidence is there in the passage that suggests female workers are being discriminated against in Chile?

18.3 Why earnings of occupations change over time

Change in demand and supply of labour

The main reason for a rise or, less commonly, fall in earnings is a change in demand and/or supply of labour. Other reasons include changes in the stages of production, in bargaining power, changes in government policies and changes in public opinion.

Changes in the demand for labour

If demand for labour increases, earnings are likely to rise. The wage rate may be pushed up and bonuses increased. In addition, more overtime may become available and it may be paid at a higher rate too. Figure 18.5 shows the wage rate for bricklayers being driven up by an increase in demand for their labour.

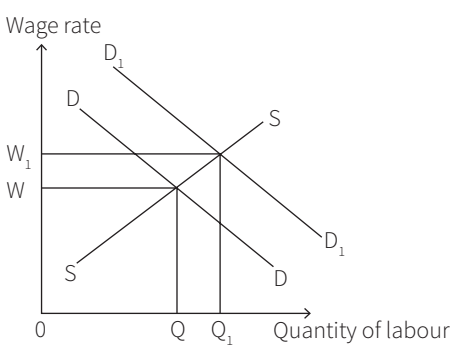


Fig. 18.5: The effect of an increase in the demand for bricklayers' labour

What can cause demand for labour to increase? There are three main causes:

- An increased demand for the product. Demand for labour is a *derived demand*. The higher the demand for products, the greater is the number of workers employed.
- A rise in labour productivity. Higher productivity increases the return from hiring workers.
- A rise in the price of capital. In some occupations, it is possible to substitute labour for capital in the production process.

In recent years, the pay of pilots has been rising throughout the world. More and more people are travelling by plane for both business purposes and leisure and hence the demand for the services of pilots is increasing. In contrast, in many countries the wages of agricultural

workers have been falling relative to the wages of other workers. Demand for their labour has been declining, in part, because it has become easier to replace it with capital.

Changes in the supply of labour

A decrease in the supply of labour for a particular occupation or sector would be expected to raise the wage rate. Among the factors that could cause a decrease in the supply of workers are:

- A fall in the labour force. If there are fewer workers, in general, it is likely that an individual business will find it more difficult to recruit workers.
- A rise in the qualifications or length of training required to do the job. This will reduce the number of people eligible for the job.
- A reduction in the non-wage benefits of a job. If, for example, the working hours or risks involved in doing a job increase, fewer people are likely to be willing to do it.
- A rise in the wage or non-wage benefits in other jobs. Such a change would encourage some workers to switch from one occupation to another.

Consider the situation shown in Figure 18.6. One of the reasons the wage for accountants, for example, has risen is that the qualifications to do the job have increased. The figure shows the wage rate of accountants being driven up by a decrease in the supply of their labour.

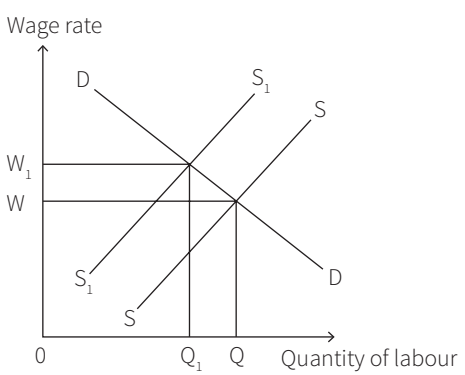


Fig. 18.6: The effect of a decrease in the supply of accountants' labour

GROUP ACTIVITY 3

India has one of the fastest growing air travel markets in the world. It started to expand in the mid-1990s when the monopoly of state-run Air India ended, and Jet Airways and Air Sahara were launched. Its rate of expansion accelerated in 2003 with the founding of Air Deccan, a 'no-frills' carrier. In 2005 Spice Jet, Go Air and Kingfisher Airlines were launched. More airlines have been established since then, for example, Pinnacle Air (2013), TruJet (2015) and Air Carnival (2016). This expansion has resulted in an increase in the number of pilots and air cabin crew employed in India.

a Explain what is likely to have happened to the wages of air cabin crew in India in recent years.

b Explain two reasons for pilots receiving a higher remuneration than the air cabin crew.

Changes in the stages of production

People working in the **primary sector** are usually less well-paid than those who work in **secondary** and **tertiary** sectors. This is because the workers in the primary sector tend to be less skilled and have fewer qualifications. In addition, as an economy develops, the demand

LINK

Chapter 10.2 The effect of changes in supply

TIP

It is essential that you apply demand and supply analysis when analysing the differences in earnings between different occupations.

KEY TERMS

Primary sector: covers agriculture, fishing, forestry, mining and other industries which extract natural resources.

Secondary sector: covers manufacturing and construction industries.

Tertiary sector: covers industries which provide services.

LINK

Chapter 20.1 Classification of firms (The stages of production)

for primary sector workers usually declines. Demand for workers in the secondary sector first increases and then demand for workers in the tertiary sector. Some of the best-paid workers are employed in the tertiary sector. For example, some judges and some surgeons receive high wages. Demand for a number of services rises with income and high qualifications needed to carry out a number of jobs in the tertiary sector. Of course, there are some high-paid workers in the primary sector and some low-paid workers in the tertiary sector. For example, an engineer working in the oil industry is likely to earn more than a shop assistant.

Changes in bargaining power

A change in unions' bargaining power or willingness to take industrial action can affect earnings. If, for example, a government removes a ban on agricultural workers forming unions collectively, it would be expected that the wage rate of agricultural workers would rise. In recent years, the greater willingness of UK NHS workers to threaten industrial action is perceived as one reason why their pay has increased.

Changes in government policy

The pay of public sector workers is likely to rise if the government decides to expand the public sector. A government decision to reduce road building, in contrast, may reduce the wages of those working for private sector road construction firms. Among the other ways a governments can change wage rates are:

- Raising the national minimum wage will increase the pay of low-paid workers.
- Despite the rise in supply, improved education may actually raise the wages of skilled workers, as it may increase their demand more than the supply. This is because employing more skilled workers should reduce costs of production and increase international competitiveness. If this is the case, demand for products produced by the country's firms should increase and more multinational companies (MNCs) may be attracted to set up their franchises in the country.
- Government policies on immigration can also affect wages. Making it easier for foreign people to live and work in the country should increase the supply of labour. If a country is short of, for example, information and communication technology (ICT) workers, giving more permits to foreign workers should increase the supply of such workers and may hold down wage rises too.
- The introduction of government anti-discrimination laws may help to increase the career prospects and wages of disadvantaged groups. Such legislation works, in part, by changing public opinion. In many countries attitudes to working women have become more favourable, and the capabilities and services of female workers are being valued more. This, combined with a rise in the educational performance of women, has raised women's wages.
- Advances in technology can alter wage rates. In some cases, it can put downward pressure on wage rates by reducing demand for workers. For example, new technology in the banking industry has reduced the number of banking staff in a number of countries. In other cases, however, new technology can increase wages. For example, the development of online shopping in recent years has increased demand for the services of delivery drivers.

Changes in public opinion

Over time, how occupations and those who undertake them are viewed can change. For instance, one possible reason why the relative pay of journalists has fallen in the USA in recent years is a decline in the regard the occupation is held in. In contrast, the pay and job

opportunities for women is increasing in Saudi Arabia where social attitudes about women working are changing.

GROUP ACTIVITY 4

In a number of countries there is discrimination against workers on the grounds of age. Both young and old workers are paid less than other workers in these countries.

a Explain three reasons which may explain payment of lower wages to workers who are discriminated against.

b How may a payment of higher wages to both older and younger workers reduce labour costs?

Changes in the earnings of individuals over time

The earnings of most individuals change over the course of their working life. For most workers, their earnings increase as they get older. This is because the longer people work, the more skilled and productive they tend to become. Their productivity increases because they gain experience and, in some cases, undertake training. Becoming more skilled increases a worker's chances of being promoted and achieving higher pay.

Some workers may switch employers in pursuit of higher pay. Others may agree to take on more responsibility for more pay. There is a chance, however, that earnings may fall with passage of time. Some older workers may decide to give up working overtime and some may switch to less demanding work. The firm, or organisation, that people work for, may experience financial difficulties and as a result it may reduce wages and cut bonuses.

18.4 The extent to which earnings change

The magnitude of the change in the wage rate due to a change in demand for, or supply of, labour is influenced not only by the size of the change, but also by the **elasticity of demand for labour** and the **elasticity of supply of labour**. Figure 18.7 shows demand for labour increasing by the same amount in both cases, but the impact on the wage rate is much greater in the first case where both the demand for and supply of labour are inelastic.

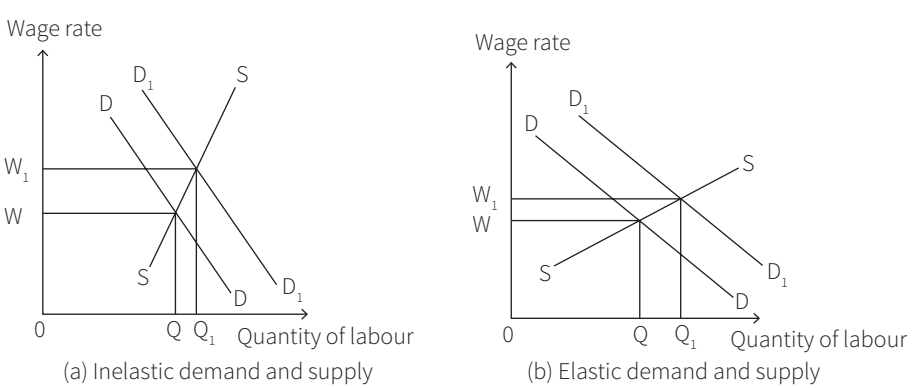


Fig. 18.7: The influence of elasticity on the effect of an increase in demand for labour

KEY TERMS

Elasticity of demand for labour: a measure of the responsiveness of demand for labour to a change in the wage rate.

Elasticity of supply of labour: a measure of the responsiveness of the supply of labour to a change in the wage rate.

The main determinants of elasticity of demand for labour are:

- **The proportion of labour costs in total costs.** If labour costs form a large proportion of total costs, a change in wages would have a significant impact on costs and hence demand would be elastic.

- **The ease with which labour can be substituted by capital.** If it is easy to replace workers with machines, demand would again be elastic.
- **The elasticity of demand for the product produced.** A rise in wages increases costs of production which, in turn, raises the price of the product. This causes demand for the product to contract and demand for labour to fall. The more elastic the demand for the product is, the greater the fall in demand for it and hence for workers, making demand for labour elastic.
- **The time period.** Demand for labour is usually more elastic in the long run as there is more time for firms to change their methods of production.

There are also a number of determinants of elasticity of supply of labour. These are:

- **The qualifications and skills required.** The more qualifications and skills needed, the more inelastic supply will be. For example, a large increase in the wage paid to brain surgeons will not have much effect on the supply of labour. This is especially true in the short-run, as it will take years to gain the required qualifications and experience.
- **The length of training period.** A long period of training may put some people off the occupation. It will also mean that there will be a delay before those who are willing to take it up are fully qualified to join the labour force. Both effects make the supply of labour inelastic.
- **The level of employment.** If most workers are employed already, the supply of labour to any particular occupation is likely to be inelastic. An employer may have to raise the wage rate quite significantly to attract more workers and encourage the workers employed in other occupations to switch jobs.
- **The mobility of labour.** The easier workers find it to change jobs, or to move from one area to another, the easier it will be for an employer to recruit more labour by raising the wage rate. Thus, higher mobility makes the supply elastic.
- **The degree of vocation.** The stronger the attachment of workers to their jobs, the more inelastic supply tends to be in case of a decrease in wage rate.
- **The time period.** As with demand, supply of labour tends to become more elastic over time. This is because it gives workers more time to notice wage changes and to gain any qualifications or undertake any training needed for a new job.

GROUP ACTIVITY 5

In which of the following occupations is the demand for labour likely to be elastic?

a An occupation in which technical progress is continually developing inexpensive labour-saving techniques.

b An occupation which produces a product with inelastic demand.

c An occupation belonging to a labour-intensive industry.

d An occupation where labour costs form a small proportion of total costs.

KEY TERM

Specialisation: the concentration on particular products or tasks.

18.5 Specialisation and division of labour

Specialisation means the concentration on particular products or tasks. Instead of making a wide range of products, a firm may specialise in manufacture of one or a few products. A doctor may concentrate on treating patients with heart problems, rather than on treatment of patients suffering from a number of illnesses.

Division of labour occurs when workers specialise. Instead of producing the whole good or service, a worker carries out one particular task. The key advantage claimed for specialisation of workers is lower cost per unit produced. There are a number of reasons why this may occur.

KEY TERM

Division of labour: workers specialising in particular tasks.

One is that workers can specialise on the task they are best at and by doing this task over and over again, they become very good at it – *practice makes perfect*. This should mean that output per worker increases. Concentrating on a particular task means that workers can be trained more quickly and knowledge about handling a full range of equipment may not necessarily be imparted to them. Time may be saved as workers will not have to move from one job to another and breaking down the production process into a number of tasks may also make it easier to design machinery, enabling the use of workers alongside.

There is no guarantee, however, that specialisation of workers will reduce unit costs. In fact, there is a risk that specialisation may result in higher unit costs. Workers may get bored doing the same task each day. This may lead to workers not taking care of their work and as a result making more mistakes. Boredom may also result in workers taking more days off due to sickness and staying in jobs for shorter periods of time. Having specialised staff may make it difficult for other workers to cover up for those absent, due to both sickness and training.

Workers who are specialised can become very skilled and, if their skills are in high demand, can earn high wages. Concentrating on a particular task or job can enable workers to pursue their specific interests. For example, doctors who are interested in brain disorders and injuries may seek to specialise in neuroscience. Specialising in less demanding jobs can reduce the pressure on workers. Some factory workers who have undertaken the same task for some years may be able to do it almost without thinking.

There are, however, possible disadvantages to workers being specialised. One is that demand for their services may fall and if they are trained or practised in only one job, they may encounter problems getting another job. For example, if demand for coal falls, coal miners may not find it easy to gain jobs if the jobs on offer require different skills. Also, as previously mentioned, concentrating on a particular task or job may be boring and may not make full use of a worker's talents.

Whether division of labour will benefit an economy will depend on how it affects the cost of production and the quality of the products produced. If it does result in lower costs of production and higher quality, the economy may benefit from being able to produce and export more goods and services.

GROUP ACTIVITY 6

Rank the following educational workers, starting with the most specialised and finishing with the least specialised:

a a teacher of 19th-century French history
b a supply teacher who covers for absent teachers
c a teacher of 19th-century history
d a teacher of history
e a teacher of history and geography.

Summary

You should know:

- A person's choice of occupation is influenced by both wage and non-wage factors.
- High wages tend to attract more workers.
- Some workers may receive earnings above the basic wage or salary rate because of overtime pay, a bonus or commission.
- People are likely to be attracted to occupations which offer high job satisfaction, good working conditions, short working hours, long holidays, generous pensions, good fringe benefits, job security, good career prospects, size of firm, type of work and a convenient location.
- The main reasons for some occupations receiving higher earnings than others is because demand for their labour is higher, whilst supply of their labour is lower.
- Demand for workers is likely to be high if they are productive and the price, for which their output can be sold, is high.
- The supply of labour can be limited by the need for high qualifications, long periods of training and special skills.
- Other reasons for higher earnings include workers having strong bargaining power, favourable government policies, workers being held in high public esteem and absence of discrimination.
- A national minimum wage is likely to raise the wages of the low-paid, but its effect on unemployment are uncertain.
- Skilled workers are paid more than unskilled workers because they are more productive and are in shorter supply.
- An increase in demand for labour will increase the wage rate.
- The main causes of an increase in demand for labour are an increased demand for the product produced, a rise in labour productivity and a rise in the price of capital.
- A decrease in the supply of labour will increase the wage rate.
- Among the causes of a decrease in the supply of labour are a fall in the labour force, a rise in the qualifications or length of training required, a reduction in the non-wage benefits of a job, a rise in the wage or non-wage benefits of other jobs.
- Extent of change in wage rates, as a result of a change in the demand for and supply of labour, is influenced by the elasticity of demand for and supply of labour.
- The main determinants of elasticity of demand of labour are the proportion of labour costs in total costs, ease of substitution of labour by capital and the elasticity of demand for the product produced.
- The main determinants of elasticity of supply of labour are the qualifications, skills and length of training required, the level of employment, the mobility of labour and the degree of vocation.
- An increase in bargaining strength, more favourable government policies and more favourable public opinion can increase the wage rate.
- Division of labour can reduce cost per unit produced, as workers can concentrate on what they are best at, training costs are reduced, money spent on equipment is decreased, workers' time can be saved and the production process can be mechanised.
- Firms may experience certain disadvantages due to specialisation of their workers. One is that workers may get bored due to the monotonous nature of their job and as a result make more mistakes, take time off work and possibly even resign. Another is that firms may find it difficult to cover for the workers who are off sick or under training.

Multiple choice questions

1 What is a non-wage factor that may influence a person's choice of occupation?

A Bonuses

B Fringe benefits

C Overtime payments

D Salary

2 Piece rates are a method of payment to workers based on:

A How many hours they work

B When they work

C The output they produce

D The output they sell

3 What would increase a woman's choice of occupation?

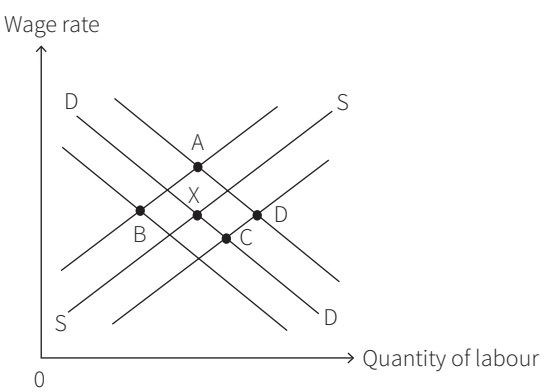
A An increase in her qualifications

B An increase in transport costs

C An increase in gender discrimination

D An increase in housing costs

4 Point X in the diagram shows the market for electricians in a country. There is an increase in the number of people who train as electricians. What is the new equilibrium point?



Four-part question

a How are wages determined in a free market? **(2)**

b Explain **two** benefits a chef may gain from specialising in cooking one type of food such as Thai food. **(4)**

c Analyse, using a demand and supply diagram, how an increase in demand for restaurant meals may affect the wage rate that chefs are paid. **(6)**

d Discuss whether or not an increase in the wage rate paid to chefs will encourage more people to become chefs. **(8)**

Chapter 19
Trade unions

Learning objectives

By the end of this chapter you will be able to:

- define a trade union
- analyse the role of trade unions in the economy
- describe the factors that influence the strength of trade unions
- discuss the advantages and disadvantages of trade union membership for workers, firms and the government

Introducing the topic

In 2016, 82% of workers in Iceland belonged to a **trade union**, while only 10% of workers in the USA were trade union members. What is a trade union? How do they affect the economy? Would you have the opportunity to join a trade union in your country? If so, would you choose to join?

KEY TERM

Trade union: an association which represents the interests of a group of workers.

19.1 Types of trade unions

Trade unions are associations of workers formed to represent their interests and improve their pay and working conditions. There are four main types of trade unions. These are:

- **Craft unions.** These represent workers with particular skills, for example plumbers and weavers. These workers may be employed in a number of industries.
- **General unions.** These unions include workers with a range of skills and from a range of industries.
- **Industrial unions.** These seek to represent all the workers in a particular industry, for example, those in the rail industry.
- **White collar unions.** These unions represent particular professions, including pilots and teachers.

Unions in a country often belong to a national union organisation. For example, in India, a number of unions belong to the All India Trade Union Congress (AITUC). This is the oldest and one of the largest trade union federations in the country. A number of them also belong to international trade union organisations such as the International Trade Union Confederation which has 340 affiliated organisations in 163 countries.

GROUP ACTIVITY 1

Decide what type of union the following Indian and UK unions are:

a Andhra Pradesh Auto Rickshaw Drivers and Workers' Union
b The National Union of Teachers
c Transport and General Workers' Union
d Pondicherry Textile Labour Union
e Punjab Breweries Workers' Union
f Musicians Union.

19.2 The role of the trade unions

Trade unions carry out a number of functions. They negotiate on behalf of their members on wages, job security, working hours and working conditions. These areas can include basic pay, overtime payments, holidays, health and safety, promotion prospects, maternity and paternity rights, and job security. Depending on the circumstances, unions may be trying to protect or improve workers' rights.

They also provide information on a range of issues for their members, for example on pensions. They help with education and training schemes, and may also participate in measures designed to increase demand for the product produced and hence for labour. Some trade unions also provide a range of benefits to their members including strike pay, legal advice and sickness pay. In addition, many get involved in pressurising their governments to adopt legislation that will benefit their members or workers in general, such as fixing a national minimum wage.

KEY TERM

Collective bargaining: representatives of workers negotiating with employers' associations.

Collective bargaining

An individual worker may not have the skill, time or willingness to negotiate with her or his employer. A worker is also likely to have limited bargaining power. If she, or he, presses for a wage rise or an improvement in working conditions, the employer may be able to dismiss her, or him, and take on someone as a replacement. Trade unions enable workers to press their claims through **collective bargaining**. This process involves negotiations between union officials, representing a group of workers, and representatives of employers.

Trade union representatives negotiate with an employer

The basis of wage claims

There are a number of arguments a trade union can put forward while asking for a wage rise.

- One is that the workers deserve to be paid more because they have been working harder and have increased productivity.
- Another argument is that an industry whose profits have risen can afford to pay higher wages to its workers. This argument may be linked to the first one as the workers are likely to have contributed to the higher profits.
- A third argument is known as the *comparability argument*. A union may argue that the workers it represents, should receive a pay rise to keep their pay in line with similar workers. For example, a union representing nurses may press for a wage rise if doctors are awarded higher pay. The nurses' union is unlikely to ask for the same pay as doctors. What is more likely is that they will seek to maintain their wage differential. So, if before the rise of doctors' pay, nurses received a wage that was 60% of the doctors' earnings, they are likely to demand a rise that will restore this differential.
- A fourth argument that is often put forward is that workers need a wage rise to meet the increased cost of living. If the price level is rising by 6%, workers will need a wage rise of at least 6% to maintain their wage's purchasing power. This is sometimes referred to as maintaining their **real income** (income adjusted for inflation).

KEY TERM

Real income: income adjusted for inflation.

INDIVIDUAL ACTIVITY 1

In May 2016 university lecturers in the UK rejected a 1.1% pay-off and went on strike. The lecturers wanted higher pay, claiming that their pay had fallen behind similar workers.

a What type of argument were the university lecturers advancing?

b What type of union is likely to represent university lecturers?

19.3 Factors affecting the strength of a trade union

Among the factors which empower a trade union are:

- **A high level of economic activity.** If output and income in a country are increasing, most industries are likely to be doing well, and so should be able to improve the pay and conditions of workers. When output reaches high levels and most people who want to work are employed, firms will be competing for workers. To retain their existing workers

and to recruit more workers, firms are likely to be more willing to agree to union requests for higher pay and better working conditions.

- **A high number of members.** The more members a union has, the more funds it is likely to have to finance its activities. Also, the employers will find it difficult to replace union labour by non-union labour in such a scenario.
- **A high level of skill.** Unions representing skilled workers are in a relatively strong position, as it can be difficult to replace their workers with other skilled workers and expensive to train unskilled workers.
- **A consistent demand for the product produced by the workers.** Unions that represent workers making goods and services that are essential to consumers are in a strong position to bargain.
- **Favourable government legislation.** A union will be in a stronger position if laws allow trade unions to take industrial action.

Industrial action

If negotiations break down on wage claims, or disputes occur over working conditions, there is a range of **industrial actions** that can be initiated by a union in support of its claim. There could be an overtime ban, with workers refusing to work longer than their contracted hours. Workers may also 'work to rule'. This involves workers undertaking the tasks required by their contracts only.

The most well-known form of industrial action, however, is a **strike**. This involves workers withdrawing their labour. A strike can be official or unofficial. An official strike is one which is approved and organised by the union. In contrast, an unofficial strike is one which has not been approved by the union. This can occur when the strike is called by local union representatives and is over before the union has the time to approve it, or in the cases when the union does not agree with the action. Strike action can be measured in three main ways. These are:

- the number of strikes
- the number of workers involved
- the number of working days lost.

The last measure gives the clearest indication of the impact of the strike on the economy. Governments often try to prevent strikes by encouraging unions' and employers' representatives to go to arbitration, in case negotiations break down. Arbitration concerns the involvement of a third party seeking to reach an agreement. The arbitrator may be a government body or an independent third party chosen by both the parties.

KEY TERMS

Industrial action: when workers disrupt production to put pressure on employers to agree to their demands.

Strike: a group of workers stopping work to put pressure on an employer to agree to their demands.

GROUP ACTIVITY 2

In each case decide which union is likely to be more successful, if it pursues strike action:

a A trade union representing fire fighters or a union representing flower sellers.

b A trade union representing skilled workers or a union representing unskilled workers.

c A trade union striking during a period of high unemployment or a union striking during a period of low unemployment.

Influence on the supply of labour

Besides negotiating and taking industrial action, trade unions can seek to raise the wages of its members by restricting the entry of new workers into the industry, occupation or craft. Unions may seek to do this by insisting that new recruits have high qualifications or may operate a closed shop. The latter occurs when employers can only employ those workers who are members of the union or who agree to join the union. (In contrast, an open shop occurs when an employer is free to employ members or non-members of the union.)

19.4 Advantages and disadvantages of trade union membership

Firms and workers

Firms can be harmed by industrial action undertaken by trade unions. The amount of revenue lost and damage done to the reputation of a particular firm by a strike will be influenced by the effect on rival firms and the length of the strike. A firm's costs and flexibility will also be adversely affected by overtime bans and 'work to rule' action.

Workers taking industrial action

Trade unions, however, can provide benefits to the firms. It is less time consuming, less stressful and hence cheaper to negotiate with workers as a group, than to negotiate with each worker individually. Unions also provide a useful channel of communication between employers and workers. They often encourage workers to engage in education and training which raises productivity and promotes improved health and safety. They also provide an outlet to vent workers' discontent and channel their grievances to the employers, thereby reducing conflict. Unions can also benefit non-unionised labour as any improvement in pay and working conditions usually applies to non-members also.

TIP

In discussing trade unions, it is useful to refer to the role of trade unions (if any) in your country.

19.5 Trade unions and the government

The role and importance of trade unions varies across the world. In fact, in some countries, including Saudi Arabia, trade unions are illegal. Industrial workers in Pakistan have the right to form trade unions, but a number of laws restrict their actions and hence their effectiveness. The government can, for example, ban any strike that may cause 'serious hardship for the community, endanger the national interest or has continued for 30 days or more.

Trade union membership, as a percentage of the labour force, is relatively high in Mauritius. Approximately 20% of workers are in a union. The rate is, however, lower in the country's Export Processing Zones (EPZs). In these areas, managers often make it difficult for workers to join a union by threatening to close down their factories if workers join them.

Trade unions are more powerful in European countries. They are particularly strong in the Nordic countries of Finland and Sweden, where union membership is high. Union membership fell in the UK in the 1980s and 1990s for two main reasons. One was legislation which reduced trade union rights and the other was a rise in unemployment, particularly in sectors that had been heavily unionised. In more recent years, membership has grown among women workers. It continues to be higher among public sector workers (55% in 2016) than private sector workers (14% in 2016). France has one of the lowest union densities in Europe, with approximately only 8% of workers belonging to trade unions (in comparison to 25% in the UK). French unions do, however, exert considerable power. This is because the unions enjoy public support, are willing to take strike action and French laws secure the importance of their role. For example, in France, unemployment benefit is set by an independent body which has to negotiate with unions, and union representatives have the right to a seat on firms' works councils.

Summary

You should know:

- There are four main types of trade unions. These represent workers with particular skills, from particular industries, from particular professions and from a diverse background.
- Trade unions seek to protect and enhance workers' pay, working hours and working conditions.
- Trade unions allow workers to bargain more effectively through collective bargaining.
- Trade unions can argue for a wage rise on a number of grounds including appropriate returns for hard work, apportionment of higher profits earned, relatively higher wages of similar workers and increased cost of living.
- A trade union will be stronger the more members it has, the higher the level of economic activity the firm/industry enjoys, the more skilled the workers are, the more public support it enjoys, the lower the contribution of wage costs to total costs, and the fewer substitutes there are for the product produced.
- Industrial action includes overtime bans, 'work to rule' and strikes.
- Trade unions may seek to raise wages by restricting the supply of labour through demanding high qualifications and restricting the employment to union members (closed shop).
- Trade unions may also lower firms' costs by making it easier for the employers to communicate with workers and by encouraging the workers to participate in schemes which raise productivity.
- The role and importance of trade unions vary in different countries. Some countries do not allow trade unions to operate whereas in other countries trade unions are relatively powerful.

Multiple choice questions

1 In which circumstance is a trade union most likely to be able to raise the wages of its members?

A It is easy to replace workers with machines

B It is easy to replace unionised labour with non-unionised labour

C The profits of the firms in the industry are low

D The share of labour costs in total costs is low

2 Which measure of strike activity indicates workers' sentiment about the strike?

A The number of strikes

B The number of workers involved

C The amount of working time lost

D The amount of revenue lost by firms

3 Which of the following is not a function of a trade union?

A Improving working conditions

B Increasing shareholders' dividends

C Raising members' wages

D Representing members' interests

4 A trade union is pressing for a wage rise for its members. Which of the following would increase its chances of being successful?

A An increase in productivity

B An increase in unemployment

C A decrease in profitability

D A decrease in union membership

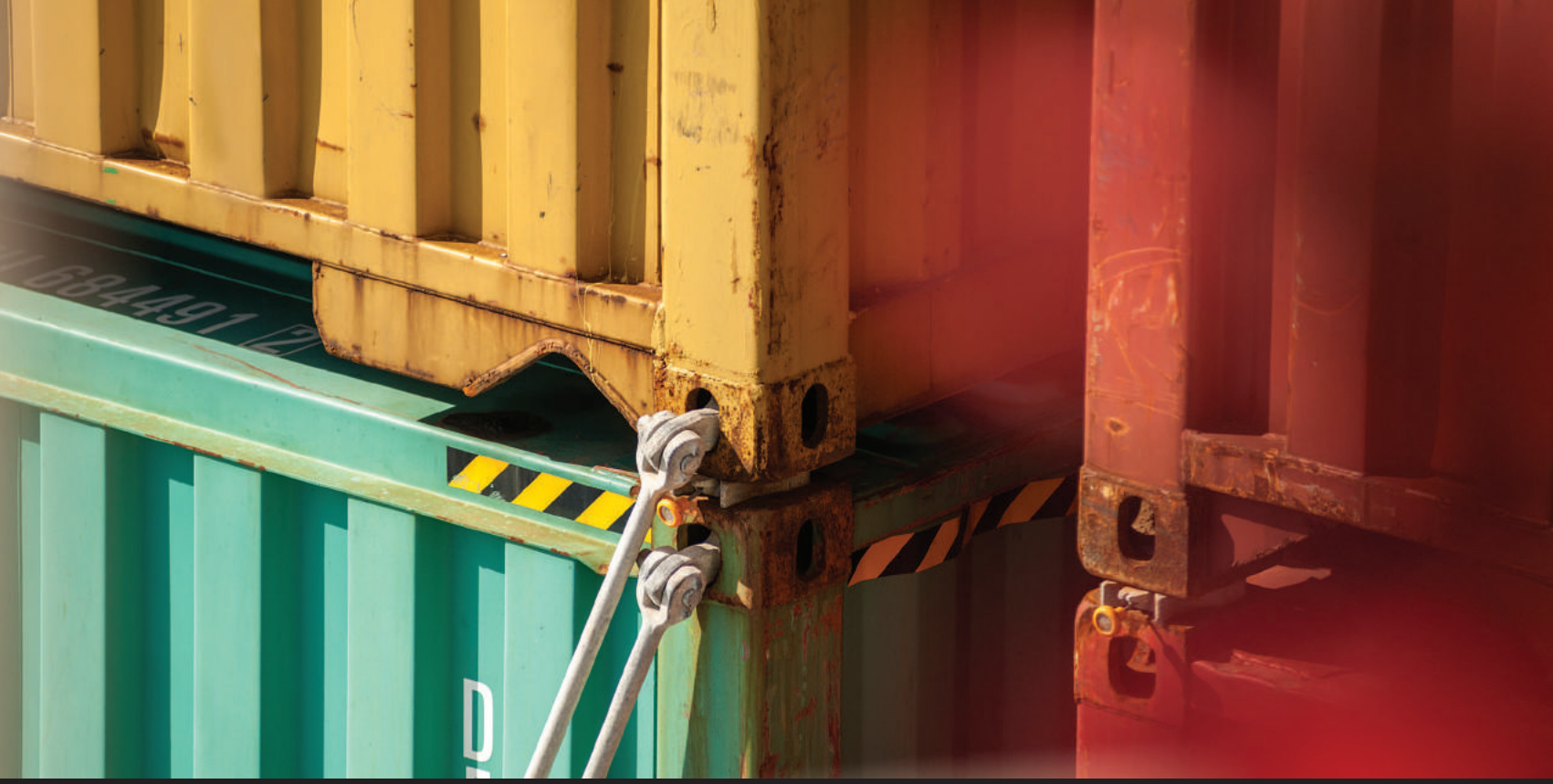
Four-part question

a Define *trade union*. **(2)**

b Explain **two** reasons why trade union membership may decline in a country. **(4)**

c Analyse the factors that influence the strength of a trade union. **(6)**

d Discuss whether or not trade unions benefit workers. **(8)**



Chapter 20
Firms

Learning objectives

By the end of this chapter you will be able to:

- describe the classification of firms in terms of sectors, ownership and size
- analyse the reasons for the existence of small firms
- discuss the advantages and disadvantages of small firms
- describe the causes of the growth of firms
- discuss the advantages and disadvantages of horizontal, vertical and conglomerate mergers
- discuss how internal and external economies and diseconomies of scale can affect a firm/industry as the scale of production changes

Introducing the topic

In every country, there are firms of different sizes. Each year new firms are set up. Some of these go out of business quickly, while others grow to become large firms with names you are probably familiar with. Large firms can have significant advantages, but there are cases where small firms are still able to compete with them.

20.1 Classification of firms

Fig. 20.1: Production in the banking industry

Industries consist of firms producing the same product. The car **industry**, for example, includes firms such as Volvo, General Motors and Toyota. A firm is a business entity, also sometimes referred to as a business organisation. Firms can have a number of plants. A plant is a production unit or workplace such as a factory, farm, office or branch. A firm may own several plants. The major car firms have factories throughout the world. Figure 20.1 shows the level of production in the banking industry.

Firms may be classified in a number of ways. One is in terms of the stage of production they produce in. Another is in terms of who owns the firms and a third is in terms of the size of the firms.

KEY TERMS

Industry: a group of firms producing the same product.

The quaternary sector: covers service industries that are knowledge based.

The stages of production

Industries and their firms and plants operate at different stages of production.

- The **primary sector** is the first stage of production. It includes industries, such as agriculture, coal mining and forestry, involved in the extraction and collection of raw materials.
- The **secondary sector** is involved with the processing of raw materials into semi-finished and finished goods – both capital and consumer goods. It covers manufacturing and construction. The building, clothing and steel industries are in this sector.
- The third stage of production is called the **tertiary sector**. Industries producing services such as banking, insurance and tourism, come into this sector.
- Some economists identify a fourth sector also, the **quaternary sector**. This is really a sub-section of the tertiary sector. It covers those service industries which are involved with the collection, processing and transmission of information – essentially information technology.

As economies' income grows, their industrial structure usually changes. Poor countries often have a large proportion of their output accounted for and the labour force employed in industries in the primary sector. As they develop, the secondary sector becomes more important and gradually the tertiary sector accounts for most of their output and employment. Table 20.1 shows the contribution to output of the three sectors in five selected countries in 2016.

Country/ Region	Primary %	Secondary %	Tertiary %
Pakistan	21	20	59
India	17	30	53
China	8	41	51
USA	1	19	80
Hong Kong	0	7	93

Table 20.1: Percentage contribution to selected countries' output by different industrial sectors

GROUP ACTIVITY 1

The following is a list of industries. Decide the sector to which each industry belongs:

a chemicals
b education
c fishing
d retailing
e telecommunications
f transport

Ownership of firms

In a market economic system, most firms are in the private sector, whereas in a planned economy, they are in the public sector (state-owned enterprises). In a mixed economic system, they are in both the private and public sectors.

LINK

Chapter 13.1 The market economic system (Private and public sectors)

Chapter 15.3 Government measures to address market failure (Nationalisation and privatisation)

The size of firms

There are three main measures of the size of a firm. These are the number of workers employed, the value of the output it produces and the value of the financial capital it employs.

The size of a particular firm is influenced by a number of factors. These include:

- The **age of the firms**. Most firms start small. Every year new firms are set up, but not all of them survive. Those that do, may take some time to grow in size.
- The **availability of financial capital**. The more financial capital a firm has to draw on to finance its expansion, the larger it is capable of growing.
- The **type of business organisation.** Multinational companies (MNCs) are larger than, for instance, a shop owned by one person. Private sector MNCs can use retained profits, borrow and sell shares to raise the finance to expand. A business owned by one person is unlikely to be able to sell shares and is likely to find it more difficult and more costly to borrow.
- **Internal economies and diseconomies of scale** (see 20.5 below). If a firm is experiencing lower average costs as it expands, it can lower the price for its products and capture more market share. The reluctance to experience internal diseconomies of scale, where average costs rise with increases in output, may limit a firm's growth.
- The **size of the market**. This is the key factor in determining the size of a firm. If there is a large demand for the product, it is possible for a firm to grow to a large size.

20.2 Small firms

Despite the benefits of growth, a large proportion of the firms in any country are small. There are a number of reasons for this.

- **The small size of the market.** As suggested earlier, this is probably the key influence. If demand for the product is small, a firm producing it cannot be large. Demand for very expensive items, such as luxury yachts, may be small as it may be for individually designed items, such as designer dresses and suits and for repair work.

- **Preference of consumers.** For some personal services, such as hairdressing, consumers prefer small firms. Such firms can cater to their individual requirements and can provide a friendlier and more personal service.
- **Owner's preference.** The owner (or owners) of a firm may not want it to grow. People who own and run firms have various motives. Some may want to avoid the stress of running a large firm and may be worried that expanding the firm may lead to loss of control.
- **Flexibility**. Despite the advantages of large firms, small firms may survive because they may be able to adjust to changes in market conditions more quickly. A sole trader, in particular, is likely to be in regular touch with his, or her, customers and should be able to pick up on changes in their demand. He, or she, can also take decisions more quickly as there is no need to consult with other owners.
- **Technical factors.** In some industries, little or no capital is needed. This makes it easy for new firms to set up. It also means that technical economies of scale are not important and small firms do not suffer a cost disadvantage. The lower the barriers to entry, the larger the number of small firms there are likely to be in the industry.
- **Lack of financial capital.** Some firms may want to expand but they may lack the finance required to do so. As mentioned above, it may be difficult for sole traders to raise financial capital.
- **Location.** If a product is relatively heavy in relation to its value, transport costs can form a high proportion of total costs. This can lead to emergence of local rather than national markets, and such markets can be supplied by small firms.
- **Cooperation between small firms.** For example, small farmers may join together to buy seeds, foodstuffs and equipment such as combine harvesters.
- **Specialisation.** Small firms may supply specialist products to, and distribute the products of, larger firms. For instance, a relatively small firm may provide training services for a large accountancy firm.
- **Government support.** Governments in many countries provide financial help and advice to small firms. This is because small firms provide a large number of jobs, develop the skills of entrepreneurs and have the potential to grow into large firms.

GROUP ACTIVITY 2

Decide which of the following circumstances are likely to explain the existence of a number of small firms in an industry.

a The need for high expenditure on research and development.

b The existence of diseconomies of scale at a low level of output.

c Low barriers to entry and exit.

d High start-up costs.

e A global market.

f Discounts given for bulk buying.

20.3 Causes of the growth of firms

There are two ways a firm can increase in size. One is called **internal growth**. This is also sometimes referred to as natural or organic growth. It involves a firm increasing the market for its current products or diversifying into other products. This type of growth may occur through increasing the size of existing plants or by opening new ones. For example, McDonald's, the US fast food chain, has grown to a large size by opening more and more outlets throughout the world.

The other way through which a firm can grow is through **external growth**. This involves the firm joining with another firm/firms to form one firm through a merger or a takeover. The three main types of merger are a **horizontal merger**, a **vertical merger** and a **conglomerate merger**.

External growth allows a firm to increase its size more quickly than internal growth. With internal growth, however, there is more control over the size of the firm. There is a risk that external growth may take a firm past its optimum size.

INDIVIDUAL ACTIVITY 1

Aditya Birla Fashion and Retail (ABFRL), an Indian MNC, bought Forever 21 in 2016 for $26 million. Forever 21 is involved in fast fashion, that is designs that move quickly from catwalks into the high street.

a What type of growth was experienced by ABFRL in 2016?

b Explain two influences on the size of a firm.

KEY TERMS

Internal growth: an increase in the size of a firm resulting from it enlarging existing plants or opening new ones.

External growth: an increase in the size of a firm resulting from it merging or taking over another firm.

Horizontal merger: the merger of firms producing the same product and at the same stage of production.

Vertical merger: the merger of one firm with another firm that either provides an outlet for its products or supplies it with raw materials, components or the products it sells.

Conglomerate merger: a merger between firms producing different products.

Rationalisation: eliminating unnecessary equipment and plant to make a firm more efficient.

20.4 Mergers

Horizontal merger

A horizontal merger is the merger of two firms at the same stage of production, producing the same product, for example, the merger of two car producers or two TV companies. There are two key motives behind a horizontal merger. One is to take greater advantage of economies of scale. The new firm will be larger and hence may be able to produce at lower average cost. The other is to increase the market share. By merging with another firm producing the same product, a direct competitor is eliminated.

Another possible benefit that may arise from a horizontal merger is **rationalisation**. If the two firms had not been using all their resources fully, merging could enable them to sell off the redundant resources, for instance, one office block. The new firm may also be able to save on managerial staff. There is a risk, however, with a horizontal merger that the merged firm may experience diseconomies of scale. Also, a large firm can be difficult to control. It may also be difficult to integrate the two firms if they initially had different management structures or are located some distance apart.

Vertical merger

A vertical merger occurs when a firm merges with another firm involved with the production of the same product, but at a different stage of production. It can take the form of vertical merger backwards or vertical merger forwards.

KEY TERMS

Vertical merger backwards: a merger with a firm at an earlier stage of the supply chain.

Vertical merger forwards: a merger with a firm at a later stage of the supply chain.

Vertical merger backwards is when a firm merges with a firm that is the source of its supply of raw materials, components or the products it sells. For example, a supermarket chain may take over a bakery and a tyre manufacturer merge with a producer of rubber. The main motive behind such a merger is to ensure an adequate supply of good quality raw materials at a reasonable price. Another aim might be to restrict the access of the rival firms to the supplies.

Vertical merger forwards is when a firm merges with, or takes over, a market outlet. For instance, an oil company may buy a chain of petrol stations and an airline may merge with a tour operator. The two key motives behind this form of vertical merger are to ensure that there are sufficient outlets, and the products are stored and displayed well in high quality outlets. A firm may also hope that such a merger may help in the development and marketing of new products.

As with a horizontal merger, problems may be encountered with a vertical merger. Again, there may be management problems. The managers of the merged firms may not be familiar with running, for instance, a market outlet. The two firms may also have been of different sizes and this may require some adjustment or the buying in of some supplies from other firms or the selling of supplies to other firms.

Conglomerate merger

A conglomerate merger involves the merger of two firms making different products. For example, an electricity company may merge with a travel company and an insurance company may merge with a chocolate producer. The main motive behind a conglomerate merger is diversification. Such a merger spreads a firm's risks and may enable it to continue its growth, even if the market of one of its products is declining. Coordinating a firm producing a range of products can, however, prove to be very challenging. In fact, after a number of years, some firms demerge, i.e. they divide into two or more firms.

The effect of a merger on consumers

A merger can bring advantages and disadvantages to consumers. If it leads to greater economies of scale, consumers may enjoy lower prices. They may also benefit from high quality products and innovation, if the merger increases the efficiency of the firm.

However, if the merger results in diseconomies of scale, consumers may experience higher prices and poorer quality. There is also a risk, in the case of a horizontal merger, of reduced choice for consumers and use of greater market power by the merged firm to push up prices.

INDIVIDUAL ACTIVITY 2

In 2016, Al Baraka Bank (Pakistan), a part of Bahrain's Al Baraka Banking Group, agreed to merge with Pakistan's Burj Bank. Takeovers and mergers occur frequently in the banking industry throughout the world.

a Identify two reasons to explain a merger of banks.

b Explain two advantages gained by bank customers from a bank merger.

TIP

It is useful to explore a merger in your own country, including the reasons for the merger and whether it has benefited consumers.

20.5 Economies and diseconomies of scale

The meaning of economies of scale

Economies of scale are the advantages, in the form of lower long run average costs (LRAC), of producing on a larger scale. When economists and entrepreneurs talk about economies of scale, they are usually referring to **internal economies of scale**. These are the advantages gained by an individual firm by increasing its size, that is having larger or more plants. The advantages come in a variety of forms – see below.

The other type of economies of scale are **external economies of scale**. These are the advantages available to all the firms in an industry, resulting from the growth of the industry.

The meaning of diseconomies of scale

Diseconomies of scale are essentially the disadvantages of 'being too large'. A firm that increases its scale of operation to a point where it encounters rising long run average costs is said to be experiencing **internal diseconomies of scale**. **External diseconomies of scale** arise from an industry being too large, causing the firms within the industry to experience higher long run average costs.

Internal economies and diseconomies of scale

As a firm changes its scale of operation, its average costs are likely to change. Figure 20.2 shows the usual U-shaped LRAC curve. Average costs fall at first, reach an optimum point and then rise.

In very capital-intensive industries, such as oil refining, long run average costs may fall over a considerable range of output as shown in Figure 20.3.

In other cases, average costs may fall relatively quickly to their lowest point (the minimum efficient scale) and then remain constant over a large range of output. This would give an L-shaped LRAC curve as shown in Figure 20.4.

LINK

Chapter 22 Average total cost

KEY TERMS

Internal economies of scale: lower long run average costs resulting from a firm growing in size.

External economies of scale: lower long run average costs resulting from an industry growing in size.

Internal diseconomies of scale: higher long run average costs arising from a firm growing too large.

External diseconomies of scale: higher long run average costs arising from an industry growing too large.

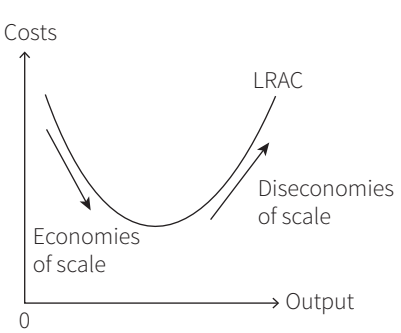


Fig. 20.2: Internal economies and diseconomies of scale

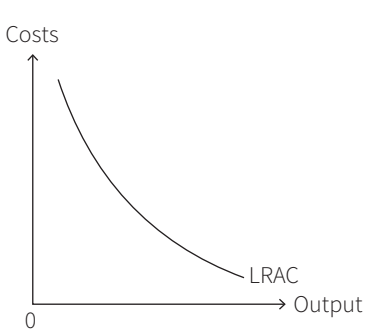


Fig. 20.3: Downward-sloping LRAC curve

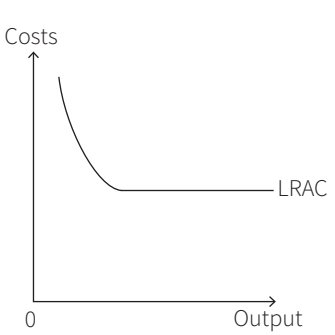


Fig. 20.4: L-shaped LRAC curve

External economies and diseconomies of scale

External economies and diseconomies of scale have a different effect on a firm's LRAC curve. In the case of external economies of scale, a firm's average costs will be reduced not by changes in the firm's output, but by changes in its industry's output. Figure 20.5 shows how external economies of scale result in a downward shift of a firm's LRAC curve.

In contrast, external diseconomies of scale will raise a firm's LRAC curve at each and every level of output as shown in Figure 20.6.

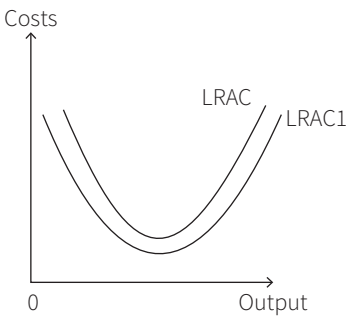


Fig. 20.5: The effect of external economies of scale

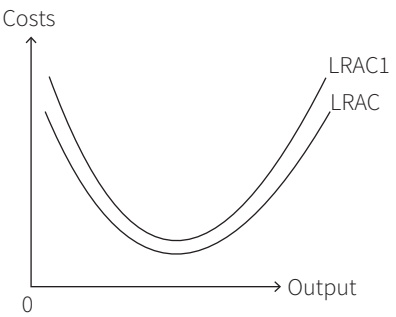


Fig. 20.6: The effect of external diseconomies of scale

Types of internal economies of scale

As a firm increases its scale of operation, there are a number of reasons responsible for a decline in its average cost. These include:

- **Buying economies.** These are probably the best known type. Large firms that buy raw materials in bulk and place large orders for capital equipment usually receive a discount. This means that they pay less for each item purchased. They may also receive better treatment than small firms in terms of quality of the raw materials and capital equipment sold and the speed of delivery. This is because the suppliers will be anxious to keep such large customers.
- **Selling economies.** The total cost of processing orders, packing the goods and transporting them does not rise in line with the number of orders. For instance, it costs less than twice as much to send 10 000 washing machines to customers than it does to send 5000 washing machines. A lorry that can transport 40 washing machines does not cost four times as much to operate as four vans which can carry 10 washing machines each. A large volume of output can also reduce advertising costs. The total cost of an advertising campaign can be spread over more units and, again, discounts may be secured. A whole-page advertisement in a newspaper or magazine is usually less than twice the cost of a half-page advertisement. Together, buying and selling economies of scale are sometimes referred to as marketing economies.
- **Managerial economies.** Large firms can afford to employ specialist staff in key posts as they can spread their pay over a high number of units. Employing specialist buyers, accountants, human resource managers and designers can increase the firm's efficiency, reduce costs of production, and raise demand and revenue.
- **Labour economics:** Large firms can engage in division of labour among their other staff. For example, car workers specialise in a particular aspect of the production process.
- **Financial economies.** Large firms usually find it easier and cheaper to raise finance. Banks tend to be more willing to lend to large firms because such firms are

well-known and have valuable assets to offer as collateral. Banks often charge large borrowers less, per $ borrowed, in order to attract them and because they know that the administrative costs of operating and processing large loans are not significantly higher than the costs of dealing with small loans. Large firms can also raise finance through selling shares, which is not an available option for sole traders and partnerships. Public limited companies can sell to the general public. The larger and better known the companies are, the more willing people are to buy their shares.

- **Technical economies.** The larger the output of a firm, the more viable it becomes to use large, technologically advanced machinery. Such machinery is likely to be efficient, producing output at a lower average cost than small firms.
- **Research and development economies.** A large firm can have a research and development department, since running such a department can reduce average costs by developing more efficient methods of production and raise total revenue by developing new products.
- **Risk bearing economies.** Larger firms usually produce a range of products. This enables them to spread the risks of trading. If the profitability of one of the products it produces falls, it can shift its resources to the production of more profitable products.

GROUP ACTIVITY 3

Decide the type of internal economies each of the following may be an example of:

a A farmer using a combine harvester.
b A pharmaceuticals company setting up a laboratory to develop anti-AIDS drugs.
c A supermarket chain employing an expert in chocolate to place its orders with suppliers.
d A book publisher buying a large quantity of paper.
e A soap manufacturer buying a two-minute advertisement on national television.
f A car manufacturer issuing new shares.

Internal diseconomies of scale

Growing beyond a certain output can cause a firm's average costs to rise. This is because a firm may encounter a number of problems including:

- **Difficulties controlling the firm.** It can be hard for those managing a large firm to supervise everything that is happening in the business. Management becomes more complex. A number of layers of management may be needed and there may be a need for more meetings. This can increase administrative costs and make the firm slower in responding to changes in market conditions.
- **Communication problems.** It can be difficult to ensure that everyone in a large firm has full knowledge about their duties and available opportunities, such as training etc. Also, they may not get the opportunity to effectively communicate their views and ideas to the management team.
- **Poor industrial relations.** Large firms may be at a greater risk from a lack of motivation of workers, strikes and other industrial action. This is because workers may have less sense of belonging, longer time may be required to solve problems and more conflicts may arise due to the presence of diverse opinions.

External economies of scale

A larger industry can enable the firms in that industry to reduce their average costs in a number of ways including developing:

- **A skilled labour force.** A firm can recruit workers who have been trained by other firms in the industry.
- **A good reputation.** An area can gain a reputation for a high quality production. For example, the Bordeaux region of France is well known for its high quality wine production and the Maldives has a reputation of being a popular holiday resort.
- **Specialist suppliers of raw materials and capital goods.** When an industry becomes large enough, it can become worthwhile for other industries, called ancillary industries, to set up providing for the needs of the industry. For instance, the tyre industry supplies tyres to the car industry.
- **Specialist services.** Universities and colleges may run courses for workers in large industries and banks, and transport firms may provide services specially designed to meet the particular needs of firms in the industry.
- **Specialist markets.** Some large industries have specialist selling places and arrangements such as corn exchanges and insurance markets.
- **Improved infrastructure.** The growth of an industry may encourage a government and private sector firms to provide better road links and electricity supplies, build new airports and develop dock facilities.

External economies of scale are more likely to arise if the firms in the industry are located in one area. This is why they are sometimes referred to as *economies of concentration*.

External diseconomies of scale

Just as a firm can grow too large, so can an industry. With more and larger firms in an area, there will be an increase in transport with more vehicles bringing in workers and raw materials, and taking out workers and finished products. This may cause congestion, increased journey times, higher transport costs for firms and possibly reduced workers' productivity. The growth of an industry may also result in increased competition for resources, pushing up the price of key sites, capital equipment and labour.

TIP

Economies of scale result from the growth of a firm or industry – they do not cause it. The type of economy of scale that is defined incorrectly by students most frequently is financial economies.

INDIVIDUAL ACTIVITY 3

Goldcorp, a Canadian gold producer, expanded its production at its mines and opened new mines in 2016. Mining only contributed 3% to Canada's output in 2016, but the industry is still growing.

a Explain two types of internal economies of scale that can been be enjoyed by a mining company.

b Explain two types of external economies that may be experienced by firms in the mining industry.

Summary

You should know:

- Industries consist of many firms producing the same products and firms may have a number of plants.
- The three main stages of production are – primary (collecting and extracting raw materials), secondary (manufacturing and construction) and tertiary (services).
- The key factors influencing the size of a firm are its age, the availability of financial capital, the type of business organisation, output over which it will experience economies of scale, and (most significantly) the size of the market.
- Firms can grow internally by increasing their output or externally by merging with, or taking over, another firm.
- The three main types of merger are horizontal, vertical and conglomerate.
- Horizontal merger increases market share and may enable the new firm to take greater advantage of economies of scale.
- Vertical merger backwards secures supplies whilst vertical merger forwards secures outlets.
- The key motive behind a conglomerate merger is diversification.
- Despite the advantages of a large size, small firms continue to exist because of limited demand, consumers' preference for personal attention, the owner's disinclination to expand, flexibility, low or no barriers to entry, a lack of financial capital required for expansion, role of suppliers of specialist goods or services to larger firms and government assistance.
- Increasing output can reduce long run average costs. The savings made are referred to as economies of scale.
- Internal economies of scale are falling long run average costs resulting from the growth of a firm.
- Examples of internal economies of scale include buying economies, selling economies, managerial economies, labour economics, financial economies, technical economies, research and development economies and risk-bearing economies.
- Internal diseconomies of scale are rising long run average costs, resulting from a firm growing too large.
- Examples of internal diseconomies of scale include difficulties controlling the firm, communication problems and poor industrial relations.
- External economies arise from the growth of the industry and include a skilled labour force to draw on, a good reputation, specialist supplies of raw materials and capital equipment, specialist services, specialist markets and improved infrastructure.
- External diseconomies of scale are caused by an industry growing too large and experiencing disadvantages like congestion and a rise in the cost of factors of production.
- Internal economies and diseconomies of scale explain the usual U-shape of the long run average cost curve.
- If the increasing size of the industry gives rise to external economies of scale, a firm's long run average cost curve will shift downwards. The creation of external diseconomies of scale will cause the long run average cost curve to move upwards.

Multiple choice questions

1 What is most likely to be supplied by small firms?

A Banking

B Film production

C Shoe repair

D Steel

2 A toy manufacturer merges with a chemical company. What type of merger is this?

A Conglomerate

B Horizontal

C Vertical merger backwards

D Vertical merger forwards

3 What is meant by financial economies of scale?

A Lower average costs experienced by large banks and other financial institutions

B Lower average costs arising from a large firm operating its finance department more efficiently

C Lower average costs due to the ability of large firms to borrow more cheaply

D Lower average costs occurring because of the use of larger capital equipment

4 Why might the growth of an industry reduce a firm's costs of production?

A It may cause a decrease in subsidiary industries

B It may create greater competition for resources

C It may lead to the development of specialist markets

D It may reduce the supply of infrastructure

Four-part question

a Define a *state-owned enterprise*. **(2)**

b Explain why a firm may decide to stay small. **(4)**

c Analyse **two** internal economies of scale. **(6)**

d Discuss whether or not a merger between two book publishing firms will benefit consumers. **(8)**

Chapter 21
Firms and production

Learning objectives

By the end of this chapter you will be able to:

- analyse the influences on the demand for factors of production
- analyse the reasons for adopting labour-intensive production or capital-intensive production
- distinguish between productivity and production

Introducing the topic

Why do some industries employ many workers, but use little capital equipment, while others use a high proportion of capital? Why do the same industries in different countries use different combinations of factors of production? For example, why is the number of farm workers per unit of land much lower in the USA than in Mali? How may varying the combination of labour and capital affect production and productivity?

LINK

Chapter 18.2 Changes in the demand for labour

21.1 Demand for factors of production

What factors of production are employed

The type of factors of production employed is influenced by the type of product produced, the productivity of the factors and their cost. A firm producing a standardised model of car is likely to be very capital-intensive, whereas a beauty salon is likely to be labour-intensive.

TIP

Remember that whilst production is output, productivity is output per worker or output per factor of production.

When factors of production are substitutes, a rise in the productivity, or a fall in the cost of one of them, may result in a change in the combination of resources being employed. A fall in the price of capital goods, for example, might lead to the replacement of some workers with machines. In other cases, where factors of production are complements, a fall in the price of one, or a rise in its productivity, may increase the employment of all factors in a firm. For example, a fall in the price of aircraft may make it possible for an airline to fly to more destinations. If so, they will also employ more pilots, more cabin crew and obtain more take-off and landing slots at airports.

Altering factors of production

If a firm wants to change the quantity of resources employed by it, it will find it easier to do this with some factors than others. In the short run, there is likely to be at least one fixed factor of production. This means the quantity cannot be altered quickly. The most obvious example is the size of the factory or office. It will take time for a firm desiring expansion, to extend its buildings or build new ones. Similarly, one wanting to reduce output is unlikely to be able to stop renting or sell off its buildings quickly. In contrast, it is likely to be easier to change the quantity of labour. Even in the very short run, it may be possible to alter the quantity of labour by changing the amount of overtime available. It may also be possible to change orders for raw materials and capital equipment, but it will depend on the length of contracts and, in the case of increasing demand, the availability of spare capacity in firms producing them.

Combining the factors of production

It is important to achieve the right combination of factors of production. For example, it would not make sense for a hairdressing salon to have ten hairdryers and two hairdressers, or a farmer to have a large amount of land and only a few cattle. In the first case, labour would be under-utilised and in the second case, there would be an insufficient number of livestock to make full use of land. While deciding the combination of resources, firms seek to achieve the highest possible productivity. For example, Table 21.1 shows that the most appropriate number of workers to be employed (in terms of productivity) with five machines is seven, since this is where output per worker is highest. The combination is not always one machine per worker. This is because workers may work in shifts, some workers may be undertaking training and, of course, in some cases one worker may use more than one piece of machinery.

No. of machines	No. of workers	Total output (units)	Output per worker (average product) (units)
5	1	50	50
5	2	120	60
5	3	210	70
5	4	320	80
5	5	450	90
5	6	600	100
5	7	770	110
5	8	800	100
5	9	810	90

Table 21.1: Combining labour with machines

INDIVIDUAL ACTIVITY 1

From the following information, calculate the average product of labour and decide the most efficient combination of workers and machines.

No. of machines	No. of workers	Total output (units)
4	1	10
4	2	24
4	3	45
4	4	72
4	5	100
4	6	108
4	7	112

Factors influencing demand for capital goods

Among the key factors influencing demand for capital goods are the price of capital goods, price of other factors of production, profit levels, **corporation tax**, income, interest rates, confidence levels and advances in technology.

KEY TERM

Corporation tax: a tax on profits of a company.

- A rise in the price of capital goods will cause a contraction in demand for capital goods, whereas an increase in the price of another factor of production, particularly labour, may increase the demand for capital goods. This will occur if the factors are substitutes and the rise in price of another factor makes the production of a unit of output more expensive than that involving a rise in capital. If another factor is a complement, an increase in its price would cause a decrease in demand for capital.
- If profit levels are high, firms will have both the ability and the incentive to buy capital goods.
- A cut in corporation tax would also mean that firms would have more profit available to plough back into the business and greater incentive to do the same.
- Rising real disposable income will lead to an increase in consumption. This, in turn, is likely to encourage firms to invest as they will expect to sell a higher output in the future.
- A cut in interest rates would also tend to raise consumption and thereby encourage firms to expand their capacity. In addition, lower interest rates would increase investment

because they would reduce the opportunity cost of investing and lower the cost of borrowing. Firms can use profits to buy more capital goods instead of depositing them in bank accounts. With low interest rates, firms would be sacrificing less interest by buying capital goods. Borrowing to buy capital goods would also be less costly.

- Another key influence on investment is firms' expectations about the future. If they are confident that sales will rise, they will invest now. In contrast, a rise in pessimism will result in a decline in investment.
- Advances in technology will increase the productivity of capital goods. If new and more efficient machinery is developed, firms are likely to invest more.

Demand for land

Productivity is a key factor influencing demand for land. In terms of agricultural land, the most fertile land will be in highest demand and receive the highest rent. City centre sites are also very productive as firms have the potential to attract a high number of customers. If a shop in the centre of New York becomes vacant, it is likely that a number of retail firms would compete for it in the expectation that they could earn a high revenue there. The competition pushes up the rent that can be charged for a favourable site.

One natural resource, which is experiencing an increasing world demand, is water. Water is used for domestic, agricultural, industrial and energy production purposes. As countries become richer, they make heavier demands on scarce water supplies. The global use of water has increased six times in the last one hundred years and is predicted to double again by 2050.

INDIVIDUAL ACTIVITY 2

Rising living standards in China and India are increasing the demand for water, which in turn is affecting the price of water.

a Explain how improving living standards would increase the demand for water.

b Using a demand and supply diagram, explain what is likely to happen to the price of water in the future.

LINK

Chapter 20.1 Classification of firms (The stages of production)

Factors of production and sectors of production

The demand for factors of production can alter as an economy changes its industrial structure. As mentioned in Chapter 20, the distribution of resources among different sectors changes with economic development. In most cases, agricultural reform permits resources to move to low-cost manufacturing. Then, resources move to higher value added manufacturing and then finally the service sector becomes the most important one. Not all economies, however, conform to this pattern. India's service sector has expanded before it has built up a sizeable manufacturing sector. Now, in most countries, the service sector makes the largest contribution to output. Indeed, in 2016 the service sector accounted for 63% of global output.

Different industries make use of different factors of production. The chemical industry, for example, is very capital-intensive and agriculture is land-intensive (along with being water-intensive).

INDIVIDUAL ACTIVITY 3

The broadband revolution is revolutionising the mode of working for many. It is enabling more people to work from home and effectively introducing a new piece work model. The more flexible a country is in creating new employment relationships, the better it will be at getting the most of the new technologies.

a What is meant by a 'piece work' model?

b Explain how having workers working from home may affect a firm's:

i output

ii costs of production.

21.2 Labour-intensive or capital-intensive production

There are a number of reasons why some producers use labour-intensive methods of production. One is that there is a large supply of labour in the country, making labour relatively cheap.

The garment industry is labour intensive

Another reason is that some producers may be too small to take advantage of capital equipment. If, for example, a machine could produce 3000 pairs of shoes a day, but a producer could only sell 50, she would not consider it worthwhile to buy the machine. The small producer of shoes may also want to produce handmade shoes, as some people may be willing to pay a high price for such shoes. Consumers may think that handmade products are of a higher quality and more likely to meet their individual needs than mass produced products. This may make consumers willing to pay a higher price for them. Custom-made products can also provide greater status and some consumers like the personalised attention that labour-intensive production may make possible.

Relying more on labour than capital has a number of other advantages. Workers can be more flexible in terms of what they do and the size of the labour force can be adjusted by small amounts. Labour can also provide feedback on how to improve production methods and the quality of products.

TIP

Employing capital goods does not involve just a one-off cost. As well as the cost of buying or renting capital goods, firms have the cost, on a regular basis, of maintaining the capital goods and, on some occasions, repairing them.

Firms may switch from capital-intensive production to labour-intensive production if the price of capital increases and labour can carry out the same functions with the same level of productivity as the machines they replace. In practice, however, firms tend to switch from labour-intensive production to capital-intensive production. This is because advances in technology tend to make capital goods more affordable and more productive. Education, for example, is becoming more capital-intensive with developments such as online university degrees. As well as often having the capacity to produce more products at a lower average cost (technical economies), capital goods produce products of a uniform standard unaffected by human error. They do not engage in industrial action. They also do not have time off ill and are not affected by tiredness, although they do need to be maintained and can break down.

GROUP ACTIVITY 1

Decide whether the following industries are usually capital-intensive or labour-intensive:

a air travel
b fruit picking
c hotels
d oil production
e telecommunication.

21.3 Production and productivity

There are clear links between production and productivity, but they are not the same thing. If output per worker hour increases and the number of working hours stays the same, production will increase. It is possible, however, that productivity could rise and production could fall. This could occur if unemployment increases. Indeed, a rise in unemployment may increase productivity as it is the most skilled workers who are likely to keep their jobs.

As economies develop, both production and productivity tend to increase due to advances in technology and improvements in education. These developments can result in productivity rising so much that total output can increase while the number of working hours declines.

Summary

You should know:

- The key factors that influence the factors of production employed are the type of products produced, the productivity of the factors and their cost.
- In the short run, there is likely to be at least one fixed factor of production, most commonly capital.
- The average product of labour (productivity) is total output divided by the number of workers.
- Demand for capital goods is influenced by the price of capital goods, the price of other factors of production, profit levels, income, interest rates, confidence and advances in technology.
- City centre sites command a high rent because they are in high demand.
- The factors of production, used in an economy, are influenced by the economy's industrial structure.
- Capital-intensive production can result in higher output at a lower average cost, and avoids human error and disruptions caused by strikes, tiredness and sickness.
- Labour-intensive production may be appropriate where there is a high supply of low wage labour, personal attention is important, consumers want custom-made products and where workers' ideas can make significant improvements to production methods.

Multiple choice questions

1 The table shows the distribution of the labour force of a country between two years.

	Employment in millions	
	Year 1	Year 2
Agriculture	10	8
Mining	4	5
Manufacturing	20	20
Retailing	10	12
Education	5	5

How did the distribution of employment change between year 1 and year 2?

	Primary industry	Secondary industry	Tertiary industry
A	fell	unchanged	rose
B	rose	fell	unchanged
C	unchanged	rose	fell
D	rose	unchanged	fell

2 A doctor and an operating theatre are:

A Complementary factors of production

B Substitute factors of production

C An example of labour and land

D An example of enterprise and capital

3 Which of the following would cause an increase in demand for capital goods?

A A decrease in corporation tax

B A fall in disposable income

C A rise in interest rates

D A rise in pessimism

4 Twenty-five workers produce a total output of 300. What is the average product per worker?

A 12

B 25

C 300

D 7500

Four-part question

a Define *investment.* **(2)**

b Explain why the production of cars may increase whilst the productivity of car workers may fall. **(4)**

c Analyse the reasons why car production has become more capital-intensive. **(6)**

d Discuss whether or not industries becoming more capital-intensive will increase unemployment. **(8)**

Chapter 22
Firms, costs, revenue and objectives

Learning objectives

By the end of this chapter you will be able to:

- define total cost, average total cost, fixed cost, variable cost, average fixed cost and average variable cost
- calculate total cost, average total cost, fixed cost, variable cost, average fixed cost and average variable cost
- draw and interpret diagrams that show how changes in output can affect costs of production
- define total revenue and average revenue
- describe how sales affect revenue
- discuss the objectives of firms including survival, social welfare, profit maximisation and growth

Introducing the topic

How do costs and revenue change as a firm changes its output? What motivates firms? Do all firms seek to gain as much profit as possible? If you were setting up a business what would be your objective?

22.1 Calculating the costs of production

Total and average total cost

Total cost (TC), as its name implies, is the total cost of producing a given output. The more the output is produced, the higher the total cost of production. Producing more units requires the use of more resources. **Average total cost** (ATC) is also referred to as average cost (AC), or unit cost, and is given as total cost divided by output. Table 22.1 shows the relationship between output, total cost and average cost.

Output	Total cost ($)	Average total cost (4)
0	10	–
1	30	30
2	48	24
3	60	20
4	88	22
5	125	25

Table 22.1: Total and average cost

KEY TERMS

Total cost: the total amount that has to be spent on the factors of production used to produce a product.

Average total cost: total cost divided by output.

Fixed costs: costs which do not change with output in the short run.

Fixed costs

Table 22.1 indicates that there is a cost even when output is zero. In the short run, some factors of production are in fixed supply. When a firm changes its output, the costs of these factors remain unchanged – they are **fixed costs** (FC). For instance, if a firm raised its output, the interest it pays on past loans would remain unchanged. If it closed down during a holiday period, it may still have to pay for security and rent for buildings.

TIP

Remember that while total cost rises with output, average total cost may rise, remain the same or fall.

The steel industry has a high fixed cost

Figure 22.1 shows that total fixed cost (TFC) remains unchanged as output changes. Fixed costs are also sometimes referred to as overheads or indirect costs.

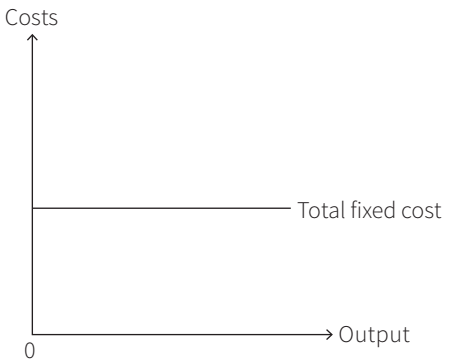


Fig. 22.1: Total fixed cost

Average fixed cost

Average fixed cost (AFC) is total fixed cost divided by output. As total fixed cost is constant, a higher output will reduce average fixed cost. Table 22.2 and Figure 22.2 show how the average fixed cost falls as output increases.

Output	Total fixed cost ($)	Average fixed cost ($)
0	10	–
1	10	10
2	10	5
3	10	3.33
4	10	2.5
5	10	2

Table 22.2: Average fixed cost

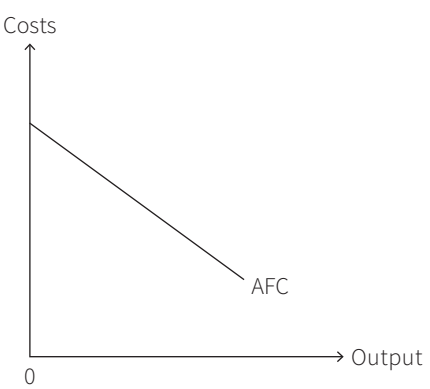


Fig. 22.2: Average fixed cost

KEY TERMS

Average fixed cost: total fixed cost divided by output.

Variable costs: costs that change with output.

TIP

Remember that while total fixed cost remains unchanged as output rises, average fixed cost falls.

Variable costs

Variable costs (VC), also sometimes called direct costs, are the costs of the variable factors. They vary directly as output changes. Production and sale of more cars will involve an increased expenditure on component parts, electricity, wages and transport for a car firm.

As output increases, total variable cost rises. It usually tends to rise slowly at first and then rise more rapidly. This is because productivity often rises at first and then begins to decline after a certain output. Figure 22.3 shows the change of total variable cost (TVC) with output.

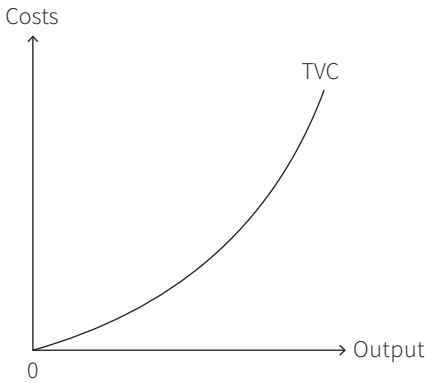


Fig. 22.3: Total variable cost

Average variable cost

Average variable cost (AVC) is total variable cost divided by output. As output increases in the short run, average variable cost tends to fall and then rise. This is for the same reason which accounts for an increase in total variable cost at different rates with increase in output. Table 22.3 and Figure 22.4 show the change in average variable cost with output.

KEY TERM

Average variable cost: total variable cost divided by output.

Output	Total variable cost ($)	Average variable cost ($)
1	40	40
2	70	35
3	90	30
4	120	30
5	175	35

Table 22.3: Average variable cost

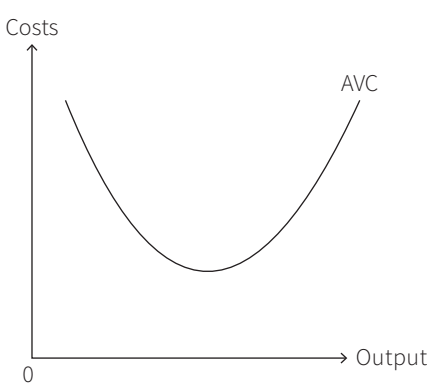


Fig. 22.4: Average variable cost

GROUP ACTIVITY 1

A bakery is faced with the following costs: flour, yeast, rent, business rates, insurance, overtime pay, depreciation and energy costs. Decide which are fixed and which are variable costs.

Fixed and variable costs

In practice, it is not always easy to decide whether a cost is fixed or variable. This is particularly true of payments to workers. It is clear that overtime payments and the wages of temporary workers are variable costs as they vary directly with output. The basic wage or salary paid to workers, however, may be regarded as a fixed cost since it has to be paid irrespective of the amount of output.

The sum of total fixed cost and total variable cost equals total cost. For instance, if fixed costs are $800 and variable costs are $4200 a week, the total cost of production would be $5000 a week. Figure 22. 5 shows how total cost is made up of fixed and variable costs.

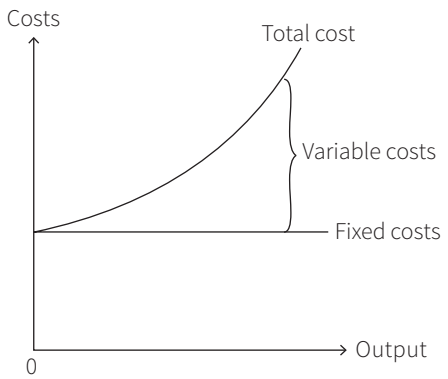


Fig. 22.5: The composition of total cost

In the long run, however, all costs are variable. This is because all factors of production can be altered, if sufficient time is available. For instance, a firm can increase the size of its factory, office or farm. Therefore, its rent and business rates would rise and it can hire more workers, pushing up the wage bill. Figure 22.6 shows total cost in the long run.

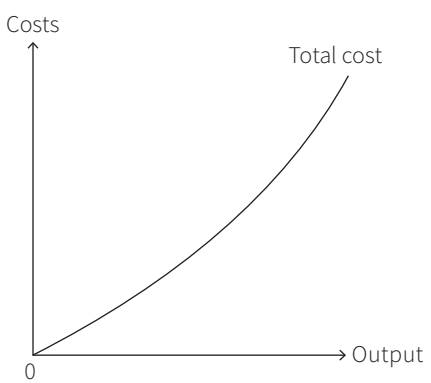


Fig. 22.6: Long-term total cost

KEY TERM

Long run: the time period when all factors of production can be changed and all costs are variable.

Average total cost

LINK

Chapter 20.5 Economies and diseconomies of scale

In the short run, average cost consists of average fixed cost and average variable cost. The shape of the short run average cost curve is usually U-shaped. The **long run** average cost curve is also usually U-shaped. This can be explained as follows. As a firm alters its scale of production, it first experiences economies of scale and then, after reaching a certain output, it may encounter diseconomies of scale.

TIP

While deciding whether costs are fixed or variable, remember to consider whether the costs will change with output in the short run. Remember that **all** costs change with output in the long run.

INDIVIDUAL ACTIVITY 1

Copy and complete the table with the costs of production.

Output	TC	TFC	TVC	AC	AFC
AVC					
0	60				
1	110				
2	150				
3	180				
4	200				
5	230				
6	300				

22.2 Calculating revenue

The money received by firms from selling their products is referred to as revenue. Total revenue is, as its name suggests, the total amount of money received by firms through the sale of their products. Average revenue is found by dividing total revenue by the quantity sold and is the same as **price**.

KEY TERM

Price: the amount of money that has to be given to obtain a product.

In very competitive markets each firm's output may have no effect on price. In this case, total revenue rises consistently as more quantity is sold. Table 22.4 shows the change of total revenue with sales.

Quantity sold	Average revenue (price per unit) ($)	Total revenue ($)
1	10	10
2	10	20
3	10	30
4	10	40
5	10	50
6	10	60
7	10	70

Table 22.4: Average and total revenue of a perfectly competitive firm

Figure 22.7 shows the same information graphically.

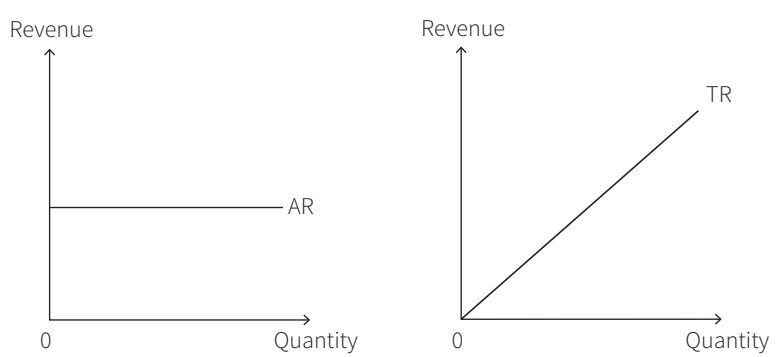


Fig. 22.7: The average and total revenue curves of a perfectly competitive firm

KEY TERMS

Total revenue: the total amount of money received from selling a product.

Average revenue: the total revenue divided by the quantity sold.

In most markets, however, firms are price makers and need to lower price to sell more. Table 22.5 and Figure 22.8 illustrate the change in **total revenue** and **average revenue** in a monopoly market.

Quantity sold	Average revenue (price per unit) ($)	Total revenue ($)
1	10	10
2	9	18
3	8	24
4	7	28
5	6	30
6	5	30
7	4	28

Table 22.5: Average and total revenue in a monopoly market

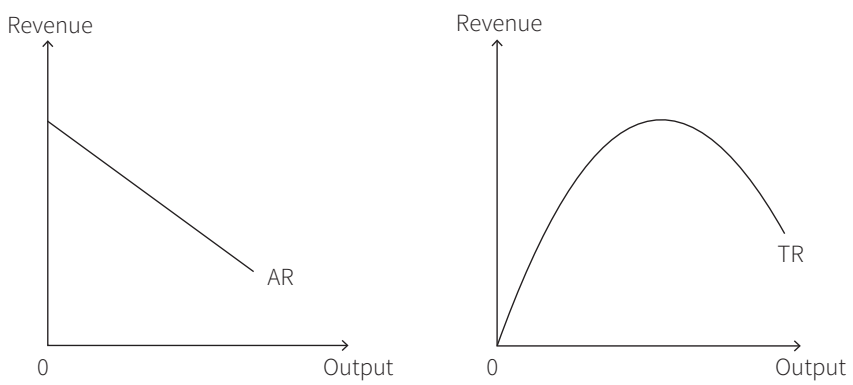


Fig. 22.8: The average and total revenue curves of a monopoly firm

Average revenue falls as the quantity sold rises. Total revenue rises at first, reaches a peak and then falls beyond a certain level of sales.

KEY TERMS

Profit satisficing: sacrificing some profit to achieve other goals.

Profit maximisation: making as much profit as possible.

22.3 Objectives of firms

Firms may pursue a range of objectives including survival, growth, social welfare, **profit satisficing** and **profit maximisation**.

Survival

When firms are started, their initial objective may be just to survive in what may be a very competitive market. A firm may be content to just cover its costs until it can become better known. During difficult times when demand is falling, even large firms may have survival as their key objective. They will try to stay in the market in the hope that conditions will improve.

Growth

Some firms may pursue the objective of growth. Increasing the size of the firm may bring a number of advantages. High and expanding sales tend to enable firms to take advantage of a number of internal economies of scale and so, for instance, to raise finance more easily

and to buy raw materials at a discounted rate. Those who run firms, the managers, directors and chief executives, may have the growth of the firm as their key objective because their pay and status may be more closely linked to the size of the firm they run. Those in charge of large firms are usually paid more than those running smaller firms and also tend to be held in higher esteem. They may also have greater job security as the larger the firm they run, the more difficult it will be for any other firm to take it over and replace them with their own managerial team. If growth is achieved by merging with other firms, competition will be reduced and the firm will gain a larger market share.

Social welfare

State-owned enterprises may be given by the government the objective of improving social welfare. They may, for instance, charge a relatively low price for their products to ensure they are affordable to even the poor. They are more likely than private sector firms to base their production decisions on social costs and benefits.

In recent years, some private sector firms have also been showing a greater concern about the environmental and social effects of their actions. A number of firms have sought to clean up their production processes and ensure that they source their raw materials from firms that do not employ child labour.

Profit satisficing

In some cases, firms may engage in what economists call profit satisficing. This involves making enough dividends to keep shareholders happy while pursuing other objectives. For example, a firm may be prepared to sacrifice some profit, at least in the short run, in order to improve staff facilities or to get their raw materials from more sustainable sources.

Profit maximisation

Traditional theory, however, suggests that firms seek to maximise profits. This means that they try to earn the largest profit possible over a period of time. Whilst some of the other objectives may appear to conflict with profit maximisation, pursuit of them may actually increase profits in the longer term. For instance, growth may involve reducing the number of competitors. This would reduce the price elasticity of demand for its product and so its ability to raise price and revenue. In addition, increasing the scale of operation may reduce average costs. Both of these outcomes would increase profits.

Seeking to increase social welfare may also increase profits in the long run. For example, pursuing environment friendly policies and being socially responsible may raise costs of production, but it may also increase demand and revenue, as consumers are becoming increasingly concerned that firms should act in an ethical manner. Treating workers better may help retain workers which would reduce the costs of recruiting and training workers.

When profit maximisation is achieved

Profit is made when the revenue earned by a firm is greater than the costs incurred by it. Profit maximisation is an objective pursued by most private sector firms. Total profit is the positive difference between total revenue and total cost. Profit per unit (sometimes referred to as the profit margin) is the positive difference between average revenue (revenue per unit) and average total cost (unit cost). Profit is maximised when the positive gap between revenue and cost is greatest. Table 22.6 shows that profit would be maximised at 40 units of output.

Output	Total revenue ($)	Total cost ($)	Total profit ($)
10	200	220	–20
20	380	380	0
30	500	480	20
40	600	540	60
50	660	620	40
60	700	710	–10

Table 22.6 The relationship between total revenue, total cost and total profit

Besides calculating total profit, the profit per unit can be found by deducting average cost from average revenue, as shown in Table 22.7. In this case, profit is maximised at three units.

Output	Average revenue ($)	Average cost ($)	Total profit ($)
1	15	15	0
2	14	12	2
3	12	9	3
4	9	8	1
5	5	10	–5

Table 22.7: The relationship between average revenue, average cost and total profit

From the information in Table 22.7, it is possible to calculate total revenue (by multiplying average revenue with output), total cost (by multiplying average cost with output) and total profit (by multiplying profit per unit with output). These figures are shown in Table 22.8.

Output	Total revenue ($)	Total cost ($)	Total profit ($)
1	15	15	0
2	28	24	4
3	36	27	9
4	36	32	4
5	25	50	–25

Table 22.8: Total revenue, total cost and total profit

If information is given on output, costs and revenue, it is possible to work out revenue as shown in Table 22.9. This is because it is known that

profit = revenue – cost

So, revenue = profit + cost. Similarly, from information on output, revenue and profit, cost can be calculated.

cost = revenue – profit

Output	Total profit ($)	Total revenue ($)	Total cost ($)
10	0	400	400
20	100	800	700
30	300	1200	900
40	400	1600	1200
50	300	2000	1700

Table 22.9: The relationship between total profit, total revenue and total cost

INDIVIDUAL ACTIVITY 2

1 From the following information, determine the profit maximising output.

Output	Total revenue ($)	Total cost ($)
10	80	90
20	150	150
30	210	190
40	260	210
50	300	260

2 From the following information, copy the table and complete the column for total cost.

Output	Total revenue ($)	Total profit ($)	Total cost ($)
10	80	–20	
20	150	0	
30	210	30	
40	260	20	
50	300	–40	

Effects of changes in profits

Profits provide an incentive for entrepreneurs to undertake production. An increase in profit will encourage more firms to enter a competitive market. It will also provide firms with more finance to update their capital equipment and expand their business.

A profitable firm will also find it easier to obtain external finance. Shareholders are more likely to want to buy shares in profitable firms and banks are usually willing to give them loans. These firms may also find it easier to recruit top managers and directors, attracted by their success.

The effect of a fall in profit may vary with time. At first it may have little impact on the behaviour of firms, if they think that it will only be short lived. After a while, if profits remain low, or fall further, some firms will cut back on production and others will cease production.

Ways of increasing profit

The two fundamental ways of increasing profit are to

- reduce costs of production, and
- raise revenue.

There are a number of ways of reducing costs of production. One is by reducing any wastages and inefficiency. Another is by increasing the productivity of factors of production. In the short run the second strategy may actually raise costs, but in the long run it may lower average costs and raise revenue by improving quality. For instance, a firm may spend more on training workers and may replace existing equipment with a more technologically advanced version. In the longer run, these measures should increase output per worker and per machine and therefore reduce average cost. A third way is by increasing the size of the firm through merger or takeover. A larger firm may be able to take advantage of economies of scale. The firm will be likely to have higher total revenue. It may also have a higher total profit and profit per unit, due to its greater market share. Firms with considerable market power

LINK

Chapter 20.5 Economies and diseconomies of scale

often have inelastic demand for their products. When demand is inelastic, a firm can increase its revenue by raising price. In contrast if demand is elastic, the revenue may be raised by cutting down price.

Besides trying to raise revenue by changing price, firms may seek to increase demand for the products. There is a variety of ways in which this can be done. They may seek to improve the quality of their products, diversify and be more responsive to changes in consumer demand by improving their market research. Another method that firms may employ is advertising. A successful advertising campaign is one which increases revenue by more than the cost and hence raises profit.

TIP

Remember that profit is not the same as revenue. Revenue might increase but profit would fall, if costs rise by more than revenue.

GROUP ACTIVITY 2

In 2015, the US retailer Wal-Mart experienced a rise in total revenue, but was predicting a fall in profit. A company spokesperson said the firm was seeking to reduce stock levels and expected the demand to increase in the future.

a How can total revenue rise but profits fall?

b Explain:

i how a reduction in stock levels could increase profit

ii one way a firm could increase demand.

INDIVIDUAL ACTIVITY 3

In 2016, Next, a well-known UK clothes retailer, received a total revenue of $4.1bn and earned a profit of $821m. A year before, its revenue had been $4bn and its costs were $3.2bn.

The way that clothes retailers seek to raise demand for their products varies. Some spend a lot on advertising, while others concentrate on buying good sites and window displays, and expanding online sales.

a Calculate Next's total cost in 2016.

b Calculate Next's profit in 2015.

c Explain how buying good sites, window displays and online shopping can increase profits.

Summary

You should know:

- Total cost rises with output.
- In the short run, firms incur both fixed and variable costs.
- Fixed costs do not change with output in the short run.
- Average fixed costs fall as output rises.
- Variable costs increase as output rises.
- Average variable cost tends to fall and then rise, as output increases.
- In the short run, total cost consists of fixed and variable costs.
- In the long run, all costs are variable.
- The shape of the long run average variable cost is influenced by economies and diseconomies of scale.
- Average revenue (price) is total revenue divided by the quantity sold.
- In a perfectly competitive market, average revenue stays the same as the quantity sold rises. In most markets, however, firms have to lower the price to sell more.
- Firms may seek to survive, grow, promote social welfare, earn enough profit to satisfy shareholders while pursuing other aims or make as much profit as possible.
- Profits are maximised when the positive gap between revenue and cost is greatest.
- Total profit is total revenue minus total cost whilst profit per unit is the difference between average revenue and average cost.
- A change in profit may affect the number and size of firms in the industry.
- Profit can be increased by raising revenue or cutting costs.
- Costs can be cut by reducing wastages and inefficiency, raising productivity and increasing the scale of operation.
- Revenue can be raised by altering price, improving the product, adapting more quickly to changes in consumer demand and advertising.

Multiple choice questions

1 Which of the following is a fixed cost to a manufacturing firm?

A Insurance on buildings

B Overtime payments to workers

C The cost of energy

D The cost of raw materials

2 A firm produces 50 units of output. The total variable cost of this output is $200 and the total fixed cost is $300. What is the average total cost of production?

A $2

B $4

C $6

D $10

3 A firm sells 100 units at a price of $4 per product. From this information, calculate the firm's total revenue (TR) and average revenue (AR).

	Total revenue ($)	Average revenue ($)
A	100	4
B	100	25
C	400	4
D	400	25

4 A firm achieves profit maximisation. What does this mean?

A It cannot increase its profit by changing its output

B It makes more profit than the other firms in the industry

C It maximises its total revenue

D It produces at the lowest possible cost

Four-part question

a Giving an example, define *variable cost*. **(2)**

b Explain **two** causes of an increase in a firm's profit. **(4)**

c Analyse, using diagrams, how a rise in output affects total fixed cost and average fixed cost. **(6)**

d Discuss whether or not firms try to maximise profits. **(8)**