



EDEXCEL INTERNATIONAL GCSE (9–1)

ECONOMICS

Student Book

Rob Jones



PEARSON EDEXCEL INTERNATIONAL
GCSE (9–1)

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ABOUT THIS BOOK

This book is written for students following the Pearson Edexcel International GCSE (9–1) Economics specification and covers both years of the course.

The course has been structured so that teaching and learning can take place in any order, both in the classroom and in any independent learning. The book contains four units that match the four areas of content in the specification: The Market System, Business Economics, Government and the Economy and The Global Economy.

Each unit is split into multiple chapters to break down content into manageable chunks and to ensure full coverage of the specification.

Each chapter features a mix of learning and activities. Global case studies are embedded throughout to show a range of situations and businesses within the context of the chapter. Summary questions at the end of each chapter help you to put learning into practice.

Paper 1 is Microeconomics and Business Economics and will test the information in the first two units. Paper 2 is Macroeconomics and the Global Economy and will test the information in the last two units. Knowing how to apply your learning will be critical for your success in the exam. To help with this, there are exam-style questions at the end of each unit and two full practice exam papers at the end of the book.

Learning objectives

Each chapter starts with a list of what you will learn from it. They are carefully tailored to address key assessment objectives central to the course.

Getting started

An introduction to the chapter, letting you think about the concepts you will be introduced to. Questions are designed to stimulate discussion and use of prior knowledge. These can be tackled as individuals, pairs, groups or the whole class.

Activity

Each chapter includes activities to embed understanding through case studies and questions.

GOVERNMENT AND THE ECONOMY 27 UNEMPLOYMENT 211

27 UNEMPLOYMENT

LEARNING OBJECTIVES

- Understand how unemployment is measured
- Understand the different types of unemployment: cyclical, structural, seasonal, voluntary and frictional
- Understand the impact of unemployment on: output, use of scarce resources, poverty, government spending on benefits, tax revenue, consumer confidence, business confidence and society

GETTING STARTED

It is important for a government to keep as many people as possible in work. If people do not work, they make no contribution to national production and their labour is wasted. Also, the living standards of those out of work are not as good as those with jobs. People can be without jobs for a number of reasons. Look at the examples below.

CASE STUDY: KOSTAS MANTALOS

Kostas Mantalos is married with a one-year old son. He lives on the Greek island of Kos. He works at one of many tourist hotels on the island. He is employed as a waiter and works 12 hours a day, 6 days a week between April and October. Unfortunately, he is not required from November to March. He earns €12,000 a year (plus tips) and is used to this pattern of work. However, he struggles financially when not working.



► A hotel in Kos

CASE STUDY: MAUREEN CONTE

Maureen was employed as a cost accountant by a construction company specialising in the building of oil rigs. However, in January 2015, she was made redundant as the company struggled to survive in an increasingly competitive market. Owing to a fall in the global oil price, there was a huge reduction in the number of oil-related construction projects being started. As a result, Maureen and four of her colleagues were laid off. Maureen hopes to get another job, but she is not confident because she has quite a specialised set of skills.



► An oil rig under construction

- 1 Why is Kostas Mantalos not employed after the end of October each year?
- 2 Why was Maureen made redundant?
- 3 Why should a government be concerned about unemployment?
- 4 In pairs, find out the level of unemployment in your country and make comparisons with three other countries of your choice.

36 THE MARKET SYSTEM 6 FACTORS THAT MAY SHIFT THE SUPPLY CURVE

SUBJECT VOCABULARY

consumption amount of goods, services, energy, or natural materials used in a particular period of time

subsidy money that is paid by a government or organisation to make prices lower, reduce the cost of producing goods or providing a service, usually to encourage production of a certain good

DID YOU KNOW?

Government subsidies to producers may have negative effects. For example, producers may lack the incentive to improve efficiency. Another problem is that the government will incur an opportunity cost when spending on subsidies. The money spent might be used on other items of government expenditure, such as education.

ACTIVITY 1

CASE STUDY: SUPPLY AND SUBSIDIES

In 2016, the Sri Lankan government announced that it would provide a Rs37 000 million fertiliser subsidy to the nation's paddy farmers that is, farmers growing rice. The Ministry of Agriculture said that paddy farmers would receive an annual payment of Rs25 000 for every two hectares of farmland used to grow rice. In addition, vegetable farmers growing vegetables such as green gram, cow peas, soya bean, Bombay onion and other crops, would also receive a fertiliser subsidy. The government said they would receive Rs10 000 per hectare.

Fertiliser subsidies have been an important feature of Sri Lankan agricultural policy since 2005. The subsidies have accounted for between 2 and 2.5 per cent of total government expenditure over the years. The subsidies have helped to increase paddy production, stabilise the price of rice and helped Sri Lanka to become self-sufficient in rice production.



► Paddy farmers in Sri Lanka

- 1 Why is the Sri Lankan government offering subsidies to paddy farmers?
- 2 Using a diagram, show the effect of these subsidies on the supply of rice in Sri Lanka.

Case study

Getting started, Chapter review and Activities are all based around case studies. They are drawn from around the world and will help you see learning applied to real-world contexts.

Did you know?

Interesting facts to encourage wider thought and stimulate discussion.

Subject vocabulary and General vocabulary

Useful words and phrases are colour coded within the main text and picked out in the margin with concise and simple definitions. These help understanding of key subject terms and support students whose first language is not English.

BUSINESS ECONOMICS 23 THE IMPACT OF CHANGES IN THE SUPPLY AND DEMAND FOR LABOUR 177

THE POWER OF TRADE UNIONS

GENERAL VOCABULARY
disputes serious disagreement between two groups of people, especially a disagreement between workers and their employers in which the workers take action to protect their interests

SUBJECT VOCABULARY
closed shop company or factory where all the workers must belong to a particular trade union
secondary picketing workers in one workplace or company strike in a group at a particular location in order to support the striking workers in a different workplace or company

KEY FACTS: EXAMPLES OF SOME TRADE UNIONS IN THE UK

- The NLU (National Union of Journalists) represents journalists.
- Equity represents actors.
- The NUT (National Union of Teachers) represents teachers.
- The largest union in the UK is the UCU. It has around 2 million members and is a general union. This means that it represents the interests of lots of different types of workers.

EFFECTS OF TRADE UNIONS ON WAGES AND EMPLOYMENT

In the 1960s and 1970s, many trade unions in the UK were involved in **disputes** with employers. There was a considerable amount of disruption to production and some people thought that trade unions were responsible. Some people felt that unions had become too powerful. As a result, in the 1980s, the government passed legislation to limit the power of trade unions. For example, new laws:

- required trade unions to have a **secret ballot** before a strike; a strike could only go ahead if the majority of members voted in favour
- allowed businesses to sue for compensation if trade unions did not obey the law
- banned secondary picketing
- made closed shops illegal.

Partly as a result of this anti-trade union legislation, trade unions became weaker in the UK. They also became less popular and as a result their membership fell. This weakened their position further. For example, in 1980 around 10 million workers belonged to trade unions in the UK. By 2015, this had fallen to about 6.5 million. Trade union membership has fallen in other countries. Figure 23.6 shows the decline in trade union membership in Australia since 1990.

Year	Membership (%)
1990	42.5
1995	37.7
2000	32.9
2005	28.7
2010	24.4
2014	15.1

▲ Figure 23.6 Australian trade union membership, 1990–2014

A strong trade union may be able to force wages up in some labour markets. If a union has the full support of its members, it can put pressure on employers during wage negotiations. When this happens, unions are able to affect wages and employment levels. In Figure 23.7, the equilibrium wage without trade union interference is W_1 , where the supply, Q_L , and demand, Q_D , for labour is equal. If a trade union becomes involved, it will force wages up. In this case, trade unions have insisted that wages of W_2 are paid to workers. This means that an employer cannot hire workers below the wage rate of W_2 . As a result, a new supply curve for labour, S_2 , emerges. This supply curve has a horizontal section, which is perfectly elastic. This means that the employer must pay W_2 for all workers employed up to Q_{L2} . If the firm needs to hire more workers beyond Q_{L2} , wages will rise further.

One of the effects of trade union interference here is that the higher wage of W_2 has resulted in fewer workers being employed. Employment has dropped from Q_{L1} to Q_{L2} . This is because the demand for labour falls when wages increase. Therefore, it could be argued that trade union interference has increased wages at the expense of jobs for some of its members. However, job losses might be avoided:

- if labour productivity rises at the same time
- if employers are able to pass on wage increases to customers in the form of price rises
- if profit margins are reduced.

Key facts

Easy to understand, useful information to contextualise learning.

Multiple-choice questions

Each chapter features multiple-choice questions to test your knowledge and prepare you for similar questions in the exam.

THE MARKET SYSTEM 5 THE SUPPLY CURVE 33

MULTIPLE-CHOICE QUESTIONS

- Which of the following is true of supply?
 - A If price increases the supply curve will shift to the right
 - B If the price falls, the quantity supplied will also fall
 - C The amount supplied and the price are inversely related
 - D The supply curve is always horizontal
- If supply is fixed which of the following is true?
 - A Demand will also be fixed
 - B The supply curve will be vertical
 - C Suppliers will not offer any quantity for sale
 - D Supply will fall when price rises

ECONOMICS IN PRACTICE

CASE STUDY: FOTHERGILL & SONS

Fothergill & Sons manufacture a range of wooden products – mainly heavy furniture, such as large tables, benches and beds. One of its profitable lines is park benches, which are often sold to local governments. Many of Fothergill's benches are to be found in local council parks. The number of park benches that Fothergill & Sons is prepared to offer for sale at different prices in a year is shown in Table 5.3.

PRICE (£)	20	40	60	80	100	120	140	160
NUMBER OF BENCHES PA	0	200	400	600	800	1000	1200	1400

▲ Table 5.3 Supply schedule for park benches made by Fothergill & Sons

▲ Park bench

CHAPTER QUESTIONS

- Draw the supply curve for park benches using the data in Table 5.3.
- How many park benches would be supplied if the price was £110?
- If Fothergill & Sons wanted to supply 1300 park benches per annum, how much would it expect to sell them for?
- Why is supply 0 at a price of £20?
- Discuss whether Fothergill & Sons could supply three times as many park benches.

Economics in practice and Chapter questions

A summary case study and associated questions at the end of each chapter to consolidate your learning.

THE GLOBAL ECONOMY END OF SECTION EXAM QUESTIONS 347

EXAM PRACTICE: 2.2 THE GLOBAL ECONOMY

A01 1 What is a restriction on the physical quantity of imports coming into a country called? (1)

A Tariff
B VAT
C Subsidy
D Quota

A01 2 Sometimes a business will sell goods below cost in a foreign market. What is this practice called? (1)

A Restrictive trade practice
B Dumping
C Collusion
D Price fixing

A02 3 Explain one reason for the emergence of multinational corporations. (3)

The Association of Southeast Asian Nations (ASEAN) is one of the largest trading blocs in the world. It has ten members from the Southeast Asia region. Some of the largest members include Thailand, Vietnam, Malaysia, Indonesia, Philippines and Singapore.

A02 4 Analyse the impact of this trading bloc on a member country. (6)

A03 Like many countries around the world Vietnam has embraced globalisation. In a survey, 95 per cent of Vietnamese respondents agreed that 'trade was good'. The survey also revealed that Vietnamese people thought that trade resulting from globalisation brought jobs and raised wages. The US is one of Vietnam's main trading partners. In 2015, Vietnam sold US\$30 000 million of goods to the USA, making it the top market for Vietnamese exports.

A02 5 Assess the likely impact of globalisation on a country such as Vietnam. (6)

A03

A04

(Total for the Question = 20 marks)

Exam practice
These exam-style questions are found at the end of each unit. They are tailored to the Pearson Edexcel specification to allow for practice and development of exam writing technique. They also allow for practice responding to the command words used in the exams.

Assessment objectives
Questions are tagged with the relevant assessment objectives that are being examined.

SKILLS
ANALYSIS
INTERPRETATION
CRITICAL THINKING
REASONING
ADAPTIVE
INTERPRETATION
LEARNING
CREATIVITY

Skills

Relevant exam questions have been assigned the key skills that you will gain from undertaking them, allowing for a strong focus on particular academic qualities. These transferable skills are highly valued in further study and the workplace.

348 ECONOMICS EXAMINATION (PAPER 1) PAPER 1 MICROECONOMICS AND BUSINESS ECONOMICS

PREPARING FOR YOUR INTERNATIONAL GCSE ECONOMICS EXAMINATION (PAPER 1)

PAPER 1 MICROECONOMICS AND BUSINESS ECONOMICS

This complete practice paper will help you prepare for your International GCSE Paper 1 examination.

QUESTION 1

A01 (a) Which of the following will cause the supply curve for motor cars to shift to the left? (1)

A A rise in incomes
B A fall in indirect taxes on cars
C A rise in the cost of wages paid to car workers
D A fall in the cost of raw materials in car manufacturing

A02 (b) Which of the following goods or services are most likely to be provided by the private sector? (1)

A Public transport
B Policing
C Environmental services
D Hotels

A01 (c) What is meant by opportunity cost? (2)

A01 (d) Define the term collusion. (1)

A01 (e) Define the term supply. (1)

A01 A hotel in Sri Lanka incurred fixed costs of LKR 400 000 in January 2017. The variable cost per room let in January was LKR 1000. The hotel charges LKR 2000 per night for a room.

A02 (f) Calculate the profit made by the hotel in January 2017 if a total of 430 rooms were let. You are advised to show your working. (2)

Figure 1 below shows a market in disequilibrium. The current price is £20.

Figure 1

A02 (g) Calculate the revenue that producers would generate at this price. You are advised to show your working. (2)

Preparing for your International GCSE Economics examination

A full practice exam for both Paper 1 and Paper 2 at the back of the book helps you prepare for the real thing.

ASSESSMENT OVERVIEW

The following tables give an overview of the assessment for this course. You should study this information closely to help ensure that you are fully prepared for this course and know exactly what to expect in each part of the assessment.

PAPER 1	PERCENTAGE	MARK	TIME	AVAILABILITY
MICROECONOMICS AND BUSINESS ECONOMICS Written exam paper Paper code 4EC1/01 Externally set and assessed by Pearson Edexcel Single tier of entry	50%	80	1 hour 30 minutes	January and June examination series First assessment June 2019
PAPER 2	PERCENTAGE	MARK	TIME	AVAILABILITY
MACROECONOMICS AND THE GLOBAL ECONOMY Written examination paper Paper code 4EC1/02 Externally set and assessed by Pearson Edexcel Single tier of entry	50%	80	1 hour 30 minutes	January and June examination series First assessment June 2019

ASSESSMENT OBJECTIVES AND WEIGHTINGS

ASSESSMENT OBJECTIVE	DESCRIPTION	% IN INTERNATIONAL GCSE
A01	Recall, select and communicate knowledge of economic terms, concepts and issues	14–15%
A02	Demonstrate understanding and apply economic knowledge using appropriate terms, concepts, theories and calculations effectively in specific contexts	48–49%
A03	Select, organise and interpret information from sources to investigate and analyse economic issues	23–24%
A04	Evaluate economic information to make reasoned judgements and draw conclusions	12–13%

RELATIONSHIP OF ASSESSMENT OBJECTIVES TO UNITS

UNIT NUMBER	ASSESSMENT OBJECTIVE			
	A01	A02	A03	A04
PAPER 1	7.5%	24.4%	11.8%	6.3%
PAPER 2	7.5%	24.4%	11.8%	6.3%
TOTAL FOR INTERNATIONAL GCSE	14–15%	48–49%	23–24%	12–13%

ASSESSMENT SUMMARY

PAPER 1	DESCRIPTION	MARKS	ASSESSMENT OBJECTIVES
MICROECONOMICS AND BUSINESS ECONOMICS PAPER CODE 4EC1/01	Structure Paper 1 assesses 50% of the total Economics qualification. There will be four questions on the paper, each worth 20 marks. Students must answer all questions. The sub-questions are a mixture of multiple-choice, short answer, data-response and open-ended questions.	The total number of marks available is 80	Questions will test the following Assessment Objectives A01 – 7.5% A02 – 24.4% A03 – 11.8% A04 – 6.3%
	Content summary Each question will be based on a particular topic from the subject content related to microeconomics and business economics. Owing to the nature of economics, there is some interrelation between topics.		
	Assessment This is a single-tier exam paper and all questions cover the full ranges of grades from 9–1. The assessment duration is 1 hour 30 minutes. Calculators may be used in the examination.		
PAPER 2	DESCRIPTION	MARKS	ASSESSMENT OBJECTIVES
MACROECONOMICS AND THE GLOBAL ECONOMY PAPER CODE 4EC1/01	Structure Paper 2 assesses 50% of the total Economics qualification. There will be four questions on the paper, each worth 20 marks. Students must answer all questions. The sub-questions are a mixture of multiple-choice, short answer, data-response and open-ended questions.	The total number of marks available is 80	Questions will test the following Assessment Objectives A01 – 7.5% A02 – 24.4% A03 – 11.8% A04 – 6.3%
	Content summary Each question will be based on a particular topic from the subject content related to microeconomics and business economics. Owing to the nature of economics, there is some interrelation between topics.		
	Assessment This is a single-tier exam paper and all questions cover the full ranges of grades from 9–1. The assessment duration is 1 hour 30 minutes. Calculators may be used in the examination.		



1.1

THE MARKET SYSTEM

Assessment Objective A01

Recall, select and communicate knowledge of economic terms, concepts and issues

Assessment Objective A02

Demonstrate understanding and apply economic knowledge using appropriate terms, concepts, theories and calculations effectively in specific contexts

Assessment Objective A03

Select, organise and interpret information from sources to investigate and analyse economic issues

Assessment Objective A04

Evaluate economic information to make reasoned judgements and draw conclusions

This section looks at the basic economic problem, which is to do with the allocation of scarce resources. The section focuses on the way consumers, firms and the government make choices between different alternatives when faced with a limited budget. It also studies the underlying assumptions behind the behaviour of producers and consumers and the possible reasons why they may fail to maximise their profit or benefit, respectively.

Microeconomics is the study of individual markets. Therefore, this section looks at the way prices are determined in markets by the forces of supply and demand. It covers the factors that might influence supply and demand, and how supply and demand responds to changes in prices. Finally, the chapter addresses the ways in which market forces help to allocate resources in an economy, and what happens when markets fail.

1 THE ECONOMIC PROBLEM

LEARNING OBJECTIVES

- Understand the problem of scarcity
- Understand opportunity cost
- Understand production possibility curves
- Understand causes of positive and negative economic growth

SUBJECT VOCABULARY

goods things that are produced in order to be sold

GETTING STARTED

The planet we live on contains many resources that are used to produce **goods** we like to consume. However, there is a problem. Look at the images below.

CASE STUDY: RESOURCES AND NEEDS



▲ Figure 1.1 Valuable resources



▲ Figure 1.2 Needs

- 1 Describe the resources shown in Figure 1.1.
- 2 Are there enough of these resources in the world? Explain your answer with reference to the images in Figure 1.2.
- 3 In groups, discuss whether your country has enough resources. Draw up a list of measures that your government might take to increase the quantity of resources available. Present your ideas to the rest of the class.

THE PROBLEM OF SCARCITY

SUBJECT VOCABULARY

finite having an end or a limit

GENERAL VOCABULARY

fertile soil ground that is capable of producing crops

GENERAL VOCABULARY

health care activity of looking after people's health, considered to be an industry

needs basic requirements for human survival

wants people's desires for goods and services

SUBJECT VOCABULARY

infinite without limits

FINITE RESOURCES

All countries have resources, such as water, minerals, soil, plants, animals and people. However, in any country there is a **finite** quantity of these resources, which means that the quantity available is limited. As there is only a limited quantity, economists say that resources are scarce. These resources are often referred to as the four factors of production: land, labour, capital and enterprise (see Chapter 14).

Resources are scarcer in some countries than others. For example, in some African countries there are serious shortages of **fertile soil** and water. This means that food production is inadequate. Even where resources exist, a country may not be capable of exploiting them. For example, Ethiopia struggles to produce enough food for its population because only about 4 per cent of its fertile land is irrigated. The problem is not a shortage of water but the failure to exploit some of its huge rivers, such as the Awash and the Blue Nile. The country does not have the financial resources to invest in projects that would make use of the water for agriculture.

UNLIMITED WANTS

Economists distinguish between **needs** and **wants**. Needs are the basic requirements for human survival. Some of these needs are physical and include water, food, warmth, shelter and clothing. If these needs cannot be satisfied, eventually humans would cease to exist. In some countries in the world people do die because such needs cannot be met.

In addition to basic needs, humans also have other desires. These are called wants and may include more holidays abroad, a better house, more meals out, a bigger car, new golf clubs, a better education, improved **health care** and a cleaner environment. These wants are unlimited or **infinite**. People always want more whatever their current circumstances; it is human nature. The problem is made worse because many of the things that people want have to be replaced. Consumers regularly replace cars, computers, shoes, clothes and furniture, for example, either because they are no longer functional, or because better or more fashionable versions have become available.

ACTIVITY 1

CASE STUDY: NEED AND WANTS



▲ Figure 1.3 Different eating arrangements

- 1 How might the two images in Figure 1.3 illustrate the differences between needs and wants?
- 2 Why are resources finite?

THE ECONOMIC PROBLEM

SUBJECT VOCABULARY

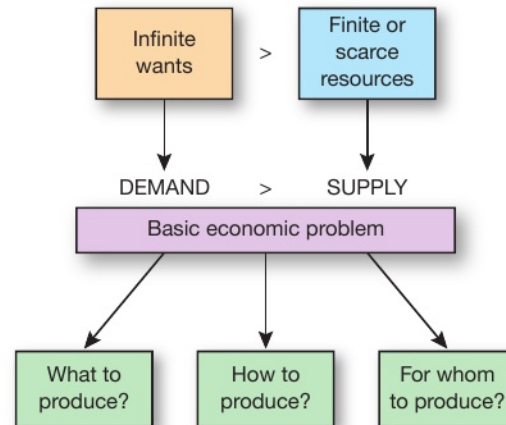
basic economic problem allocation of a nation's scarce resources between competing uses that represent infinite wants

scarce resources amount of resources available when supply is limited

GENERAL VOCABULARY

allocate to decide officially that a particular amount of money, time, etc. should be used for a particular purpose

All countries have to deal with what economists call the **basic economic problem**. The problem, summarised in Figure 1.4, occurs because the world's resources are scarce or finite and people's wants are infinite. Demand for resources is greater than their supply. As a result, decisions have to be made about how to **allocate** a nation's **scarce resources** between different uses. This is what the study of economics is all about.



▲ Figure 1.4 The basic economic problem

To overcome the basic economic problem, important decisions have to be made.

- **What to produce?** Because it is impossible to produce all the goods that people want, a country must decide which goods will be produced. For example, should resources be used to provide more libraries, build more schools, expand the armed forces, make more cars, build more houses, construct more roads, make more toys, print more books, increase state pensions or train more doctors?
- **How to produce?** Goods can be produced using a variety of different production methods. The four factors of production can be organised in different ways to produce the same goods.
- **For whom to produce?** Once goods have been produced, there has to be a method of **distribution**. This means that the goods have to be shared in some way between members of the population. For example, should everyone get exactly the same quantities or should some receive more than others?

There are different solutions to the basic economic problem. This is because different courses of action can be taken when making the decisions outlined above. The way in which they are made depends on what sort of economic system a country has. This is explained in Chapter 11.

OPPORTUNITY COST

GENERAL VOCABULARY

choices deciding between alternative uses of scarce resources

Whichever approach is used to solve the basic economic problem, all decision makers are faced with **choices**. Resources often have a number of alternative uses; as a result people have to make a choice about which way to use them. Individuals, producers and governments face this choice.

- Individuals have to choose how to spend their limited budgets. For example, a university student, after all living costs have been met, may have £50 left at the end of the week. This student would like to buy some new books (£20), get the train home for the weekend (£30), go out for a meal with

KEY FACTS

In China, many clothes manufacturers use large quantities of labour in production. However, in many Western countries the same goods may be produced using high-tech machinery.

GENERAL VOCABULARY

distribution act of sharing things among a large group of people in a planned way

friends (£30), buy some new computer software (£20) or buy a new pair of designer jeans (£50). Clearly, a choice has to be made because all of these goods together would cost £150.

- Producers may have to choose between spending £100 000 on advertising, training its workforce or buying a new machine.
- A government may have to decide whether to spend £5000 million on increasing welfare benefits, building new hospitals, providing better care for the mentally ill or building a new motorway.

GENERAL VOCABULARY

sacrifice something valuable that you decide not to have, in order to get something that is more important

SUBJECT VOCABULARY

opportunity cost cost of the next best alternative given up (when making a choice)

When making such choices, individuals, firms and governments will face a cost once their choice has been made. This is called the **opportunity cost**. This cost arises because a **sacrifice** has to be made when making a choice. If the government in the example above can place its spending desires in order of preference, the opportunity cost can be identified. Once the government has chosen the best alternative, the opportunity cost will be the benefit lost from the next best alternative. Assume that the government's spending desires are placed in order of preference as below:

- 1 new motorway
- 2 new hospital
- 3 increase welfare benefit
- 4 improve care for the mentally ill.

In this example, the new motorway is the government's preferred choice. Therefore, the £5000 million will be allocated to this project. The opportunity cost in this case is the benefit lost from not building the new hospital, that is, the benefit lost from the next best alternative.

ACTIVITY 2

CASE STUDY : OPPORTUNITY COST

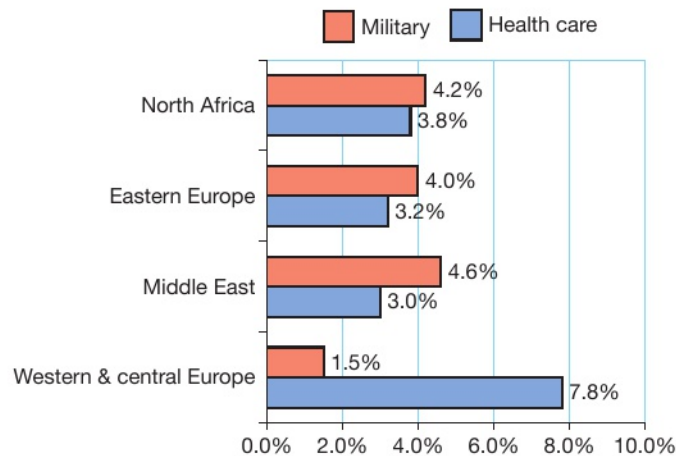
In 2015, according to the Stockholm International Peace Research Institute (SIPRI), the value of global military spending was US\$1 676 000 million. This was about 2.3 per cent of the world's gross domestic product (a measure of world income). This level of spending on military goods often attracts criticism about the possible opportunity costs it incurs. In some regions, more is spent on the military than on health care – Figure 1.5 identifies four of these regions. Figure 1.5 also shows that in western and central Europe spending on health care is far higher than that on military goods. Campaigners often say that government **expenditure** on the military is a waste of resources. They recommend spending at least some of this money on meeting human needs. For example, the Global Campaign on Military Spending called for a 10 per cent cut in worldwide military spending. It said the money saved should be used for development purposes. In support of this campaign, Kazakhstan's President Nursultan Nazarbayev said that all nations should give 1 per cent of their military spending to the United Nations Special Fund for Global Development. In 2015, the UN Food and Agriculture Organisation said that a redirection of just 13 per cent of the global military budget could **eliminate** extreme poverty and hunger.

SUBJECT VOCABULARY

expenditure spending by a government, usually a national government

GENERAL VOCABULARY

eliminate to get rid of something unnecessary or unwanted



▲ Figure 1.5 Spending on health care and military goods in a selection of regions (as a percentage of GDP)

- 1 Suggest one reason why spending on health care in western and central Europe is far higher than that on military goods, compared with the other regions shown.
- 2 What is meant by opportunity cost? Use this case as an example in your answer.

PRODUCTION POSSIBILITY CURVES (PPCs)

SUBJECT VOCABULARY

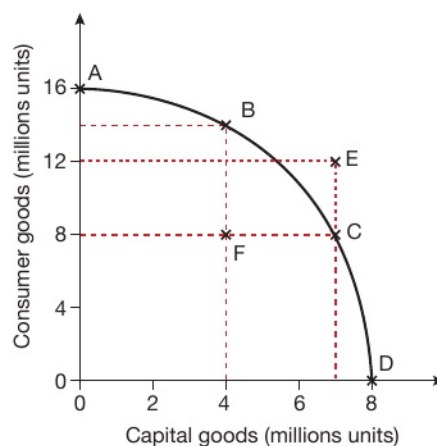
capital goods those purchased by firms and used to produce other goods such as factories machinery, tools and equipment

consumer goods those purchased by households such as food, confectionery, cars, tablets and furniture

production possibility curve (PPC) line that shows the different combinations of two goods an economy can produce if all resources are used up

Deciding which goods to produce and the concept of opportunity cost can be illustrated using **production possibility curves (PPCs)**. A PPC shows the different combinations of two goods that can be produced if all resources in a country are fully used. It shows the maximum quantities of goods that can be produced. A PPC for a country is shown in Figure 1.6. It is assumed that the country can produce **consumer goods** or **capital goods**. What does the PPC show?

- At point A, 16 million units of consumer goods are produced and zero capital goods.
- At point D, 8 million units of capital goods can be produced and zero consumer goods.
- At point B, a combination of 14 million units of consumer goods and 4 million units of capital goods can be produced.
- At point C, a combination of 8 million units of consumer goods and 7 million units of capital goods can be produced.
- At point F, a combination of 8 million units of consumer goods and 4 million units of capital goods can be produced. At this point, not all resources in the country are being used – there are unemployed resources. This is because point F is inside the PPC. A country should aim to push production so that it is on the PPC. At points A, B, C and D resources are fully employed.
- The combination of goods represented by point E is not possible. This is because it is outside the PPC. The country does not have the resources to produce 12 million units of consumer goods and 7 million units of capital goods.



▲ Figure 1.6 A production possibility curve for a country

WHAT HAPPENS WHEN AN ECONOMY MOVES FROM ONE POINT ON THE PPC TO ANOTHER?

For example, what happens if the economy in Figure 1.6 moves from B to C? By moving along the PPC, an opportunity cost is incurred. At point B, 14 million units of consumer goods are being produced and 4 million units of capital goods. By moving to C, the production of capital goods rises to 7 million units but production of consumer goods falls to 8 million units. To gain another 3 million units of capital goods, 6 million units of consumer goods are being sacrificed. The lost production of consumer goods (6 million units) is the opportunity cost.

The choice between different combinations of consumer goods and capital goods is an important one for a country. If a country produces more capital goods, it will probably be able to produce more consumer goods in the future. This is because capital goods are used to produce consumer goods. However, by doing so there will be fewer consumer goods today and some people will have less in the short term.

CAUSES OF POSITIVE AND NEGATIVE ECONOMIC GROWTH

SUBJECT VOCABULARY

economic growth increase in the level output by a nation

GENERAL VOCABULARY

proportion part of a number or an amount, considered in relation to the whole

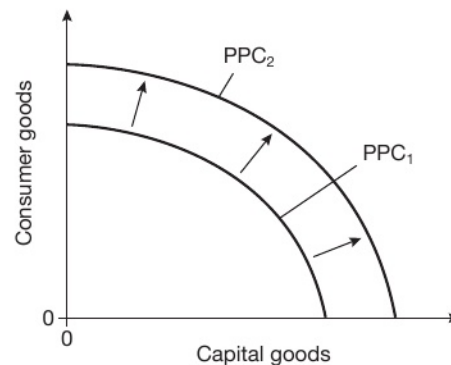
vocational training that teaches you the skills you need to do a particular job

At a particular point in time, a country cannot produce combinations of goods that lie to the right of the PPC. However, over a long period of time, an economy would expect to raise the production of all goods. This is called **economic growth**. There are several reasons for this.

- **New technology:** As time passes, new technology is developed and this benefits businesses. For example, new machines such as robots, computers, telecommunications and the internet have been used by businesses to help increase productive potential. New technology is usually faster and more reliable in production and therefore more output can be produced.
- **Improved efficiency:** Over time, resources are used more efficiently. New production methods, such as kaizen (continuous improvement) and lean production (using fewer resources in production), for example, have been developed and adopted. These more efficient methods replace the old ones and more output can be produced with fewer resources.
- **Education and training:** An economy can boost the productive potential of a nation by educating and training the population. A country's economy becomes more productive as the **proportion** of educated workers increases. This is because educated workers can more efficiently carry out tasks that require reading and writing analysis, evaluation, communication and critical thinking. However, a country has to find the 'right' balance between academic and **vocational** education.

- **New resources:** Some countries find new resources that enable them to produce more. For example, in recent years, the USA has raised its productive potential by producing more oil through fracking. Fracking involves shooting a mixture of mostly water and sand under high pressure against rock until it fractures or breaks. The sand fills the fracture, forcing oil out of the rock formation. Fracking now provides the USA with around 50 per cent of its oil needs. This is up from just 2 per cent in 2000.

If countries can produce more, the PPC will shift outwards. This is shown in Figure 1.7, PPC_1 represents an original PPC, while PPC_2 shows a new PPC resulting from improved efficiency, for example. Combinations of goods not previously possible can now be enjoyed. To generate economic growth in this way, a government needs to ensure that investment levels are adequate. Economic growth is discussed in more detail in Chapter 25.



▲ Figure 1.7 Effect of improved efficiency on the PPC

GENERAL VOCABULARY

agricultural practice or science of farming

Finally, it is possible for the PPC to shift inwards. This would represent negative economic growth, that is, where a country's productive potential actually falls. It may be caused by resource depletion: where a country runs out of a natural resource, such as oil or coal. The productive potential of a country can also be reduced by weather patterns. For example, dry weather might prevent some nations from meeting their **agricultural** production targets. Economic growth in a particular country might also be negative if large numbers of highly qualified, skilled and experienced workers moved overseas. This might happen if these workers could earn more money employed in another country. Wars, conflict and natural disasters might also result in negative economic growth.

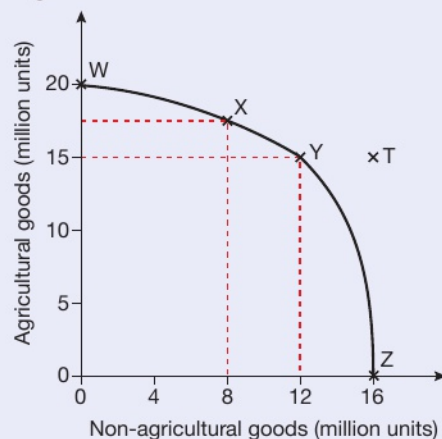
MULTIPLE-CHOICE QUESTIONS

- ▶ 1 Which of the following questions is associated with the basic economic problem?
 - A When to produce?
 - B Who should produce?
 - C What to produce?
 - D Where should production be located?
- ▶ 2 Which of the following might be considered a need rather than a want?
 - A Shelter
 - B Holiday
 - C Smartphone
 - D Pet dog

ECONOMICS IN PRACTICE

CASE STUDY: PRODUCTION POSSIBILITY CURVES

A country is able to produce agricultural and non-agricultural goods. It is currently at point X on the production possibility curve, as shown in Figure 1.8.



▲ Figure 1.8 PPC of a country producing agricultural and non-agricultural goods

CHAPTER QUESTIONS

- 1 Describe what a production possibility curve is. Use this case as an example in your answer.
- 2 According to the PPC, the decision makers in this country must make what key choice?
- 3 Why is point T on the diagram currently unobtainable?
- 4 The country is considering a movement from X to Y. What will be the opportunity cost of such a movement?
- 5 Using a diagram, consider the effect that the discovery of fresh oil reserves might have on the PPC of this country.

2 ECONOMIC ASSUMPTIONS

LEARNING OBJECTIVES

- Understand the underlying assumptions in economics
- Understand why consumers might not maximise their benefit
- Understand why producers may not maximise their profit

SUBJECT VOCABULARY

variables something that affects a situation in a way that means you cannot be sure what will happen

GENERAL VOCABULARY

assumptions things that you think are true although you have no definite proof

irrational not based on clear thought or reason

GETTING STARTED

Economics is a social science that studies how individuals make decisions about the allocation of scarce resources. It often uses economic models to help predict the behaviour of **variables** (such as inflation, unemployment, consumer spending and wages) and to explain the cause of certain events. In using these models, economists are required to make some **assumptions** about the behaviour of individuals. Look at the example below.

CASE STUDY: MAKING CHOICES

In general, economists assume that an individual behaves rationally when making a choice. This means that an individual will make a thoughtful and logical decision when choosing between different courses of action. For example, a young student, Anita, is given Rs5000 to spend on anything she chooses up to that value. She draws up a list of the things she would like to buy and places them in order of preference. The items, each of which cost Rs5000, are shown in Figure 2.1. Option A is her most preferred option and option D is her least preferred.



◀ A Meal out to treat her friends



◀ B Ticket for India v England at Rajkot



◀ C A new outfit for a future wedding



◀ D Flight to Mumbai to visit her brother

▲ Figure 2.1 Items that Anita would like to buy

- 1 Why it would be **irrational** for Anita to choose option C given the information above?
- 2 What is the opportunity cost of choosing option A?

UNDERLYING ASSUMPTIONS IN ECONOMICS

GENERAL VOCABULARY

rational based on clear thought or reason

When making economic decisions, individuals are usually faced with limitations. In 'Getting started' above, Anita could not buy all the things she wanted. She was limited by the amount of money she had available (Rs5000) and therefore had to choose one from four different options. However, to help her make the decision, she placed the four items of expenditure in order of preference. By doing this, she was able to select option A. This is **rational** because according to her list option A is the most preferred option, that is, the one that will give her the most satisfaction. Economists assume that individuals behave in a rational way. They make the following two assumptions in relation to rationality.

1 CONSUMERS AIM TO MAXIMISE BENEFIT

When making economic decisions, economists assume that consumers will always choose a course of action that gives them the greatest satisfaction. This will help them **maximise** benefit. In 'Getting started' above, Anita chose to spend her Rs5000 on the most preferred item in her list, that is, the meal out with her friends. This is a rational decision; economists assume that consumers will always do this. Two other examples of consumer rationality are outlined below.

- If a consumer is faced with buying exactly the same product from three different suppliers, the consumer will always buy from the supplier that offers the cheapest price. To pay more for a product than is necessary is irrational. For example, why would a consumer pay €1.14 for a litre of petrol at a filling station, when less than 500 metres away another is selling the same petrol for €1.09 per litre?
- If a consumer is faced with buying a product from three different suppliers at the same price, the consumer will buy the best quality product. To buy a product of lower quality would be irrational.

2 BUSINESSES AIM TO MAXIMISE THEIR PROFIT

When business owners make decisions, they will always choose a course of action that has the best financial results. This is because economists assume that business owners will want to make as much profit as possible. Owners are assumed to be rational when making financial decisions about their businesses. Two examples are outlined below.

- If a business owner can buy some raw materials from three different suppliers, the owner will always buy the cheapest available as long as the quality is the same. To pay more for raw materials than is necessary would be irrational.
- When setting a price for a product, a business owner will always choose the highest price that the market can stand. For example, if a business owner can sell a product for €5 in a market, that owner would not charge €4.50. This would be irrational. By charging the highest possible price, business owners will be maximising **revenue** and therefore maximising their profit. Economists assume that business owners will always do this.

SUBJECT VOCABULARY

maximise to increase something such as profit, satisfaction or income as much as possible

SUBJECT VOCABULARY

revenue money that a business receives over a period of time, especially from selling goods or services

REASONS WHY CONSUMERS MAY NOT ALWAYS MAXIMISE THEIR BENEFIT

In some circumstances, a consumer may fail to maximise their benefit when making a choice. There are three possible reasons that help to explain this.

- It is possible that some consumers have difficulty in calculating the benefits from consuming a product. This is because measuring the satisfaction gained from consuming a product is often very difficult. It is hard to quantify (express in numbers) the satisfaction gained from consumption. For example, in 'Getting

started' above, how can Anita measure precisely the satisfaction gained from going out for a meal, going to the cricket match, buying a new outfit and visiting her brother? They are four very different acts of consumption. Anita has overcome the problem by placing the choices in order of preference. However, she may have overestimated or underestimated the possible satisfaction that any one of the four acts of consumption gives her. As a result, she may not have maximised her benefit when choosing the meal out.

- Some consumers develop buying habits that may affect their ability to make rational choices. For example, over a period of time some consumers stay loyal to a particular brand. Once they become used to a brand, they continue to buy it habitually. Even when other brands on the market offer better value, they maintain their loyalty. This seems irrational but such behaviour can be observed. For example, many people buy the same newspaper all of their lives. They may start by choosing a particular title and then carry on purchasing this paper out of habit. They may ignore new publications and other options continually. This behaviour is not uncommon. Businesses are aware of this behaviour and many try to develop brand loyalty through their marketing activities. If businesses can establish a strong brand and build up a loyal customer base, they can often charge higher prices.
- Another reason why some consumers do not maximise their benefit is because they are influenced by the behaviour of others. Young consumers may adopt some of the buying habits of their parents. For example, when young people leave home for the first time and make purchases that their parents once made, they may choose the same brands as their parents. This may be because they trust their parents or because they are familiar with the brands. It may not be because they prefer these brands to others. For example, it is reckoned that 59 per cent of people aged between 18 and 24 open their first bank accounts at the same bank as their parents. Also, some consumers are influenced by their friends or peers; they may copy their purchases in an effort to fit in or because they submit to pressure from their peers.

ACTIVITY 1

CASE STUDY: MAXIMISING CONSUMER BENEFIT

PandaCheck is a Chinese price comparison website. Like price comparison websites all over the world, they help consumers to find the cheapest deals when shopping online. The website is designed to help online shoppers find the best prices, search for current promotions, and learn some tips and tricks when ordering goods from China. For example, if you wanted to buy a battery for an ASUS laptop computer, you would type 'ASUS laptop battery' into the search engine and click on the search button. You would then see a list of the prices charged by all the Chinese online shops that stock the product. The user can change the order of the list but most people would probably want the list to show the cheapest suppliers at the top. Each listing gives a description of the product written by the supplier. This extra information may help consumers in their selection.

- 1 What is meant by a rational consumer?
- 2 How will PandaCheck help consumers to maximise their benefits?
- 3 Discuss one reason why a consumer may fail to maximise their benefits when making a purchase.

REASONS WHY PRODUCERS MAY NOT ALWAYS MAXIMISE THEIR PROFIT

It is possible that some business owners may not maximise their profits. Three key reasons may explain this.

- The performance of some businesses may be influenced by the behaviour of other people in the organisation. In some businesses, not all decisions are made directly by the owners. Business owners sometimes **delegate** decision making to others who may have different objectives to those of the owners. For example, managers in the sales department of a business may try to maximise sales revenue. They may do this because their salaries are linked to sales levels (the more they sell, the more **commission** they get). However, maximising sales may not result in the maximisation of profit. This is because to sell larger and larger quantities the price will eventually have to be lowered. When the price is lowered, the profit made on each extra unit sold will fall (and may become negative).
- Some producers have alternative business objectives. Although profit may be important to them, other issues may also be important. Consequently, by focusing on other objectives, it may not be possible for the producer to maximise profits. For example, some businesses focus on customer care; they may try to exceed customer expectations by providing high-quality customer service. This may mean that they spend more money on training their staff in giving good customer service. As a result, the extra costs incurred in training will reduce profitability.
- Some commercial **enterprises** operate as charities. They are sometimes called not-for-profit organisations. They aim to raise awareness and money for a particular cause. For example, UNICEF is an international charity that provides **humanitarian** and developmental help to children and their mothers. It collects money from donations and operates a number of commercial activities to generate revenue. This money is used to fund its humanitarian and developmental activities. Economists cannot assume that such organisations seek to maximise their profits, since they have other aims.
- Also, an increasing minority of businesses are being set up as social enterprises. These are organisations that operate commercially but aim to maximise improvements in human or environmental well-being. For example, MitiMeth is a Nigerian social enterprise that aims to find solutions to ecological problems. For example, many of Nigeria's waterways are 'clogged-up' with destructive water hyacinth plants. MitiMeth uses these nuisance plants (after they have been dried out in the sun) to make handcrafted products such as baskets, tableware and even jewellery. The sale of these products generates revenue but one of the key aims of the business is to solve an ecological problem.

Finally, consumers will be prevented from maximising their benefits, and producers from maximising their profits if they do not have access to all the information available. For example, if a consumer does not know that a particular product can be purchased at a lower price in another location, that consumer will not be able to maximise benefit due to a lack of information. However, in recent years, access to the internet and developments in social media, mean that the flow of information around the world has increased. This helps both consumers and producers to maximise their benefits and profits.

SUBJECT VOCABULARY

enterprises companies, organisations or businesses

GENERAL VOCABULARY

commission amount of money paid to someone according to the value of goods, shares or bonds they have sold

delegate to give part of your power or work to someone else, usually someone in a lower position than you

humanitarian concerned with improving bad living conditions and preventing unfair treatment of people

MULTIPLE-CHOICE QUESTIONS

- ▶ 1 Which of the following would help consumers and producers to maximise their benefits and profits, respectively?
- A Lower prices
 - B Access to more information
 - C Improved transport networks
 - D Better quality products
- ▶ 2 Which of the following is a reason why consumers may not maximise their benefits?
- A Some consumers are very poor
 - B Opportunity costs may be too high
 - C Some consumers may develop buying habits that are hard to give up
 - D Some consumers save a high proportion of their income

ECONOMICS IN PRACTICE

GENERAL VOCABULARY

retailer business that sells goods to members of the public, rather than to shops

CASE STUDY: MAXIMISING PROFIT?

ANNA'S SWIMWEAR

Anna Freeman runs a small company that manufactures swimwear. Most of her sales are made online to individual consumers. However, in 2015, she received an order for 3000 swimsuits from a **retailer** 100 kilometres away. She accepted the order and agreed to deliver the swimsuits herself. However, Anna needed to hire a van for 24 hours in order to make the delivery. She contacted three budget van hire companies and gathered the information shown in Table 2.1.

HIRE COMPANY	HIRE FEE (24 HOURS)	DISTANCE CHARGE	INSURANCE CHARGE	TOTAL
A	US\$40	5 cents per km	US\$12	
B	US\$59	Zero	zero	
C	US\$30	10 cents per km	US\$15	

▲ Table 2.1 Costs of hiring a van from three different van hire companies



▲ A self-drive hire van

SUBJECT VOCABULARY

administration activities involved with managing and organising the work of a company or organisation

MÉDECINS SANS FRONTIÈRES (MSF)

Médecins Sans Frontières (Doctors Without Borders) is an international not-for-profit medical humanitarian organisation. It employs 36 000 staff across 65 different countries. Its aim is to save lives and reduce the human suffering of people who are in danger by delivering medical care. MSF provides assistance to:

- victims of natural or man-made disasters
- victims of armed conflict
- other groups of people in distress.

MSF helps all people regardless of their gender, race, religion or political beliefs. In 2016, MSF helped refugees in Europe escaping from war, persecution and poverty. In Yemen, MSF provided lifesaving care to people affected by conflict. MSF also had units in Syria, South Sudan, Central African Republic and Iraq.

In 2015, MSF raised £42.7 million from donations. Eighty-six per cent of this money was spent on its medical operations, 12 per cent on fundraising and just 2 per cent on **administration**.



▲ MSF medical staff at work

CHAPTER QUESTIONS

- 1 Calculate the total cost to Anna of hiring a van for 24 hours from each van hire company shown in Table 2.1.
- 2 According to economists, which company would Anna select? Explain your answer.
- 3 Why might some of Anna's customers find it difficult to measure the benefit they get from buying a swimsuit?
- 4 Discuss why MSF does not aim to maximise profit. Give at least two reasons in your answer.

3 THE DEMAND CURVE

LEARNING OBJECTIVES

- Understand how demand is defined
- Understand how changes in price cause movements along the demand curve
- Understand what causes the demand curve to shift

GETTING STARTED

There is a strong link between the price charged for a good and the amount that people are willing to buy. Look at the example below.

CASE STUDY: CARPET STALL

Aziz Feddal makes carpets and sells them from his market stall inside the Henna Souk in Fez, Morocco. Table 3.1 shows the number of carpets that customers would buy per week at different prices.

PRICE (MAD)	60	80	100	120	140	160	180
WEEKLY PURCHASES	70	60	50	40	30	20	10

▲ Table 3.1 The number of carpets customers would buy at different prices

- 1 How many carpets would be bought at a price of MAD 100?
- 2 What happens to the number of carpets bought as the price increases?
- 3 What happens to the number of carpets bought when the price is lowered?



▲ Carpets on sale inside the Henna Souk, Fez, Morocco

EFFECTIVE DEMAND

Demand is the amount of a good that will be bought at given prices over a period of time. However, in economics it is **effective demand** that is really important. Effective demand shows how much *would* be bought (that is, how much people can afford to buy and would actually buy) at any given price. It does not mean how much people would like to buy if they had an endless amount of money.

THE DEMAND CURVE

Demand can be expressed graphically. This means that the relationship between price and demand can be shown on a graph. Consider the information in Table 3.2. This is a **demand schedule** and shows the demand for an electronic circuit board manufactured by a South Korean electronics company. The circuit boards are used in television production and sold worldwide.

SUBJECT VOCABULARY

demand curve line drawn on a graph that shows how much of a good will be bought at different prices

demand schedule table of the quantity demanded of a good at different price levels – can be used to calculate the expected quantity demanded

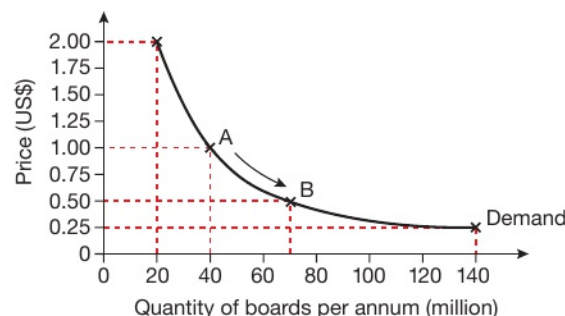
effective demand amount of a good people are willing to buy at given prices over a given period of time supported by the ability to pay

inverse relationship (between price and quantity demanded) when price goes up, the quantity demanded falls and when the price goes down the quantity demanded rises

PRICE (US\$)	0.25	0.50	1.00	2.00
QUANTITY OF BOARDS PER ANNUM (MILLION)	140	70	40	20

▲ Table 3.2 The demand for an electronic circuit board

The information in this schedule can be presented on a graph. This is shown in Figure 3.1. Price is shown on the vertical axis and the quantity demanded is shown on the horizontal axis. The amount sold at each price in the schedule is also shown. If these points are joined up with a smooth line, a **demand curve** is formed. A demand curve shows the quantity demanded at any given price. For example, in this case, when the price is US\$1 the quantity demanded is 40 million units.



▲ Figure 3.1 Demand curve for circuit boards sold by a South Korean company

The demand curve slopes down from left to right; for most goods this is always the shape of the demand curve. This is important because it shows that price and the quantity demanded have an **inverse relationship**. This means:

- when prices go up demand will fall
- when prices go down demand will rise.

For example, when the price of circuit boards falls from US\$1 to US\$0.50, the demand for circuit boards rises from 40 million to 70 million units.

MOVEMENT ALONG THE DEMAND CURVE

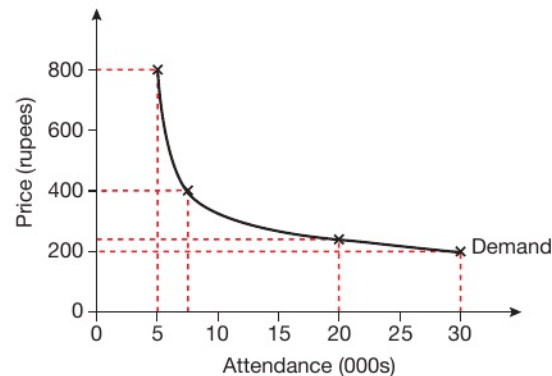
When there is a price change, there is a movement along the demand curve. In Figure 3.1, when the price falls from US\$1 to US\$0.50, we move along the demand curve from A to B to identify the new level of demand. The movement

along the demand curve in this case shows that the quantity demanded rises by 30 million units, from 40 million to 70 million units, when the price falls. This is important because other factors that influence demand, such as income, have a different effect on the demand curve. This is discussed below.

ACTIVITY 1

CASE STUDY: DEMAND FOR CRICKET TICKETS

An Indian cricket stadium has a capacity of 30 000. Figure 3.2 shows the demand curve for tickets to attend international cricket matches at the stadium.



▲ Figure 3.2 Demand for tickets at an Indian cricket stadium

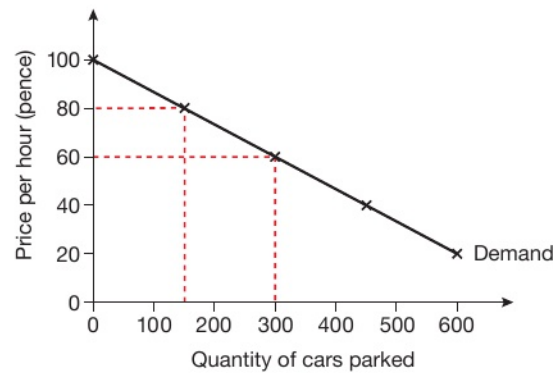


▲ An Indian cricket stadium

- 1 What will the attendance be if Rs400 is charged to attend a match?
- 2 What price must be charged to fill the stadium?

STRAIGHT-LINE DEMAND CURVES

The demand curves shown in Figures 3.1 and 3.2 are both downward sloping curves. In economics, it is common to show demand using a straight-line demand curve. The reason for this is to simplify the drawing of demand curves and to make it easier to understand diagrams. Most demand curves are shown as straight lines, like the one in Figure 3.3. This demand curve shows the demand for car park spaces at a city-centre car park. It still shows the important inverse relationship that exists between price and the quantity demanded. For example, if the price to park for an hour rises from 60 pence to 80 pence, the number of cars parked falls from 300 to 150.



▲ Figure 3.3 Straight-line demand curve showing the demand for spaces at a city-centre car park

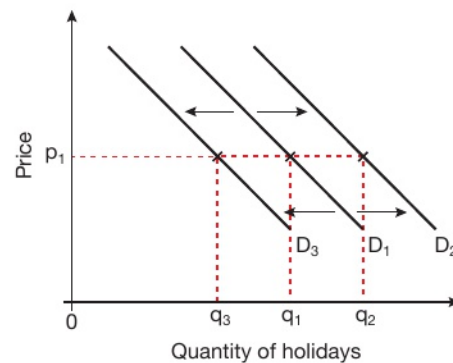
A SHIFT IN THE DEMAND CURVE

SUBJECT VOCABULARY

shift in the demand curve movement to the left or right of the entire demand curve when there is a change in any factor affecting demand except the price

If the price of a good changes, there is a movement along the demand curve. A change in any other factor, such as income for example, will be shown by a **shift in the demand curve**. The demand curve, D_1 , shown in Figure 3.4, is for package holidays to the Maldives. At the price of p_1 consumers are currently buying q_1 holidays.

- If there is an increase in incomes, the quantity demanded will rise at every given price. As a result, the demand curve will shift to the right, to D_2 shown in the diagram. At the price p_1 , the number of holidays bought would rise from q_1 to q_2 .
- If there is a decrease in incomes, the quantity demanded will fall at every given price. This will cause the demand curve to shift to the left, to D_3 shown in the diagram. At the price p_1 , the number of holidays bought would fall from q_1 to q_3 .



▲ Figure 3.4 Shift in the demand curve for holidays to the Maldives

The factors that are likely to cause the demand curve to shift (as shown above) are discussed in detail in Chapter 4 (see pages 23–29).

MULTIPLE-CHOICE QUESTIONS

- 1 Which of the following statements is true about a demand curve?
- A When the price falls, the quantity demanded falls
 - B There is a proportionate relationship between price and the quantity demanded
 - C It slopes up from left to right
 - D When there is a price change, there is a movement along the demand curve

- 2 Which of the following will cause a demand curve to shift to the left?
- A A fall in the price of a product
 - B A rise in income (for example)
 - C A rise in the price of a product
 - D A fall in income (for example)

ECONOMICS IN PRACTICE

CASE STUDY: AL'S BIG BURGER

Alan Buschwacker makes a living by selling burgers from a van. He parks his van at busy locations in Seattle, Washington, USA, and sells 'gigantic' burgers, which have become his trade mark in the area. Most of the time his wife assists him. Details of weekly demand for Al's burgers are shown in Table 3.3.

PRICE (US\$)	0.5	1	1.5	2	2.5	3	3.5	4
WEEKLY DEMAND	1600	1400	1200	1000	800	600	400	200

▲ Table 3.3 The demand schedule for Al's Big Burgers



▲ Al's burger van

CHAPTER QUESTIONS

- 1 Describe what effective demand is.
- 2 Draw a demand curve using the information in Table 3.3.
- 3 Al currently charges US\$3 for his giant burgers. How many burgers would he expect to sell at this price?
- 4 If Al wanted to sell 1400 burgers, what price would he have to charge?
- 5 Describe what the inverse relationship between the price and the quantity demanded for a product is. Use this case as an example in your answer.

4 FACTORS THAT MAY SHIFT THE DEMAND CURVE

LEARNING OBJECTIVE

- Understand the factors that cause a shift in the demand curve: advertising, income, fashion and tastes, price of substitutes, price of complements and demographic changes

GETTING STARTED

Chapter 3 showed that demand for a product is influenced by the price charged. Generally, if the price of a product is increased, the quantity demanded will fall. However, a number of other factors could affect the demand for goods. These can shift the demand curve. Look at the example below.

CASE STUDY: HOLIDAY TREAT

Jacob Atudo works for a big oil company in Kenya. In 2016, he was promoted and received a 20 per cent pay increase. He decided to spend some of his extra pay on a treat for him and his wife. He had seen a television advert recently placed by a travel company; the advert offered discounts on holidays to the Seychelles. He knew that his wife would enjoy a trip abroad so went ahead and booked the holiday.

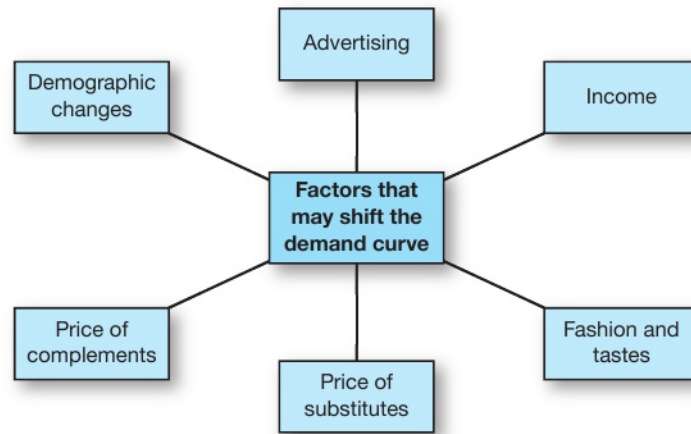


▲ A luxury villa in the Seychelles

- 1 In addition to the price, what two factors might affect the quantity demanded for holidays in the Seychelles?
- 2 What would you expect to happen to the quantity demanded for holidays in the Seychelles during a recession? Explain your answer.
- 3 In pairs, choose any two products that you or your family regularly buy. Make a list of the things that might influence demand for these two products. Present your ideas to the rest of the class.

FACTORS THAT MAY SHIFT THE DEMAND CURVE

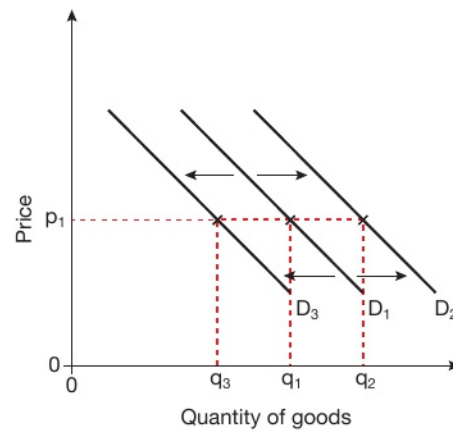
Price is the main factor that affects the quantity demanded. However, there are many other factors and each of them may actually shift the demand curve. Some of the most important factors are summarised in Figure 4.1.



▲ Figure 4.1 The main factors that may shift the demand curve

ADVERTISING

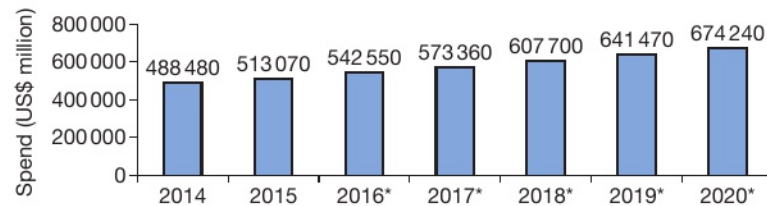
Businesses try to influence demand for their products through advertising and other forms of promotion. For example, in the highly competitive soft drinks industry, Coca-Cola spent US\$3499 million on advertising in 2014. If goods are advertised more heavily, the quantity demanded is likely to increase. This helps to explain the huge amounts that some businesses, such as Coca-Cola, are prepared to spend on advertising. Although it might be difficult to measure the precise impact advertising expenditure has on the quantity demanded, most would agree that such spending will help to increase demand. An increase in advertising expenditure is likely to shift the demand curve to the right – from D_1 to D_2 in Figure 4.2.



▲ Figure 4.2 Shifts in the demand curve

ACTIVITY 1

CASE STUDY: DEMAND AND ADVERTISING



▲ Figure 4.3 Global adspend, 2014–20 *Estimated

- 1 Calculate the percentage increase in predicted advertising expenditure between 2014 and 2020.
- 2 Why are some businesses prepared to spend so heavily on advertising?

SUBJECT VOCABULARY

disposable income income that is available to someone over a period of time to spend; it includes state benefits but excludes direct taxes

inferior goods goods for which demand will fall if income rises or rise if income falls

normal goods goods for which demand will increase if income increases or fall if income falls

INCOME

Generally, when **disposable income** rises, demand for goods will also rise. For example, if wages and salaries rise in the economy, people may decide to spend more money going out to restaurants. They may take an extra holiday or they may buy a new car. These are all **normal goods**. These are goods for which demand will rise when income rises. Most goods in the economy are normal goods. However, a minority of goods are **inferior goods**. This means that the quantity demanded will actually fall when incomes rise. Supermarket 'own label' brands or public transport may be examples of inferior goods. For example, consumers who generally buy a relatively cheap supermarket 'own label' brand of baked beans may switch to a more expensive brand when their incomes rise. Therefore, the quantity demanded for the supermarket 'own label' brand will fall. This would be shown by a shift in the demand curve to the left from D_1 to D_3 in Figure 4.2.

FASHION AND TASTES

Over a period of time, demand patterns change because there are changes in consumer tastes and fashion. For example, there has been a rise in demand for T20 cricket (cricket games that last for three hours) around the world in the last 10 years. This is reflected by the attendances at T20 fixtures in many different countries, such as India, Australia, Bangladesh and Sri Lanka. Stadiums are often full for international T20 fixtures. This compares with relatively smaller crowds at test match fixtures (cricket games that last for up to 5 days). T20 cricket has grown in popularity and increasing numbers of cricket fans find the style appealing.

The clothes industry is influenced strongly by changes in fashion. In many countries, there are a various buying seasons for clothes. Many of the clothes bought in one season would not be in demand in later seasons because they would no longer be in fashion.

Fashions and tastes may be influenced by social changes. For example, in recent years, millions of people have developed a keen interest in social media. Social media websites, such as Facebook, Twitter and Snapchat, have seen a huge increase in demand since their launch.

SUBJECT VOCABULARY

substitute goods goods bought as an alternative to another but perform the same function

SUBJECT VOCABULARY

complementary goods goods purchased together because they are consumed together

GENERAL VOCABULARY

demography study of human populations and the way in which they change

KEY FACTS

- Changes in the size and structure of the population may have other impacts in the economy than those mentioned in this chapter, for example, on firms and the government. (These will be discussed in other chapters.)
- There are likely to be changes in the size and structure of populations over time. For example, if the birth rate rises, there will be an increase in the size of the population.
- An increase in immigration (people coming to a country from overseas to live permanently), will tend to change both the size and the structure of the population.

PRICE OF SUBSTITUTES

Many goods sold by businesses have **substitute goods**. For example, a consumer buying a can of Coca-Cola might have considered other brands, such as Pepsi, Virgin or supermarket 'own label'. Most consumers would consider these as good substitutes. The price of substitutes will affect demand. If the price of a substitute were lowered, demand for a product would fall. This would be shown by a shift to the left in the demand curve for that product from D_1 to D_3 in Figure 4.2. If a good has a lot of close substitutes, then the prices of these will affect demand significantly.

PRICE OF COMPLEMENTS

Some goods are purchased together by consumers. This is because the two goods are used together, for example, consumers of cornflakes will also buy milk, and people who buy cars will also buy car insurance. In these examples, milk and cornflakes and cars and car insurance are **complementary goods**. Demand for such products is likely to be affected by the price of a complementary good. For example, if the price of milk were to rise the demand for cornflakes may fall.

DEMOGRAPHIC CHANGES

Clearly, as the world's population grows, there will be an increase in demand for goods and services. However, demand will also be affected by the structure of the population as well as its size: **demography** affects demand.

- The age distribution of a population is the number of people who fall into different age groups. For example, in many countries, there has been growth in the number of people aged over 60. This will have an effect on demand patterns. For example, as the population ages there will be more demand for goods such as retirement homes, specialist holidays for the elderly and health care.
- In some countries, in the population overall there are more women than men. And there are many more women than men in older age groups. Consequently, the gender distribution of the population is likely to affect demand patterns. For example, there will be a greater demand for women's clothes than men's clothes, particularly in older age groups.
- The geographical distribution may affect demand. Increasingly, in most developed and developing countries more and more people live in urban areas. As a result, demand for schools and hospitals in urban areas will be higher than in rural areas.
- Many countries have ethnic groups in the population structure. If these ethnic groups grow in size, there is likely to be an increase in demand for products associated with their culture. In Australia, there is a large Southeast Asian population. This has resulted in the spread of restaurants offering Vietnamese, Malayan, Thai and Indonesian meals, for example.

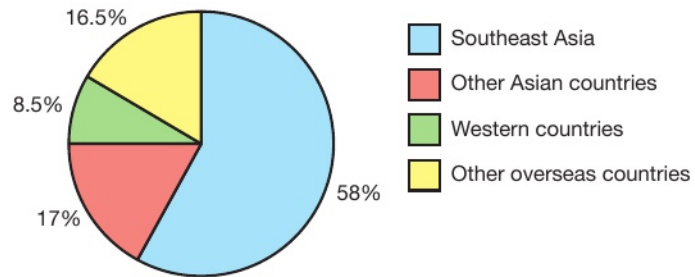
ACTIVITY 2

CASE STUDY: DEMAND AND POPULATION

The population of the UAE has grown significantly since 2000. Between 2000 and 2010, it grew from 2.9 million to 8.3 million. The UAE has a very large immigrant population. It is estimated that around 90 per cent of the population were born overseas. As Figure 4.4 shows more than half of non-UAE nationals come from Southeast Asia.

GENERAL VOCABULARY

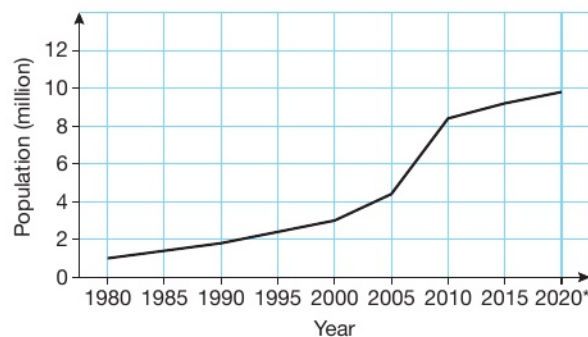
infrastructure basic systems and structures that a country needs to make economic activity possible, for example, transport, communication and power supplies



▲ Figure 4.4 Origins of UAE's immigrant population

Most of the immigrants are attracted to the country by employment opportunities. There has been a huge boom in the construction industry, for example. The UAE government has invested revenues from the sale of oil and gas into **infrastructure** development, residential real estate and commercial properties.

The UAE has the largest difference in the male:female ratio in the world, with 2.2 men for every woman, or 2.75 men for every woman in the 15–65 age group. The graph in Figure 4.5 shows the growth in the population of UAE from 1980 to 2020.



▲ Figure 4.5 UAE population growth, 1980–2020 *Estimated

- 1 Why has the population of the UAE increased so sharply in recent years? Give one reason in your explanation.
- 2 How will the change in the size of the UAE's population affect demand?
- 3 A significant number of the people migrating to the UAE are Southeast Asian. How might this affect demand patterns in the UAE?

MULTIPLE-CHOICE QUESTIONS

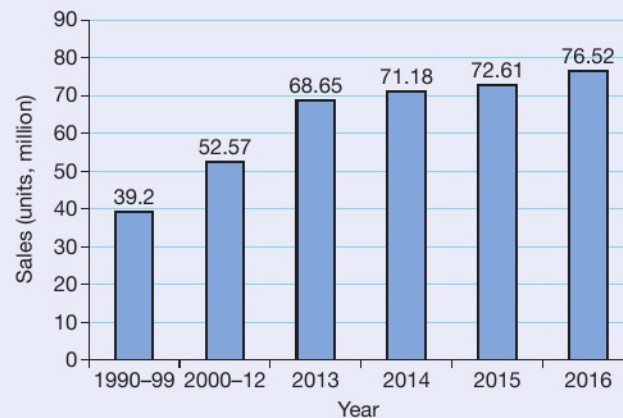
- ▶ 1 Cars and petrol are examples of which goods?
 - A Inferior goods
 - B Complementary goods
 - C Substitute goods
 - D Capital goods
- ▶ 2 A rise in the price of car insurance may have which effect?
 - A Increase the quantity demanded for cars
 - B Increase the quantity demanded for car insurance
 - C Shift the demand curve for cars to the left
 - D Shift the demand curve for cars to the right

ECONOMICS IN PRACTICE

CASE STUDY: GLOBAL DEMAND FOR CARS

Ever since cars became commercially available, demand for them has continued to increase. In 2016, it was predicted that 76.5 million new cars will be purchased worldwide. Rising demand is currently driven by rapid economic growth in countries such as India and China. Owning cars in such countries is a new experience for huge numbers of people. As people in developing countries become wealthier as a result of economic growth, more cars are purchased.

In recent years, the demand for electric vehicles (EVs) has increased. In 2015, total sales of EVs reached 1 million. It is estimated that by 2040 around 35 per cent of all cars purchased will be EVs. This growth in the demand for EVs is being driven by government investment in the public battery-charging infrastructure (with the rate of introduction of fast DC chargers growing by 350 per cent in China alone in 2015) and improvements in the driving range of EVs. Also, if oil prices recover to the pre-2014 levels (when oil was US\$140 a barrel) the incentive to buy an EV will be even stronger.



▲ Figure 4.6 Global demand for cars, 1990–2016

CHAPTER QUESTIONS

- 1 Suggest one reason why the global demand for cars is rising.
- 2 Discuss the possible factors that might affect the demand for electric cars in the future. Give two factors in your analysis.
- 3 What effect will the following have on the global demand for cars: **(a)** an increase in global incomes; **(b)** a rise in the price of petrol. Use diagrams in your answer.
- 4 What is the difference between a movement along the demand curve and a shift in the demand curve? Use a diagram in your explanation.

5 THE SUPPLY CURVE

LEARNING OBJECTIVES

- Understand how supply is defined
- Understand how changes in price cause movements along the supply curve
- Understand what causes the supply curve to shift

GETTING STARTED

Sellers or producers are responsible for meeting the needs of consumers. They provide goods and services that they hope people or other businesses will buy. There is a strong link between the price of a good and the quantity provided, for example, if prices are too low, sellers may not be interested in supplying the market because they may not be able to make enough profit.

CASE STUDY: CHICKEN FARMING

Tom Chang is a chicken farmer in rural China. He has reared chickens for 35 years and sells them to people in his local community. However, twice weekly, he takes chickens to a market about 15 kilometres away in order to boost sales. Table 5.1 shows the number of chickens he is prepared to offer for sale per week at different prices. For example, when the market price is CNY5, he is not prepared to sell any at all because he cannot make any profit at this price.

PRICE (CNY)	5	10	15	20	25	30	35	40
NUMBER OF CHICKENS	0	10	20	30	40	50	60	70

▲ Table 5.1 Number of chickens (per week) Tom Chang is prepared to offer for sale at different prices



▲ A chicken farm

- 1 How many chickens would Tom offer for sale if the price was CNY30?
- 2 In Table 5.1, what happens to the number of chickens offered for sale when prices rise?
- 3 Why do you think sellers, such as Tom, offer more for sale when prices are higher?

SUPPLY AND THE SUPPLY CURVE

SUBJECT VOCABULARY

supply amount that producers are willing to offer for sale at different prices in a given period of time
supply curve line drawn on a graph which shows how much of a good sellers are willing to supply at different prices

GENERAL VOCABULARY

per annum (p.a.) for or in each year

SUBJECT VOCABULARY

proportionate relationship (between price and the quantity supplied)
 when the price goes up, the quantity supplied also goes up and when the price goes down the quantity supplied goes down

Supply is the amount of a good that sellers are prepared to offer for sale at any given price over a period of time. For example, in 'Getting started' above, if the market price for chickens was CNY30, Tom Chang would sell 50 chickens during a week. This means that the supply of chickens by Tom Chang at CNY30 during a particular week was 50.

The supply of any product can be expressed graphically. This means that the relationship between price and the quantity supplied can be shown on a graph. Consider the information in Table 5.2. This is a schedule showing the supply of handmade golf shoes by M. Crammer and Son, a family business in Florida, USA.

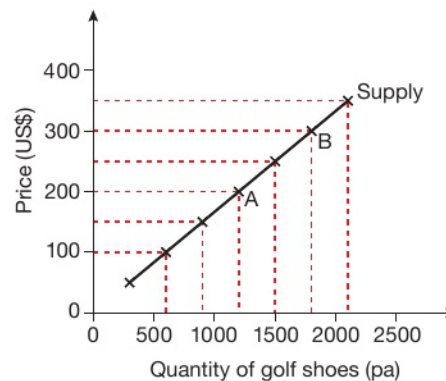
PRICE (US\$)	0	50	100	150	200	250	300	350
QUANTITY OF GOLF SHOES (PER ANNUM)	0	300	600	900	1200	1500	1800	2100

▲ Table 5.2 Supply schedule for handmade golf shoes by M. Crammer and Son

The information in the schedule can be presented on a graph, as shown in Figure 5.1. Like the demand curve, price is shown on the vertical axis and quantity on the horizontal axis. The amount supplied by M. Crammer and Son at each price in the schedule is also shown. If these points are joined together, a **supply curve** is formed. This is a straight-line supply curve and shows the quantity supplied at any given price. For example, when the price of golf shoes is US\$200, M. Crammer and Son will supply 1200 pairs **per annum**.

The supply curve slopes up from left to right, which means there is a **proportionate relationship** between price and the quantity supplied. This shows that:

- when prices go up, supply will also go up
- when prices go down, supply will also go down.



▲ Figure 5.1 Supply curve for golf shoes made by M. Crammer and Son

For example, when the price of golf shoes rises from US\$200 a pair to US\$300 a pair, the quantity supplied will increase from 1200 pairs to 1800 pairs. This applies to the vast majority of goods. However, there are exceptions and one such exception is discussed later in this chapter (see page 32).

The reason for this relationship is mainly because businesses are motivated by profit. If prices are rising, existing businesses will be willing to supply increasing amounts of a good because they may make more profit. Or, more businesses will join the market in the belief that they can also make a profit. As a result supply in the market increases.

MOVEMENT ALONG THE SUPPLY CURVE

As with demand, when there is a price change, there is a movement along the supply curve. In Figure 5.1, when the price rises from US\$200 to US\$300, for example, we move along the supply curve from A to B to identify the new level of supply. The movement along the supply curve in this case shows that the quantity supplied is increased from 1200 pairs of golf shoes to 1800 pairs when the price rises. This only happens when there is a price change. If there are changes in any other factor influencing supply, the effect on the supply curve is different. This is discussed below.

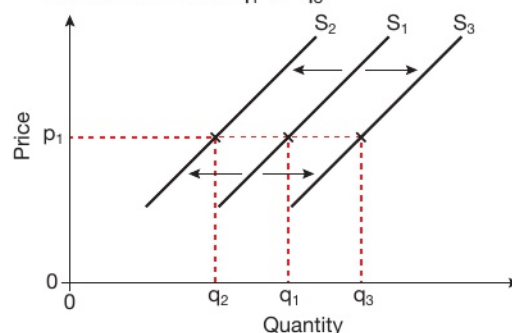
A SHIFT IN THE SUPPLY CURVE

SUBJECT VOCABULARY

shift in the supply curve movement to the left or right of the entire supply curve when there is any change in the conditions of supply except the price

If the price of a good changes, there is a movement along the supply curve. A change in any other factor, such as production costs, will be shown by a **shift in the supply curve**. The supply curve, S_1 , shown in Figure 5.2, is for any product. At the price of p_1 , sellers are offering quantity q_1 for sale.

- If there is a rise in production costs, the quantity supplied will fall at every given price. This will cause the supply curve to shift to the left, to S_2 as shown in the Figure 5.2. At the price p_1 , the quantity of goods offered for sale would fall from q_1 to q_2 .
- If there is a fall in production cost, the quantity supplied will rise at every given price. As a result, the supply curve will shift to the right, to S_3 as shown in the diagram. At the price p_1 , the quantity of goods offered for sale would rise from q_1 to q_3 .



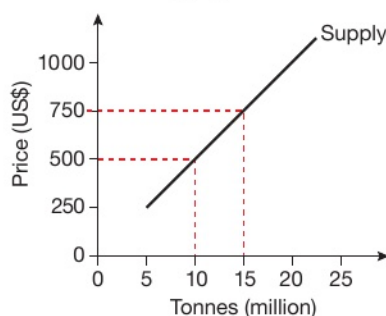
▲ Figure 5.2 Shift in the supply curve for a product

The range of factors that are likely to cause the supply curve to shift (as shown above) is discussed in detail in Chapter 6 (pages 34–39).

ACTIVITY 1

CASE STUDY: STEEL SUPPLY IN A COUNTRY

The annual supply curve for steel in a country is shown in Figure 5.3.



▲ Figure 5.3 Annual supply of steel for a particular country

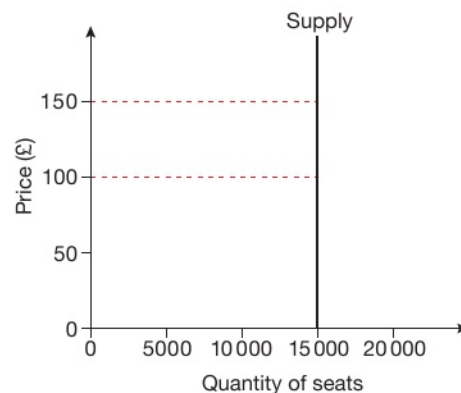


▲ Steel production

- 1 What will happen to the supply of steel if the price rises from US\$500 to US\$750 per tonne?
- 2 Why are steel suppliers likely to offer more for sale at higher prices?

FIXED SUPPLY

In some circumstances, the supply of a product or service may be fixed. If this is the case, then the supply curve will be vertical. Supply will be fixed if it is impossible for sellers to increase supply even when prices rise. Supply at venues where sports matches and other events are held may be fixed. An example is shown in Figure 5.4. Centre Court at Wimbledon (the main stadium at the venue) has a capacity of 15 000. It is impossible to offer more than 15 000 seats for tennis matches at this venue. Even if the price of tickets were to rise, say, from £100 to £150 for a match, no more seats could be supplied.



▲ Figure 5.4 Fixed supply – the capacity of Wimbledon's Centre Court



▲ Wimbledon's Centre Court

MULTIPLE-CHOICE QUESTIONS

- 1 Which of the following is true of supply?
- A If price increases the supply curve will shift to the right
 - B If the price falls, the quantity supplied will also fall
 - C The amount supplied and the price are inversely related
 - D The supply curve is always horizontal
- 2 If supply is fixed which of the following is true?
- A Demand will also be fixed
 - B The supply curve will be vertical
 - C Suppliers will not offer any quantity for sale
 - D Supply will fall when price rises

ECONOMICS IN PRACTICE

CASE STUDY: FOTHERGILL & SONS

Fothergill & Sons manufacture a range of wooden products – mainly heavy furniture, such as large tables, benches and beds. One of its profitable lines is park benches, which are often sold to local governments. Many of Fothergill's benches are to be found in local council parks. The number of park benches that Fothergill & Sons is prepared to offer for sale at different prices in a year is shown in Table 5.3.

PRICE (£)	20	40	60	80	100	120	140	160
NUMBER OF BENCHES P.A.	0	200	400	600	800	1000	1200	1400

▲ Table 5.3 Supply schedule for park benches made by Fothergill & Sons



▲ Park bench

CHAPTER QUESTIONS

- 1 Draw the supply curve for park benches using the data in Table 5.3.
- 2 How many park benches would be supplied if the price was £110?
- 3 If Fothergill & Sons wanted to supply 1300 park benches per annum, how much would it expect to sell them for?
- 4 Why is supply 0 at a price of £20?
- 5 Discuss whether Fothergill & Sons could supply three times as many park benches.

6 FACTORS THAT MAY SHIFT THE SUPPLY CURVE

LEARNING OBJECTIVE

- Understand the factors that may cause a shift in the supply curve: costs of production, changes in technology, indirect taxes, subsidies and natural factors, such as natural disasters and the weather

GENERAL VOCABULARY

volatile changing quickly and suddenly, for example, a volatile market rises and falls without much warning

SUBJECT VOCABULARY

ventures new business activities or projects that involve taking risks

GETTING STARTED

Chapter 5 established that the supply of a product is influenced by the price in the market and showed that as the price rises, sellers are willing to supply more. However, there are other factors that could affect the supply of goods. Look at the example below.

CASE STUDY: NIGERIAN FARMING

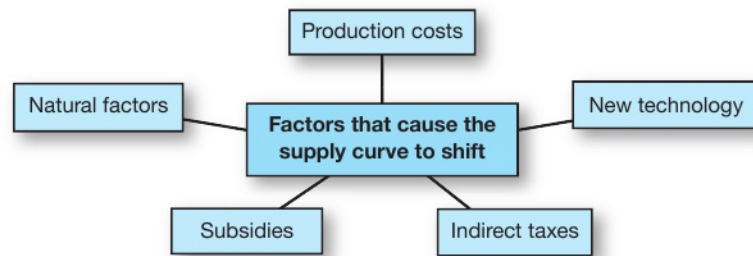
In 2016, growing numbers of Nigerian chicken and fish farmers were reducing production rates. Some were even abandoning their farms to pursue other business **ventures**. This was a response to **volatile** and rapidly rising feed costs. As a result, Nigerian politicians begged young people, and others who have left the countryside to seek a better life in the cities, to return to their family farms.

It is the rising costs of feed that has caused problems with supply. In Lagos state, fish farmers complained that feed prices had risen by as much as 80 to 100 per cent. Locally produced catfish feed has risen from NGN 6000 to NGN 9000, while imported feed has gone up from NGN 6000 to NGN 11 000 for a 15 kilogram bag.

- 1 Describe the main factor affecting supply in this case?
- 2 Calculate the percentage increase in the price of imported fish feed per 15 kilogram bag.
- 3 Why do you think the quantity supplied falls when production costs rise?
- 4 In pairs, choose any two products that you or your family regularly buy. Make a list of the things that might influence the supply of these two products. Present your ideas to the rest of the class.

FACTORS THAT MAY SHIFT THE SUPPLY CURVE

Price is the main factor that affects supply. However, a range of other factors may also have an impact. Unlike a change in price, which results in a movement along the supply curve, changes in these other factors can cause the supply curve to shift. These factors are summarised in Figure 6.1.

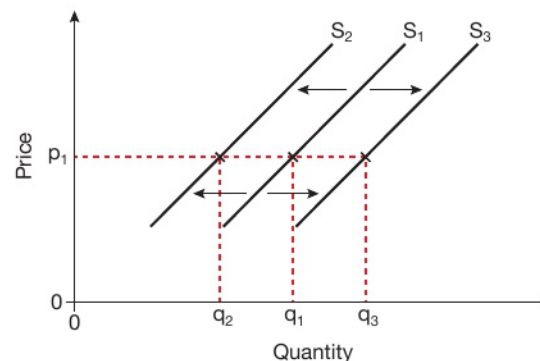


▲ Figure 6.1 Factors that can shift the supply curve

COSTS OF PRODUCTION

The quantity supplied of any product is influenced by the costs of production, such as wages, raw materials, energy, rent and machinery. Assuming the price is fixed, if production costs rise, sellers are likely to reduce supply. This is because their profits will be reduced. This is what happened in the example in 'Getting started' above. The rising cost of fish feed resulted in some fish farmers leaving the industry, causing the quantity supplied to fall. A rise in costs will cause the supply curve to shift to the left. This is shown in Figure 6.2. When costs rise, the whole supply curve will shift to the left, from S_1 to S_2 . At a price of p_1 , the amount supplied in the market falls from q_1 to q_2 .

If costs fall, the quantity supplied would increase because production becomes more profitable. As a result, the supply curve will shift to the right. This shows that more is supplied at every price. The new supply curve is S_3 and the amount supplied at p_1 will rise from q_1 to q_3 .



▲ Figure 6.2 Shift in the supply curve

The availability of resources will also affect supply. If there is a shortage in some of the factors of production – for example, land, labour or capital – this will cause it to be difficult for producers to supply the market because their costs are likely to rise.

INDIRECT TAXES

Indirect taxes are taxes on spending. VAT (valued-added tax) and duties, such as those on petrol and cigarettes, are examples of indirect taxes. Such taxes have an effect on supply. When they are imposed or increased, the supply curve will shift to the left. This is because indirect taxes represent a cost to

KEY FACTS: PRODUCTIVITY

In recent years, the UK has tried to increase **productivity** in manufacturing. However, in a recent survey, 73 per cent of industry leaders said they had found it difficult to recruit skilled workers. Both the quantity and quality of candidates were lacking. Sixty-seven per cent of bosses said they were regularly forced to deal with a lack of technical skills, 64 per cent said there were too few people applying and 61 per cent said candidates lacked relevant experience.

SUBJECT VOCABULARY

indirect taxes taxes levied on spending, such as VAT

productivity rate at which goods are produced, and the amount produced in relation to the work, time, and money needed to produce them

SUBJECT VOCABULARY

consumption amount of goods, services, energy, or natural materials used in a particular period of time

subsidy money that is paid by a government or organisation to make prices lower, reduce the cost of producing goods or providing a service, usually to encourage production of a certain good

DID YOU KNOW?

Government subsidies to producers may have negative effects. For example, producers may lack the incentive to improve efficiency. Another problem is that the government will incur an opportunity cost when spending on subsidies. The money spent might be used on other items of government expenditure, such as education.

firms. In Figure 6.2, the imposition of a tax would shift the supply curve to the left from S_1 to S_2 . As a result, the quantity supplied would fall from q_1 to q_2 .

If indirect taxes are reduced, the supply curve will shift to the right because costs are lower. In Figure 6.2, lower indirect taxes would shift the supply curve from S_1 to S_3 . As a result, the quantity supplied would rise from q_1 to q_3 .

Governments use indirect taxes to raise revenue for government expenditure and discourage the **consumption** of harmful products, such as cigarettes and alcohol. Indirect taxes might also be used to protect the environment. For example, taxes might be imposed on producers if their production methods result in damage to the environment. This is discussed in Chapter 29 (pages 228–239).

SUBSIDIES

Sometimes the government may give money to businesses in the form of a grant. This is called a **subsidy**. Subsidies may be given to firms to try to encourage them to produce a particular product. For example, in the EU, subsidies have been given to farmers to encourage them to produce certain agricultural products. If the government grants a subsidy on a good, the effect is to increase its supply. This is because subsidies help to reduce production costs. As a result, the supply curve will shift to the right, from S_1 to S_3 in Figure 6.2. This causes the amount supplied at p_1 to rise from q_1 to q_3 .

ACTIVITY 1

CASE STUDY: SUPPLY AND SUBSIDIES

In 2016, the Sri Lankan government announced that it would provide a Rs37 000 million fertiliser subsidy to the nation's paddy farmers (that is, farmers growing rice). The Ministry of Agriculture said that paddy farmers would receive an annual payment of Rs25 000 for every two hectares of farmland used to grow rice. In addition, vegetable farmers growing vegetables such as green gram, cow pea, soya bean, Bombay onion and other crops, would also receive a fertiliser subsidy. The government said they would receive Rs10 000 per hectare.

Fertiliser subsidies have been an important feature of Sri Lankan agricultural policy since 2005. The subsidies have accounted for between 2 and 2.5 per cent of total government expenditure over the years. The subsidies have helped to increase paddy production, stabilise the price of rice and helped Sri Lanka to become self-sufficient in rice production.



▲ Paddy farmers in Sri Lanka

- 1 Why is the Sri Lankan government offering subsidies to paddy farmers?
- 2 Using a diagram, show the effect of these subsidies on the supply of rice in Sri Lanka.

GENERAL VOCABULARY

yield amount of something that is produced, such as crops or oil extracted

CHANGES IN TECHNOLOGY

Over a period of time, new technology becomes available that many businesses use in their production processes. New technology is more efficient and can therefore reduce the costs of production. For example, when the price of oil fell sharply in 2014, many oil companies began to use new technology to lower their costs. Some companies began to use lasers and other hi-tech data analysis equipment to help measure the potential **yield** from new oil wells. Others used new techniques to help them produce more oil from both old and new wells. Since the introduction of new technology will help to lower production costs, firms are likely to offer more for sale. As a result, there will be a shift in the supply curve to the right, from S_1 to S_3 in Figure 6.2.

NATURAL FACTORS

The production of some goods is influenced by natural factors, such as the weather, natural disasters, or the presence of pests (for example, rats or mice) or diseases. This is true of many agricultural products. For example, good growing conditions can help to improve crop yields, which will increase supply. This will shift the supply curve to the right – from S_1 to S_3 in Figure 6.2. In contrast, poor growing conditions can cause severe shortages and the quantity supplied may be cut. This will shift the supply curve to the left, from S_1 to S_2 in Figure 6.2.

In 2016, there was a shortage of squid due to the effect of El Niño. El Niño is a natural but irregular climatic event responsible for raising the temperature of the sea along the coast of Ecuador and Peru. It can have far reaching effects. For example, it reduces the amount of nutrients in the sea that are essential to support marine life. It can also cause a change in wind patterns across the Pacific Ocean, drought (long periods of unusually dry weather) in Australasia and heavy rain in South America. El Niño caused a shortfall in the supply of squid, which forced prices up from around US\$1.80 to US\$2.20 per prepared squid in the USA. Catch totals of squid for the 2015/16 season were 37 000 tonnes, only 35 per cent of the seasonal catch limit of 107 000 tonnes.

ACTIVITY 2

CASE STUDY: SUPPLY AND THE WEATHER

A number of countries in recent years have faced severe water shortages. For example, in 2015 people in São Paulo, Brazil, once known as the ‘city of drizzle’, started to dig through basement floors and car parks to gain access to underground water. In California, it was reported that the state was suffering its fourth year of drought in a row with January 2015 becoming the driest month ever recorded. In the Middle East, overconsumption and reduced rainfall have reduced large areas of the countryside to desert and devastated agricultural production.

Changing weather patterns and melting snow and ice caused by global warming is having a severe impact on the world’s water systems. This means that around 1000 million people in the world do not have access to safe drinking water. The situation is also expected to get worse.

In the UAE, the government is taking measures to reduce the effects of drought. It is investing in desalination plants to convert seawater into drinking water and wastewater treatment units. It was reported that Crown Prince General Sheikh Mohammed bin Zayed al-Nahyan said, ‘For us, water is [now] more important than oil.’



▲ Effects of drought

- 1 What are the causes of the water shortages outlined above? Give at least two reasons in your answer.
- 2 What measures are being taken by the UAE to increase the supply of water?

MULTIPLE-CHOICE QUESTIONS

- ▶ 1 Which of the following will shift a supply curve to the left?
 - A A decrease in indirect taxes
 - B Higher production costs
 - C The introduction of new technology in production
 - D A government subsidy
- ▶ 2 A bumper wheat harvest across the world resulting from favourable weather conditions will do what?
 - A Shift the supply curve for wheat to the right
 - B Reduce the quantity demanded for bread
 - C Increase the price of wheat
 - D Reduce the price of butter

ECONOMICS IN PRACTICE

CASE STUDY: HOUSING SUPPLY IN KENYA

Like many countries, Kenya suffers from a housing shortage. People moving into towns and cities from rural areas looking for a better life have created housing shortages in the cities of Nairobi, Mombasa, Kisumu and Eldoret. The high cost of traditional house-building methods has reduced the ability of the government and private constructors to build new houses. However, new technologies are now being used to help resolve the problem.

House builders are now using newly developed expanded polystyrene Styrofoam (EPS) panels and aluminium moulds in their construction plans. These building materials are superior to the use of traditional materials, such as concrete, stone and mortar. They are strong, lightweight, fireproof

GENERAL VOCABULARY

formwork temporary or permanent moulds into which concrete or similar materials are poured or injected

and long lasting. EPS also keeps properties warm effectively while aluminium **formwork** makes for better quality walls and can be painted easily. House builders also save money on other parts of the construction. This is because the lightweight technologies do not require builders to lay deep foundations. The amount of concrete used on walls and flooring is reduced. For example, EPS only requires a 5 cm layer of concrete on the walls and floors instead of the 20 cm needed when using conventional building methods.

Houses can also be constructed more quickly. This is because housing units are assembled from sections that are manufactured off-site. This reduces labour costs and improves business cash flow. Housing has also become more affordable. New housing units are now accessible to the lower middle-class and low-income earners.

CHAPTER QUESTIONS

- 1 How will the use of EPS panels and aluminium formwork improve the supply of housing in Kenya? Use a diagram in your explanation.
- 2 What are the benefits of the new technologies in house building to: **(a)** construction companies; and **(b)** Kenyan residents?
- 3 Describe one measure the Kenyan government could take to help increase the supply of houses in the country.
- 4 What is the possible effect on the supply of houses in Kenya if construction companies had to pay much higher wages to workers. Use a diagram in your explanation.

7 MARKET EQUILIBRIUM

LEARNING OBJECTIVES

- Understand how equilibrium price and quantity are determined
- Understand how shifts in the supply and demand curves affect equilibrium price
- Understand excess supply and excess demand
- Understand how market forces can remove excess supply and excess demand

GENERAL VOCABULARY

government intervention where the government becomes involved in a situation in order to help deal with a problem

GETTING STARTED

In any market (unless there is **government intervention**), the forces of supply and demand set the prices. The price consumers pay for goods and services is the price where supply and demand are exactly the same. Look at the example below.

CASE STUDY: PRICE, SUPPLY AND DEMAND

Table 7.1 shows the quantities of a product that will be offered for sale by producers, and purchased by consumers, at different prices (in a given year). For example, when the price is CNY 20, producers will offer 40 000 units for sale and consumers will want to buy 70 000 units. However, at this price demand is greater than supply. This is not the price that will be charged in the market.

PRICE (CNY)	5	10	15	20	25	30	35	40	45
QUANTITY SUPPLIED (1000S)	0	20	30	40	50	60	70	80	90
QUANTITY DEMANDED (1000S)	85	80	75	70	65	60	55	40	45

▲ Table 7.1 The supply and demand schedule for a product

- 1 What price will be charged for the product in the above example?
- 2 How much is supplied and demanded when the price is CNY 40?
- 3 What will happen if producers set the price at CNY 40 for this product?

EQUILIBRIUM PRICE

SUBJECT VOCABULARY

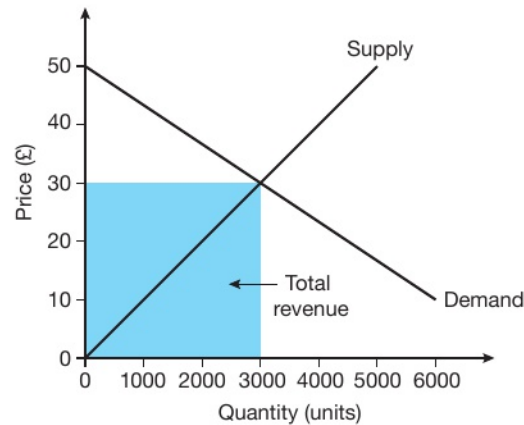
equilibrium price price at which supply and demand are equal

The way in which the forces of supply and demand determine prices in a market can be shown on a graph. Figure 7.1 shows the supply and demand curves for a product. In any market, the price is set where the wishes of consumers are matched exactly with those of producers. This price, called the **equilibrium price**, is where supply and demand are equal. In Figure 7.1, the equilibrium price is £30. At this price, consumers want to buy 3000 units and producers want to sell 3000. The wishes of buyers and sellers are matched. There is no other price where this happens. For example, if the price were £40, sellers would want to supply 4000 units. However, at this price, buyers only demand 1500 units because the price is too high.

SUBJECT VOCABULARY

market clearing price price at which the amount supplied in a market matches exactly the amount demanded

The equilibrium price is also known as the **market clearing price**. This is because the amount supplied in the market is completely bought up by consumers. There are no buyers left without goods and there are no sellers left with unsold stock. The market is cleared.



▲ Figure 7.1 Market equilibrium

TOTAL REVENUE

SUBJECT VOCABULARY

total revenue amount of money generated from the sale of goods calculated by multiplying price by quantity

Figure 7.1 also shows the **total revenue** or total expenditure at the equilibrium price. Total revenue is the amount of money generated from the sale of output. It is calculated by multiplying price and quantity.

$$\text{Total revenue} = \text{Price} \times \text{Quantity} \text{ or } TR = P \times Q$$

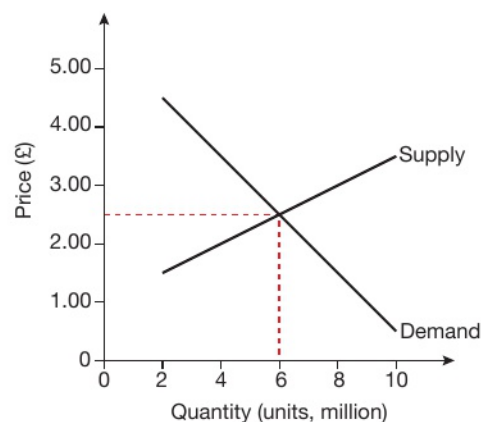
In this example, the shaded area in the diagram shows the total revenue. It is:

$$TR = P \times Q = £30 \times 3000 = £90\,000$$

ACTIVITY 1

CASE STUDY: EQUILIBRIUM PRICE

The market for woollen hats in a country is represented by the supply and demand curves shown in Figure 7.2.



▲ Figure 7.2 Market for woollen hats in a country

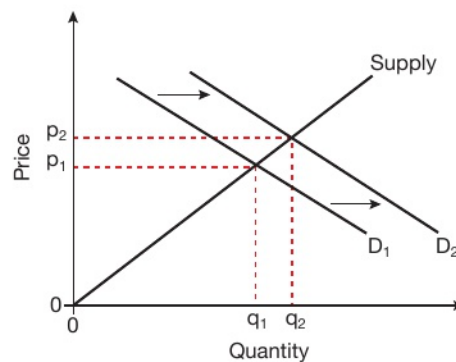


▲ A typical woollen hat

- 1 What is the equilibrium price and quantity?
- 2 What is meant by equilibrium price? Use this diagram in your explanation.
- 3 What is the value of total revenue at the equilibrium price?

SHIFTS IN DEMAND

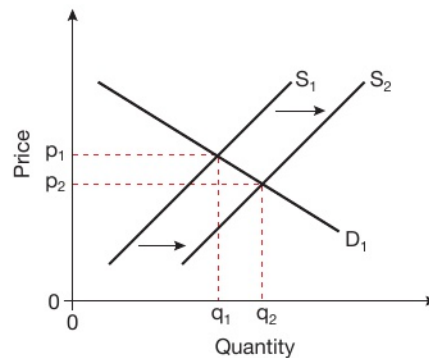
The equilibrium price will change if there are changes in supply or demand. For example, if demand increases, price will rise. In Figure 7.3, an increase in demand for the product is shown by a shift in the demand curve to the right, from D_1 to D_2 . This changes the equilibrium price because supply and demand are now equal at a different point. The price is forced up from p_1 to p_2 and the amount sold in the market has gone up from q_1 to q_2 . If demand were to fall, the opposite would happen. The demand curve would shift to the left and the price would fall. (This is not shown in the diagram.)



▲ Figure 7.3 Effect of a shift in demand for a product

SHIFTS IN SUPPLY

A change in supply will also affect equilibrium price. For example, if supply increases, the price will fall. In Figure 7.4, an increase in supply for the product is shown by a shift in the supply curve to the right, from S_1 to S_2 . This changes the equilibrium price because supply and demand are now equal at a different point. The price is forced down from p_1 to p_2 and the amount sold on the market has gone up from q_1 to q_2 . If supply were to fall, the opposite would happen. The supply curve would shift to the left and price would rise. (This is not shown in the diagram.)



▲ Figure 7.4 Effect of a shift in supply for a product

ACTIVITY 2

CASE STUDY: THE GLOBAL LITHIUM MARKET

In 2015, the global price of the metal lithium rose sharply, from US\$6000 per tonne to about US\$14 000 per tonne in just a few months. The quantity of lithium demanded has increased due to its growing use in car batteries for electric cars and devices such as smartphones, laptops and power tools.

At the moment, the main lithium-ion battery-makers are Samsung and LG of South Korea, Panasonic and Sony of Japan and ATL of Hong Kong. But China also has many battery-makers. The Chinese government is currently promoting the use of lithium-ion batteries and electric vehicles (EVs) – buses in particular. Sales of ‘new energy’ vehicles in China increased by almost three times in the first 10 months of 2015 compared with the same period in 2014. Tesla Motors, a US EV-maker, is starting large-scale battery production in Nevada. It hopes to supply lithium-ion batteries for 500 000 cars a year within five years. Much bigger carmakers are also increasing their demand for lithium. Toyota has begun using lithium-ion batteries instead of heavier nickel-metal hydride batteries in its Prius model.

Although the Earth contains plenty of lithium, extracting it can be expensive and time consuming. Consequently, the higher prices may not automatically increase the supply of lithium. Figure 7.5 shows the global lithium price between 2008 and 2015.



▲ Figure 7.5 Global lithium price, 2008–15

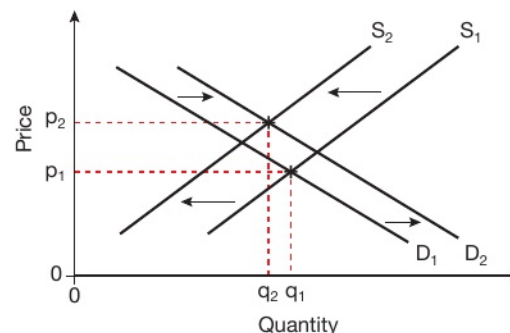
- 1 Calculate the percentage increase in the price of lithium in 2015 (when it rose from US\$6000 to US\$14 000).
- 2 Why has the price of lithium increased? Use a supply and demand diagram in your explanation.
- 3 What impact will a government subsidy paid to lithium producers have in the market? Use a supply and demand diagram in your explanation.

SHIFTS IN SUPPLY AND DEMAND

It is possible for both supply and demand to change at the same time in a market. For example, demand might increase and supply decrease at the same time. This is shown in Figure 7.6. The original equilibrium price is p_1 where $S_1 = D_1$. The increase in demand is represented by a shift to the right from D_1 to D_2 . The decrease in supply is represented by a shift to the left from S_1 to S_2 . The new equilibrium price, where $D_2 = S_2$, is p_2 . The price is higher and the amount sold in the market has fallen from q_1 to q_2 .

It must be noted that it would be possible to redraw the diagram to show that, although the price will be higher, the quantity sold could also be higher. To do this, it would be necessary to make the increase in demand greater than the decrease in supply. In Figure 7.6, the increase in demand is smaller than the decrease in supply.

When there is a change in both supply and demand, it is not possible to show exactly what will happen to price and quantity unless it is known precisely by how much supply and demand shift.



▲ Figure 7.6 Shift in supply and demand for a product

EXCESS DEMAND

SUBJECT VOCABULARY

excess demand where demand is greater than supply and there are shortages in the market

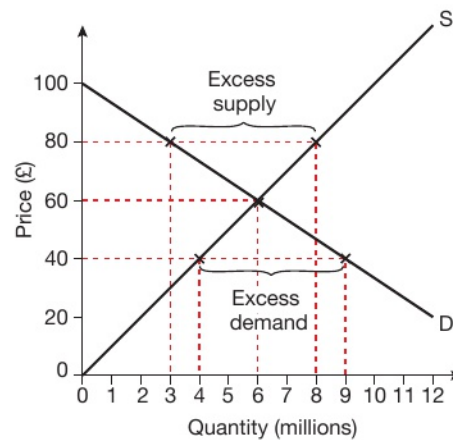
If the price charged in a market is below the equilibrium price, supply and demand will not be equal. In Figure 7.7, the equilibrium price is £60. At this price, the quantity supplied and the quantity demanded are both 6 million units. However, if the price is set lower, say at £40, the market is not in equilibrium. At this lower price, the quantity demanded is 9 million units and the quantity supplied is only 4 million units. There is **excess demand**, which means there is a shortage of goods in the market. In this case, there is a shortage of 5 million units (9 million – 4 million) at the price of £40.

EXCESS SUPPLY

SUBJECT VOCABULARY

excess supply where supply is greater than demand and there are unsold goods in the market

If the price charged is set above the equilibrium price, again, supply and demand are not equal. In Figure 7.7, if the price is set higher, say at £80, the quantity demanded is only 3 million units while the quantity supplied is 8 million units. This time there is **excess supply**. This means that goods would remain unsold. In this case, the quantity of goods that would be unsold in the market if the price were set at £80 is 5 million units (8 million – 3 million).



▲ Figure 7.7 Excess demand and excess supply

REMOVING EXCESS SUPPLY AND EXCESS DEMAND

If there is disequilibrium in a market, producers can restore equilibrium by changing the price or adjusting supply. For example, if there is excess demand in the market, producers could raise the price. In Figure 7.7, excess demand existed when the price was £40. If producers raised the price to £60, the market would clear since both the quantity supplied and the quantity demanded would be 6 million units. Alternatively, producers could employ more resources and increase supply to 9 million units. If this action were taken, equilibrium would be restored at a price of £40.

If there is excess supply in the market, producers could lower their prices. In Figure 7.7, excess supply existed when the price was £80. At this price, producers wanted to sell 8 million units but consumers only wanted to buy 3 million units. If producers lowered their prices to £60, the excess supply would be removed since both the quantity supplied and the quantity demanded would be 6 million units at this price. Alternatively, producers could store the excess supply and release it onto the market at a later date. However, this might not be practical because storing goods costs money and some stocks, such as fresh food, need to be consumed quickly.

DID YOU KNOW?

The private taxi firm, Uber, uses something called 'surge pricing' to deal with excess demand. During very busy periods, such as New Year's Eve or at the end of a major event when thousands of people are looking for a cab home, the fares charged by Uber drivers can rise very sharply: perhaps by two or three times or even more. The purpose of this is to remove excess demand. The higher prices discourage some consumers from ordering a taxi, so demand falls. However, the higher fares also act as an incentive for dormant drivers (those who have gone home perhaps) to get back on the road, so supply increases. When the supply and demand for taxis is more evenly matched, the fares charged are restored to 'normal' levels.

MULTIPLE-CHOICE QUESTIONS

- 1 Which of the following statements is true if the price is set below the equilibrium price in a market?
- A Supply and demand will be equal
 - B There will be excess supply in the market
 - C There will be excess demand in the market
 - D Supply will be greater than demand in the market
- 2 If demand for a product falls and the supply increases which of the following will happen?
- A Price will rise
 - B Price will fall
 - C Total revenue will rise
 - D There will be excess supply

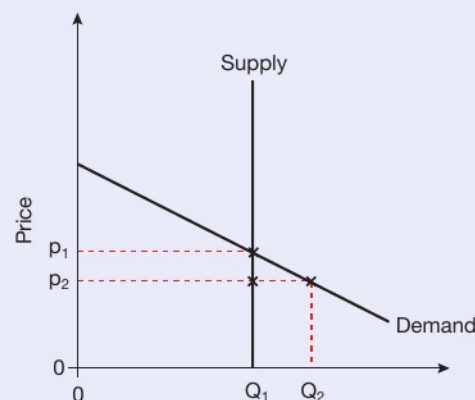
ECONOMICS IN PRACTICE

DID YOU KNOW?

The 'black market' is an illegal market. The black market for FA Cup Final tickets means that 'touts' (illegal traders) sell tickets above their face value.

CASE STUDY: THE MARKET FOR FA CUP FINAL TICKETS AT WEMBLEY

Every year, the FA Cup Final is played at Wembley Stadium, London, the UK. Unfortunately, there are never enough tickets for all the supporters who would like to go. There is always a shortage. The English Football Association is aware of this but says it would prefer to keep the tickets 'reasonably priced' so that genuine football supporters can afford to go to the match, rather than only the wealthy or those using corporate hospitality. Evidence of ticket shortages is presented by the price of tickets on 'unofficial markets'. For example, sellers on the Edinburgh-based website FootballTicketPad were charging supporters up to £21 230 for a pair of £120 category 1 tickets, including a £1930 booking fee. This was for the final between Arsenal and Aston Villa in 2015. Figure 7.8 illustrates what is happening in the market. Note that the supply curve is vertical because supply is fixed: the capacity of Wembley Stadium is 90 000.



▲ Figure 7.8 Market for FA Cup Final tickets at Wembley Stadium



▲ Aston Villa supporters at Wembley Stadium for the 2015 FA Cup Final

CHAPTER QUESTIONS

- 1 What is the equilibrium price of an FA Cup Final ticket according to the diagram in Figure 7.8?
- 2 Assuming that the FA charges p_2 for tickets, discuss why it does not charge the equilibrium price.
- 3 If the average price of a ticket were £60, what would be the value of total revenue?
- 4 If the FA could double the capacity of Wembley Stadium, what might be the effect on ticket prices?
- 5 To what extent is there excess demand in this market?

8 PRICE ELASTICITY OF DEMAND

LEARNING OBJECTIVES

- Understand how to define and calculate price elasticity of demand (PED)
- Understand how to use diagrams to show price elastic and price inelastic demand
- Understand how to interpret numerical values for PED
- Understand the factors that influence PED
- Understand the relationship between PED and total revenue following price changes

GETTING STARTED

Chapter 3 explained that a price change will result in a movement along the demand curve. For example, if a price falls, there will be an increase in the quantity demanded. However, price changes can bring about different responses in the quantity demanded. The demand for some goods changes more than others when prices change. Look at the examples below.

CASE STUDY: ELECTRICITY

In August 2016, the Patel family received their electricity bill for the previous 3 months. It had increased by 13 per cent to US\$164. The reason for the increase was a price rise by the supplier, not because they used more electricity. Mr Patel mentioned the 'bill' to the rest of the family and suggested that everyone should try to 'economise' when using electrical appliances. Everyone agreed, but Mr Patel knew that asking his family to reduce their electricity use was probably not going to make much difference to the size of the next bill. Indeed, when the next bill arrived in November, he was proved right. The bill had gone down but only slightly to US\$159.



▲ An electricity bill

CASE STUDY: CHINESE TAKE AWAY

Bob and Anne Jones enjoy Chinese food very much. Every Saturday night, they order a large Chinese meal from the China Garden, their regular supplier. However, one day in September 2016, they received a leaflet advertising a new take away service by China Dragon. It was offering a 20 per cent discount on take away orders. Bob said it was an attractive offer and suggested that they try the new supplier that coming weekend. Anne agreed saying that 'The food can't be that different can it?' When the food arrived, Anne was proved right and they saved over US\$10.



▲ A Chinese meal

- 1 What happened to the Patel's demand for electricity after the 13 per cent price increase?
- 2 Describe one possible reason for your answer to (1).
- 3 Do you think demand for Chinese take away food is sensitive to price changes?

WHAT IS PRICE ELASTICITY OF DEMAND?

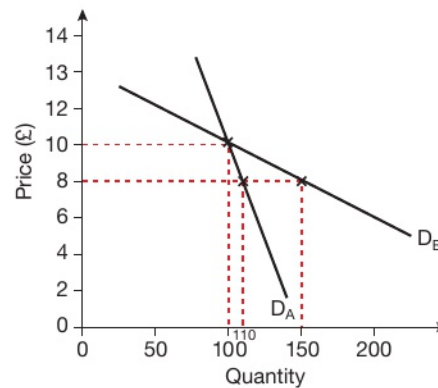
GENERAL VOCABULARY

responsive reactive

SUBJECT VOCABULARY

price elasticity of demand the responsiveness of demand to a change in price

For some goods, a price change will result in a large change in the quantity demanded and for others a smaller change. It all depends on the type of good. Figure 8.1 helps to illustrate this. Two demand curves are shown with different slopes representing two different products: A and B. The demand curve for product A is steep and the demand curve for product B is flatter. At a price of £10, the quantity demanded for both products is 100 units. However, when the price falls to £8, the quantity demanded increases by different amounts for each product. Demand for product A only increases slightly to 110 units. But for product B, demand increases a lot more, to 150 units. Demand for product B is more **responsive** to the price change. This relationship that exists between the responsiveness of demand to a change in price is called **price elasticity of demand**.



▲ Figure 8.1 Effect of a price change on the demand for two different products: A and B

PRICE INELASTIC DEMAND

SUBJECT VOCABULARY

inelastic demand change in price results in a proportionately smaller change in the quantity demanded (alternative term: price inelastic)

In Figure 8.1, for product A, the price change resulted in a small change in demand. The change in demand was not as big as the change in price. The price fell by 20 per cent but demand only increased by 10 per cent (from 100 units to 110 units). When this happens, economists say that the good has **inelastic demand** or that demand is price inelastic. A minority of goods have inelastic demand. Electricity is one, used in 'Getting started' above.

PRICE ELASTIC DEMAND

SUBJECT VOCABULARY

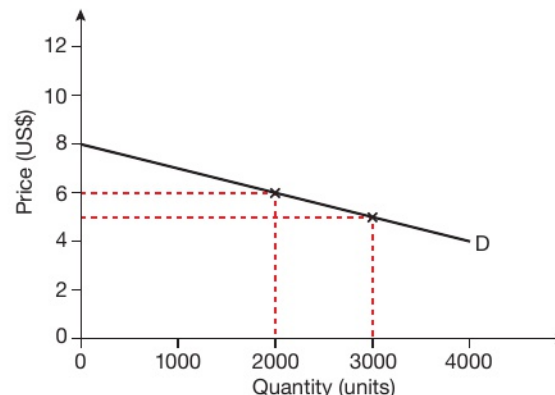
elastic demand change in price results in a greater change in the quantity demanded (alternative term: price elastic)

In Figure 8.1, for product B, the price change resulted in a *significant* change in the quantity demanded. This means the change in demand was greater than the change in price. The price fell by 20 per cent (from £10 to £8) while the quantity demanded increased by 50 per cent (from 100 units to 150 units). When this happens, economists say that the good has **elastic demand** or that demand is price elastic. Goods with elastic demand are more *responsive* to price changes.

ACTIVITY 1

CASE STUDY: ELASTIC DEMAND

Figure 8.2 shows a demand curve for a product. The price currently charged is US\$5. At this price, 3000 units are purchased.



▲ Figure 8.2 Demand curve for a product

- 1 If the price increases from US\$5 to US\$6, what happens to the amount demanded?
- 2 What is meant by elastic demand? Use this case as an example in your explanation.

CALCULATING PRICE ELASTICITY OF DEMAND

It is possible to calculate the price elasticity of demand (PED) of a good using the formula shown below.

$$\text{Price elasticity of demand} = \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in price}}$$

For product A in Figure 8.1 when price falls from £10 to £8, the PED would be:

$$= \frac{10\%}{-20\%} = -0.5$$

For product B in Figure 8.1, when the price falls from £10 to £8, the PED would be:

$$= \frac{50\%}{-20\%} = -2.5$$

There is a minus number in the calculation because the price fell by 20 per cent (from £10 to £8). Since the price change was negative, a minus sign must be shown. Whenever price or quantity demanded falls in the calculation, it is proper, and may be helpful, to show the minus sign.

GENERAL VOCABULARY

fraction part of a whole number in mathematics, such as $\frac{1}{2}$ or $\frac{3}{4}$.

decimal fraction (= a number less than 1) that is shown as a full stop followed by the number of tenths, hundredths etc. – the numbers 0.5, 0.175 and 0.661 are decimals

infinity abstract concept describing something without any bound or larger than any number

INTERPRETING THE NUMERICAL VALUE OF ELASTICITY

SUBJECT VOCABULARY

perfectly elastic demand where $PED = \infty$ (an increase in price will result in zero demand)

perfectly inelastic demand where $PED = 0$ (a change in price will result in no change in the quantity demanded)

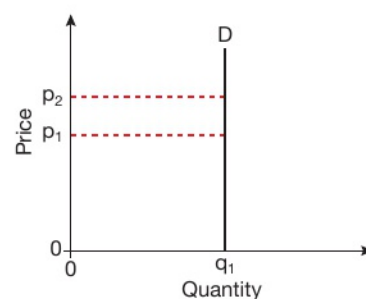
unitary elasticity where $PED = -1$ (the responsiveness of demand is proportionately equal to the change in price)

The values calculated above show whether demand is price elastic or price inelastic.

- If the value of PED is less than 1 (that is, a **fraction** or a **decimal**), demand is said to be inelastic. Demand for product A in Figure 8.1 is price inelastic because price elasticity is -0.5 .
- If the value of PED is greater than 1, demand is said to be elastic. Demand for product B in Figure 8.1 is price elastic because price elasticity is -2.5 .
- If the value of PED is zero, demand is said to be **perfectly inelastic**.
- If PED is equal to **infinity** (∞), demand is said to be **perfectly elastic**.
- If PED is exactly -1 , demand is said to have **unitary elasticity**.

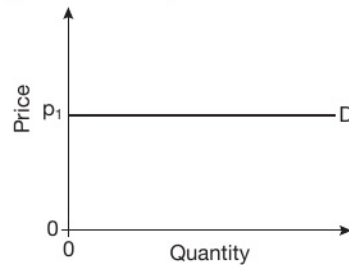
PRICE ELASTICITY AND THE SLOPE OF THE DEMAND CURVE

The demand curves for the two products in Figure 8.1 have different slopes. For product A, the demand curve is steep. This is common for goods that have inelastic demand like product A. For product B, the demand curve is much flatter. Goods that have elastic demand, like product B, tend to have relatively flatter demand curves. There are also some *special cases where PED is either 0, infinite or equal to -1* . These are shown and explained briefly below.



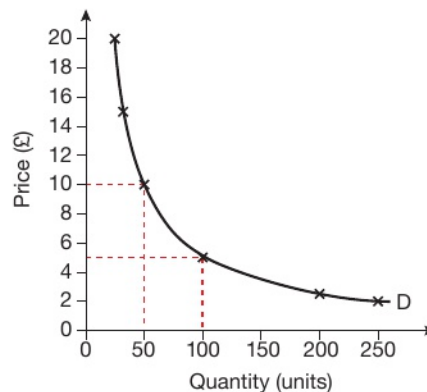
▲ Figure 8.3 Perfectly inelastic demand where $PED = 0$

The vertical demand curve in Figure 8.3 shows the demand curve for a good that has perfectly inelastic demand. This means that a price change will not affect the quantity demanded. For example, if the price increases from p_1 to p_2 , there is no change in the quantity demanded, it remains at q_1 . The value of price elasticity in this case is zero.



▲ Figure 8.4 Perfectly elastic demand where $PED = \infty$

The horizontal demand curve in Figure 8.4 shows a demand curve for a good that has perfectly elastic demand. This means that buyers purchase as much as they possibly can at price p_1 . However, if the price rises above p_1 , the quantity demanded will fall to zero. The value of price elasticity in this case is infinite.



▲ Figure 8.5 Demand curve with unitary elasticity

The demand curve in Figure 8.5 shows the shape of a demand curve where $PED = -1$. This is a special case in economics and when there is a price change the effect on total revenue is unique. The demand curve for a product that has unitary elasticity is called a rectangular hyperbola (a mathematical term). When the price is £10, the quantity demanded is 50 units and total revenue is £500 (£10 × 50). Alternatively, when the price is £5, the quantity demanded is 100 units and total revenue is still £500 (5 × 100). When demand has unitary elasticity the total revenue will be exactly the same at every price. Therefore, a price change will result in no change in total revenue. The relationship between PED and total revenue following a price change is discussed in detail below.

In Figure 8.1 the demand curve labeled D_A shows a relatively inelastic demand curve. In contrast, the demand curve D_B is a relatively elastic.

ACTIVITY 2

CASE STUDY: THE HEPTON TENNIS CLUB

The Hepton Tennis Club appeared likely to close in 2015 due to a decline in membership. After an emergency committee meeting in January 2016, it was decided to slash the membership fees from US\$500 p.a. to US\$300 p.a. for 2016. As a result, membership grew from 400 to 600.



▲ Hepton Tennis Club

- 1 Calculate the PED for Hepton Tennis Club membership.
- 2 What evidence is there in the case to suggest that demand is elastic in this example?

FACTORS AFFECTING PRICE ELASTICITY OF DEMAND

The value of PED for a good depends on a number of factors.

AVAILABILITY OF SUBSTITUTES

Goods that have lots of close substitutes will tend to have elastic demand. This is because consumers can switch easily from one product to another. For example, if the price of strawberry jam rises, consumers can switch to other types of jam such as raspberry, blackcurrant, plum, apricot or loganberry. Consequently, the demand for strawberry jam is likely to be elastic. In contrast, if there are few or no real substitutes for a product, demand will be inelastic.

DEGREE OF NECESSITY

Goods considered 'essential' by consumers will have inelastic demand. This is because if the prices of essentials, such as food and fuel rise, consumers cannot reduce the amounts they purchase significantly – they are necessities. In contrast, goods that are not essential – for example, luxury products, such as boats, sports cars and holidays – will have more elastic demand. If a product is habit forming, it may become a necessity and therefore it will have inelastic demand.

PROPORTION OF INCOME SPENT ON A PRODUCT

It may be argued that if consumers spend a large proportion of their income on a product, demand will be more elastic. For example, most consumers buying a flat screen television for £400 will be using up a significant proportion of their monthly income. Such items are one-off or infrequent purchases and so consumers may be prepared to wait a few months to see if the price drops.

Consequently, price changes in such high value items result in significant changes in the quantity demanded. In contrast, demand for products that cost very little in relation to income – for example, stamps or pencils – are more price inelastic. Often these lower price items are more of a necessity, a consumer cannot post a letter without buying a stamp.

TIME

In the short term, goods have inelastic demand because it can often take time for consumers to find substitutes when the price rises, for example. In the long term, demand is more elastic because consumers can search for alternatives and are more prepared to switch.

THE RELATIONSHIP BETWEEN PED AND TOTAL REVENUE

When there is a price change, there will be a change in the quantity demanded and therefore a change in total revenue. The value of price elasticity shows whether revenue will rise or fall following a price change. Consider the example shown in Figure 8.1. The demand for product A is price inelastic and the demand for product B is price elastic.

At the price of £10, the quantity demanded for both products is 100 units. However, when the price falls, the quantity demanded for product A rises to 110 units while the quantity demanded for B rises to 150 units. The different effects on total revenue for each product are outlined below.

For product A, when the price falls from £10 to £8 there is an increase in the quantity demanded from 100 units to 110 units. This means that total revenue will change. This is shown by the following calculations.

When P = £10 $TR = £10 \times 100 = £1000$

When P = £8 $TR = £8 \times 110 = £880$

The price reduction from £10 to £8 has resulted in a £120 fall in total revenue (£1000 – £880). This shows that when demand is inelastic, a price cut will cause total revenue to fall. The opposite will happen if the price is increased. If demand is inelastic, a price increase will cause total revenue to rise.

For product B, when the price falls from £10 to £8, the quantity demanded rises from 100 units to 150 units. The effect on total revenue is calculated below.

When P = £10 $TR = £10 \times 100 = £1000$

When P = £8 $TR = £8 \times 150 = £1200$

This time, for product B, the price reduction has resulted in a £200 increase in revenue from £1000 to £1200. This shows that when demand is elastic, a price cut will result in an increase in total revenue. The opposite will happen if the price is increased. If demand is elastic, a price increase will cause total revenue to fall. The effect of price changes on total revenue for different price elasticities is summarised in Table 8.1.

PRICE ELASTICITY	VALUE OF ELASTICITY	PRICE CHANGE	EFFECT ON TR
Inelastic	< 1	Decrease	Fall
Inelastic	< 1	Increase	Rise
Elastic	> 1	Decrease	Rise
Elastic	> 1	Increase	Fall

▲ Table 8.1 The effect of price changes on total revenue when demand is elastic and inelastic

Finally, the importance of elasticity to businesses and the government is discussed in more detail at the end of Chapter 10 (pages 63–69).

MULTIPLE-CHOICE QUESTIONS

- 1 What is the PED for a perfectly inelastic demand curve?
- A -1
 - B 0
 - C -0.1
 - D Infinity
- 2 If the value of PED for a product is -0.87 , an increase in price will result in which of the following?
- A An increase in demand for that product
 - B A decrease in demand for a substitute product
 - C A rise in total revenue
 - D A fall in total revenue

ECONOMICS IN PRACTICE

CASE STUDY: NG CHOCOLATES

The market for chocolate in China has seen some significant growth in recent years. Hershey, the US confectionery company, said that Chinese chocolate sales in 2014 were worth US\$2700 million and were expected to grow to US\$4300 million by 2019. This represents a growth of about 60 per cent. However, it is reckoned that European suppliers dominate 70 per cent of China's chocolate market. Chinese brands have struggled to make a big impact in the market. This is because many Chinese consumers have worries about the safety of some Chinese food products. However, one small producer, Ng Chocolates, is determined to benefit from growth in the market.



▲ Handmade chocolates

Ng Chocolates produces handmade chocolates that are sold in decorative boxes to retailers in Shanghai. Ng currently charges retailers CNY 20 per box and in 2015 sold 12 000 boxes. However, many of their customers reckoned that if Ng reduced the price to CNY 16, demand would probably rise significantly. Ng carried out some research and estimated that demand would rise to 16 000 boxes p.a. if they lowered the price to CNY 16.

CHAPTER QUESTIONS

- 1 Describe what PED is.
- 2 Calculate the PED for Ng Chocolates and state whether demand for Ng Chocolates is elastic or inelastic.
- 3 Calculate the change in total revenue for Ng Chocolates if Ng lowers the price to CNY 16.
- 4 Should Ng lower the price of their chocolates to CNY 16? Explain your answer.
- 5 Discuss the main factor in this case that influences the value of PED.

9 PRICE ELASTICITY OF SUPPLY

LEARNING OBJECTIVES

- Understand how to define and calculate price elasticity of supply (PES)
- Understand how to use diagrams to show price elastic and price inelastic supply
- Understand how to interpret numerical values for PES
- Understand the factors that influence PES
- Understand how the PES for manufactured and primary products are likely to be different

GETTING STARTED

Chapter 8 showed that after a price change, the change in quantity demanded will vary in quantity depending on the type of good. The same can also be said of supply. When the price rises, for example, the quantity supplied will increase sharply for some goods but hardly at all for others.

CASE STUDY: HOUSING

Many countries around the world have housing shortages. Growing populations may cause housing shortages, particularly in areas where immigration is high (internally from rural areas and externally from other countries). However, it is not just rising demand that causes problems. The supply of new houses is often slow to increase, particularly affordable houses. For example, in the UK the National Housing Federation estimated 974 000 homes were needed between 2011 and 2014. However, information provided by 326 regional councils showed that only 457 490 were built. One report suggested that there were ten buyers for every house on the market in parts of the UK. One of the problems with the supply of new houses is that houses take several months to construct. Finding suitable land and obtaining planning permission for house building can take significantly longer and cause long delays in the UK. The average house price rose from £154 452 in March 2009 to £218 255 in January 2017.



▲ Construction of new houses can be slow

SUBJECT VOCABULARY

fast-moving consumer good (FMCG)
goods, especially food, that sell very quickly and in large amounts

CASE STUDY: POTATO CRISPS

Potato crisps are a **fast-moving consumer good (FMCG)**. They are marketed in many countries in the world and produced in huge quantities. For example, Lays, one of the biggest crisp manufacturers worldwide, produces and sells millions of packets every year. They are mass produced in a number of factories around the world.



▲ Potato crisps, a FMCG

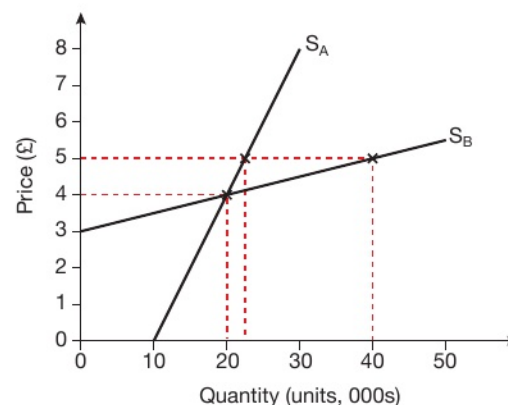
- 1 Why is the supply of houses slow to increase in the UK?
- 2 Describe the problems caused by a lack of supply in the UK housing market.
- 3 Do you think potato crisp producers could increase output at short notice? Explain your answer.
- 4 How would holding large stocks of potato crisps affect producers' ability to increase supply at short notice?

WHAT IS PRICE ELASTICITY OF SUPPLY?

SUBJECT VOCABULARY

price elasticity of supply
responsiveness of supply to a change in price

When the price of a good changes, the amount supplied will also change. However, the size of the change in supply is not likely to be the same for all products. For example, Figure 9.1 shows the supply curves for two different products: A and B. At a price of £4 the quantity supplied for both products is 20 000 units. When the price increases by 25 per cent to £5, the quantity of product A supplied rises by 12.5 per cent from 20 000 units to 22 500 units. The percentage increase in quantity supplied is not as great as the percentage increase in price. However, for product B, the 25 per cent price increase results in a 100 per cent increase in the quantity supplied, from 20 000 units to 40 000 units. The supply of product B is much more responsive to the price increase than product A. This relationship between the responsiveness of supply and a change in price is called **price elasticity of supply (PES)**.



▲ Figure 9.1 Effect of a price change in the supply of two different products: A and B

INELASTIC SUPPLY

SUBJECT VOCABULARY

inelastic supply change in price results in a proportionately smaller change in the quantity supplied (alternative term: price inelastic)

In Figure 9.1, for product A, the change in price resulted in a smaller percentage change in quantity supplied. The 25 per cent price increase resulted in a smaller percentage increase in the quantity supplied of just 12.5 per cent. When this happens, economists say that product A has **inelastic supply**. The supply of houses in 'Getting started' is very price inelastic. Also, many agricultural goods have price inelastic supply because farmers cannot increase supply at short notice. It takes time to grow farm produce.

ELASTIC SUPPLY

SUBJECT VOCABULARY

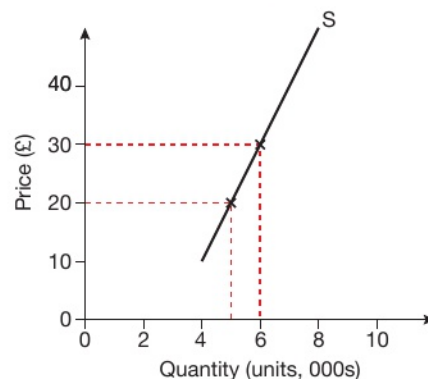
elastic supply change in price results in a proportionately greater change in the quantity supplied (alternative term: price elastic)

In Figure 9.1, for product B, the change in price resulted in a larger percentage change in quantity supplied. The 25 per cent price increase resulted in a 100 per cent increase in quantity supplied. When this happens, economists say that product B has **elastic supply**. Provided firms have spare capacity, the supply of many manufactured goods, like crisps in 'Getting started', tends to be elastic.

ACTIVITY 1

CASE STUDY: INELASTIC SUPPLY

Figure 9.2 shows the supply curve for a product. The current price is £20 and the amount supplied is 5000 units.



▲ Figure 9.2 Supply curve of a product

- 1 What happens to the quantity supplied when the price increases from £20 to £30?
- 2 What is meant by inelastic supply? Use this case as an example in your explanation.

CALCULATING THE VALUE OF PRICE ELASTICITY OF SUPPLY

Like price elasticity of demand, PES can be presented numerically. The formula for calculating PES is given below.

$$\text{Price elasticity of supply} = \frac{\text{Percentage change in quantity supplied}}{\text{Percentage change in price}}$$

For product A in Figure 9.1 PES would be:

$$= \frac{12.5\%}{25\%} = 0.5$$

For product B in Figure 9.1 PES would be:

$$= \frac{100\%}{25\%} = 4$$

INTERPRETING THE VALUE OF PRICE ELASTICITY OF SUPPLY

SUBJECT VOCABULARY

perfectly elastic (supply) where $PES = \infty$. (producers will supply an infinite amount at the given price)

perfectly inelastic (supply) where $PES = 0$ (the quantity supplied is fixed and cannot be adjusted whatever the price)

unitary elasticity (with regard to supply) where $PES = 1$ (a change in price will be matched by an identical change in the quantity supplied)

The values calculated above show whether supply is price elastic or price inelastic.

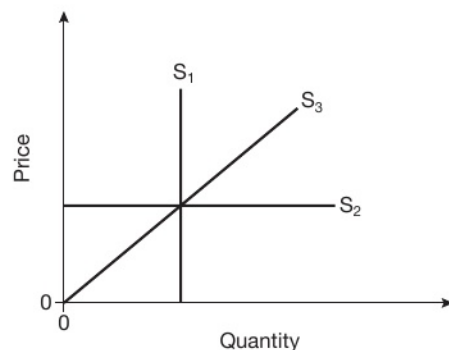
- If the value of PES is less than 1 (that is, a fraction or a decimal), supply is said to be *inelastic*. Product A in Figure 9.1 has inelastic supply because price elasticity is 0.5.
- If the value of PES is greater than 1, supply is said to be *elastic*. The supply of product B in Figure 9.1 is price elastic because price elasticity is 4.
- If $PES = 0$, supply is said to be **perfectly inelastic**.
- If $PES = \infty$, supply is **perfectly elastic**.
- If $PES = 1$, supply has **unitary elasticity**.

PRICE ELASTICITY AND THE SLOPE OF THE SUPPLY CURVE

The supply curves in Figure 9.1 have different slopes. For product A, the slope is steep and, generally, this shows that supply is price inelastic. In contrast, the supply curve for product B is flatter. This generally shows that supply is price elastic. However, whether or not supply is elastic or inelastic really depends on whether the supply curve cuts the price axis or the quantity axis. Straight-line supply curves that cut the price axis are elastic and those that cut the quantity axis are inelastic.

There are also some *special cases*. They are shown Figure 9.3.

- A perfectly inelastic supply curve, S_1 in Figure 9.3, is vertical. This means that a price change will not affect the quantity supplied at all. The quantity supplied is fixed and the value of PES in this case is zero. An example of fixed supply was shown in Chapter 5. Here the supply of tickets to a tennis match was fixed at 15 000 because the capacity of the stadium was fixed.
- A perfectly elastic supply curve, S_2 in Figure 9.3, is horizontal. This means that producers are prepared to supply any amount at a given price. The value of price elasticity in this case is infinite.
- Any straight-line supply curve that passes through the origin, S_3 in Figure 9.3, has a price elasticity equal to 1. This means that the percentage change in price is always the same as the percentage change in the quantity supplied.



▲ Figure 9.3 Supply curves – special cases

In Figure 9.1 the supply curve labeled S_A shows a relatively inelastic supply curve. In contrast, the supply curve S_B is relatively elastic.

ACTIVITY 2

CASE STUDY: AMPAT HOLDINGS

Ampat Holdings manufactures a range of replica sports shirts. They are produced in a large factory in Chittagong, Bangladesh. The shirts are sold to retailers and **wholesalers** all over the sub-continent. In 2016, the price of these shirts fell from BDT 800 to BDT 640. As a result, Ampat Holdings reduced supply from 1.6 million to 1.2 million shirts.



▲ Replica sports shirts are very big business in many parts of the world

- 1 Calculate the PES for the replica shirts in this case.
- 2 What is meant by elastic supply? Use this case as an example in your explanation.

SUBJECT VOCABULARY

wholesalers person or company that sells goods in large quantities to businesses, rather than to the general public

FACTORS INFLUENCING PES

The supply of some goods is not very responsive to price changes, whereas the supply of others is. Generally, PES is influenced by whether producers can increase supply easily, or not. If producers can increase the quantity supplied easily, supply will tend to be elastic. However, if there are barriers that prevent producers from increasing the quantity supplied, then supply will be more inelastic.

FACTORS OF PRODUCTION

If producers have easy access to the factors of production such as labour, **raw materials**, energy, tools and machinery, they will be able to boost production if necessary. This means that supply will be elastic. For example, if there is an increase in the price of training shoes, producers should be able to boost production and increase the quantity supplied fairly easily. This is because there is no reason why the resources needed to produce training shoes should not be available. Consequently, the supply of training shoes should be elastic.

Supply will also be more elastic if production factors are mobile. If production factors such as labour and materials can be switched to other uses easily, supply will be elastic. However, if specialised resources are needed for production, such as skilled labour, such resources are less mobile (it may take time to train workers in new skills) and supply will be more inelastic.

AVAILABILITY OF STOCKS

Producers that can hold stocks of goods can respond quickly to price changes so supply will be elastic. However, where it is impossible or expensive to hold stocks, supply will be inelastic. The supply of some perishable goods, such as fruit and vegetables, will be inelastic because they cannot be stored for very long.

SUBJECT VOCABULARY

raw materials substances used to make a product

SPARE CAPACITY

Supply will be more elastic if producers have spare capacity. With spare capacity, producers have the ability to produce more with their resources. In contrast, if firms are running at full capacity supply will be inelastic. This is because output cannot be increased at short notice. Given more time, though, even firms running at full capacity can increase supply. This is because they can build a bigger factory or buy more machinery, for example.

TIME

The speed with which producers can react to price changes in the market can affect PES. Generally, all producers can adjust output if they are given time. As a result, the more time producers have to react to price changes, the more elastic supply will be. Where it is not possible to increase supply quickly, due to production limitations, supply will be inelastic. For example, it will take nearly a year to increase the supply of many agricultural products in many countries because growing seasons are so long. This is discussed in more detail below.

PES FOR MANUFACTURED AND PRIMARY PRODUCTS

A number of factors can influence the speed at which producers can react. Goods that can be produced quickly are likely to have elastic supply. Modern manufacturers can be quite flexible and can adjust production levels at short notice. For example, a car engine manufacturer could increase production quickly by stepping up the rate of output in the factory. This might involve asking employees to work overtime and keeping the factory open for longer. More raw materials and components will be required but this should not be a problem. Whereas, the producers of many primary products, such as agricultural goods, are not able to react quickly to price changes. For example, a strawberry producer cannot increase supply until more strawberries can be grown. This might not be possible until next year. As a result supply is inelastic.

The supply of other primary goods, such as gold and diamonds, is likely to be inelastic. This is because there are few sources around the world. The production of such goods is also expensive and time consuming. As a result, supply is not very responsive to price changes. It is likely to be very inelastic.

MULTIPLE-CHOICE QUESTIONS

- ▶ 1 What is the value of price elasticity of supply for a straight-line supply curve that passes through the origin?
 - A 1
 - B -1
 - C 0
 - D Infinite
- ▶ 2 The price of a product rises by 12 per cent. As a result, producers increase the amount supplied by 18 per cent. What is PES?
 - A 12
 - B 0
 - C 1.5
 - D 0.67

ECONOMICS IN PRACTICE

CASE STUDY: THE GLOBAL SUPPLY OF COCONUTS

There has been a sharp increase in the global demand for coconuts (and products made from coconuts) in recent years. For example, in supermarkets, coconut milk is being sold with ring pull opening devices that allow it to be drunk like a soft drink. Also, reports have suggested that coconut sugar is a much healthier alternative to traditional sugar and celebrities have been observed consuming coconut products. For example, actress Gwyneth Paltrow claimed that she uses coconut oil as a mouthwash for oral health and whitening her teeth. The rising demand has resulted in higher prices for coconuts. Figure 9.4 shows the price of coconut oil between 2015 and 2016.

Unfortunately, suppliers have not been able to react to the rising prices by increasing the quantity supplied. Globally, the supply of coconuts is falling. One reason for this is linked to the age of the industry. Most coconut trees are grown in India and Southeast Asia and their trees are simply past their best. Today's coconut trees were planted more than 50 years ago, according to Hiroyuki Konoma, a representative for a United Nations Food and Agriculture Organization. That puts them more than 20 years past their peak production time. Also, the Philippines is still recovering from the damage caused by typhoon Haiyan, which wiped out about 15 per cent of its trees in 2013. It will take at least another year for new trees to bear fruit. Finally, Indonesia, the world's top producer of coconuts, has failed to replace old low-yielding coconut trees. This means that estates are less productive. The government is also encouraging more production of corn and soya. It is reckoned that production growth is currently 8 per cent behind demand growth.



▲ Figure 9.4 Price of coconut oil, September 2015–September 2016



▲ Many of the world's coconut trees are past their best

CHAPTER QUESTIONS

- 1 Describe what price elasticity of supply is.
- 2 Why is the supply of coconuts likely to be inelastic?
- 3 Describe why the price of coconuts has risen sharply recently.
- 4 How might the ability to store coconuts for long periods of time affect PES?

10 INCOME ELASTICITY

LEARNING OBJECTIVES

- Understand how to define and calculate income elasticity of demand
- Understand how to interpret numerical values of income elasticity of demand
- Understand the significance of price and income elasticities of demand to businesses and the government with regard to the imposition of taxes and subsidies and changes in income

GETTING STARTED

After price, income is one of the most important factors that can affect the demand for products. For most products, a change in income will result in a change in the quantity demanded. However, the change in demand may vary according to the nature of the product.

CASE STUDY: NEW CARS

In September 2016, Marion Wright was promoted at the market research agency for which she worked. The promotion came with an attractive increase in salary. It rose from £49 000 to £63 000 p.a. As a result, she planned to pay off some debt and buy a new car. She bought a new VW Golf GTI.



▲ VW Golf GTI

CASE STUDY: MILK

The Spencer family consumes 9 litres of milk per week. In 2016, Charlie Spencer was made redundant from his £65 000 p.a. sales job at an insurance company. Charlie quickly found employment as a driving instructor but only earned £31 000 p.a. However, the family's consumption of milk remained much the same at around 9 litres per week.

- 1 Which is most responsive to changes in income: demand for cars or demand for milk?
- 2 What reason can you give for your answer to (1)?
- 3 In pairs, draw up a list of products that might respond in the same way as the demand for new cars to changes in income. Present your findings to the rest of the class outlining the reasons for your choice.

WHAT IS INCOME ELASTICITY OF DEMAND?

SUBJECT VOCABULARY

income elasticity of demand

responsiveness of demand to a change in income

Income elasticity of demand measures the responsiveness of demand to a change in income. Consider two products: A and B. If incomes rise by 10 per cent and the quantity demanded for product A rises by 25 per cent, demand for product A is very responsive to the change in income. Economists would say that demand for product A is income elastic. In contrast, if the quantity demanded for product B only rose by 5 per cent, economists would say that demand for product B is income inelastic. This is because the percentage increase in quantity demanded is less than the percentage increase in income.

CALCULATING INCOME ELASTICITY OF DEMAND

It is possible to calculate the income elasticity of demand for a good using the formula below:

$$\text{Income elasticity of demand} = \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in income}}$$

For product A in the example above, income elasticity of demand would be:

$$= \frac{25\%}{10\%} = 2.5$$

For product B in the example above, income elasticity of demand would be:

$$= \frac{5\%}{10\%} = 0.5$$

INTERPRETING THE VALUE OF INCOME ELASTICITY OF DEMAND

The values calculated above show whether demand is income elastic or income inelastic. They also show something about the nature of the goods in relation to how demand changes in response to changes in income.

NECESSITIES

Necessities are 'basic goods' that consumers need to buy. Examples include food in general, electricity and water. Demand for these types of goods will be income inelastic. Another example of a good that is income inelastic is petrol. If the value of income elasticity of demand is between +1 and -1, demand is said to be income inelastic. Demand for product B is income elastic because income elasticity is 0.5.

SUBJECT VOCABULARY

discretionary expenditure non-essential spending or spending that is not automatic

LUXURY GOODS

Luxuries are goods that consumers like to buy if they can afford them. Spending on these types of goods is called **discretionary expenditure** – this means that it is optional. Demand for these goods is income elastic. Examples include air travel, satellite television, designer clothing, and many goods and services in the leisure and tourism industry. It is also argued that the demand for imported goods is income elastic. If the value of income elasticity is greater than 1 or less than -1 , demand is said to be income elastic. Demand for product A is income elastic because income elasticity is 2.5.

NORMAL GOODS

The value of income elasticity can also show whether goods are normal or inferior (see Chapter 4, pages 23–28). For normal goods, where, for example, an increase in income results in an increase in the quantity demanded, the value of income elasticity will be positive. Products A and B above are both normal goods because income elasticity is positive in both cases.

INFERIOR GOODS

For inferior goods, where, for example, an increase in income results in a decrease in the quantity demanded, the value of income elasticity will be *negative*. This shows that the quantity demanded and income have an inverse relationship. Examples of inferior goods might include those bought at ‘Pound’ or ‘Dollar’ shops, where everything sold is either £1 or US\$1.

ACTIVITY 1

CASE STUDY: CALCULATING INCOME ELASTICITY OF DEMAND

In 2016, average incomes in a country rose from €30 000 to €32 400. This caused a change in the quantity demanded for two particular products: X and Y. Total annual quantity demanded for product X rose from 24 million units to 30 million units. However, the quantity demanded for product Y fell from 10 million units to 9 million units.

- 1 Calculate the income elasticity of demand for products X and Y.
- 2 Are the two products (X and Y) income elastic or income inelastic?
- 3 Are the two products X and Y normal or inferior? Give an explanation in your answer.

DID YOU KNOW?

As developing nations become better off, their demand for imports rises significantly.

PRICE ELASTICITY AND BUSINESSES

Price elasticity can provide useful information for businesses. For example, it can help firms predict the effect of a price change on total revenue. When a firm changes its price, there will be a change in the quantity demanded and therefore a change in total revenue. It would be useful for the firm to know what effect a particular price change might have on total revenue. The value of price elasticity can help here. Look at the example in the box.

EFFECT ON TOTAL REVENUE OF A PRICE INCREASE WHEN DEMAND IS INELASTIC

If a business has inelastic demand for one of its products, it knows that a price increase will increase revenue. For example, if price elasticity of demand (PED) = -0.8 and current demand is 2 million units, a 5% price increase from US\$20 to US\$21 will increase revenue. The following calculations prove this.

The change in demand is given by:

$$\text{PED} = \frac{\% \text{ change in demand}}{\% \text{ change in price}}$$

Therefore:

$$-0.8 = \frac{\% \text{ change in demand}}{5\%}$$

$$-0.8 \times 5\% = \% \text{ change in demand}$$

$$-4\% = \text{change in demand}$$

Therefore the new level of demand following the price increase will be:

$$= \text{Previous demand} - 4\%$$

$$= 2 \text{ million} - (4\% \times 2 \text{ million})$$

$$= 2 \text{ million} - 80\,000$$

$$= 1\,920\,000$$

The change in total revenue is given by:

$$\text{When price is US\$20 TR} = \text{US\$20} \times 2 \text{ million} = \text{US\$40 million}$$

$$\text{When price is US\$21 TR} = \text{US\$21} \times 1.92 \text{ million} = \text{US\$40.32 million}$$

Therefore the price increase has resulted in a rise in total revenue of US\$320 000.

The relationship between price elasticity and the effect of price changes on total revenue is fully summarised in Chapter 8 (pages 48–55).

To conclude, if firms know the value of price elasticity for their products, they can predict the effect on total revenue of any price changes they make. They will know, for example, that if demand for their product is elastic, a price reduction will increase total revenue. This might help to explain why many rail companies charge much-reduced prices for 'off-peak' rail travel. By lowering the price, more travellers are attracted and revenue rises. Demand during the 'off-peak' period must be price elastic.

INCOME ELASTICITY AND BUSINESSES

Many firms will be interested in income elasticity of demand. This is because changes in income in the economy may affect demand for their products. If firms know the income elasticity of demand for their products, they can respond to predicted changes in incomes.

Some manufacturers have flexible resources and can switch from the production of one good to another. For example, a manufacturer of plastic products may be able to switch from the production of plastic buckets to plastic toys. A predicted rise in incomes may encourage such a firm to make more plastic toys if demand for them was income elastic.

Also, firms that produce goods that are income elastic will expect changes in income to affect demand. So, if incomes are expected to rise in the future they can plan ahead, making sure they have enough capacity, for example. In contrast, if a recession were expected, such firms would plan to cut output. This is because incomes are likely to fall during a recession. In 2008, as a result of the global recession, car manufacturers started to cut their output. However, producers of inferior goods might start to build capacity if they believed a recession was coming. When incomes fall, the quantity demanded for inferior goods, such as those sold by low cost supermarkets, starts to rise.

PRICE ELASTICITY AND THE GOVERNMENT

SUBJECT VOCABULARY

excise duty government tax on certain goods, such as cigarettes, alcoholic drinks and petrol that are sold in the country

valued-added tax (VAT) tax on some goods and services – businesses pay value-added tax on most goods and services they buy and if they are VAT registered, charge value-added tax on the goods and services they sell

INDIRECT TAXES

Governments often raise revenue by imposing indirect taxes such as **value-added tax (VAT)** and **excise duty** on products. It is important for governments to select products that have inelastic demand. This is because consumers will avoid heavily taxed products if demand for them is elastic. Therefore, governments target goods that are either necessities or have few substitutes. However, most governments do not target goods, such as food and water, which are essential to human survival. Popular targets for governments when imposing taxes are cigarettes, alcohol and petrol. Demand for these products is very price inelastic. Look at the example in Activity 2.

SUBSIDIES

Governments might also consider PED when granting a subsidy to producers. The effect of a subsidy is to move the supply curve to the right (that is, to increase supply). If the subsidy is designed to help the poor by making the good cheaper, it is important that demand is price inelastic. If demand is not price inelastic, an increase in supply will only reduce the price slightly. This might explain why subsidies are often given to farmers. Since demand for many food products is inelastic, a subsidy to farmers will help to keep food prices lower.

ACTIVITY 2

CASE STUDY: PETROL TAX AND PED

One of the products chosen by many governments for indirect taxes is petrol. In December 2016, the average price of a litre of petrol in the UK was around £1.13. However, 57.95 pence of this is fuel duty that goes to the government. In addition, VAT is charged on petrol at 20 per cent. UK drivers pay some of the highest prices for petrol in the world due to taxation.



▲ Petrol filling station

- 1 How much fuel duty will the government collect from a driver who buys 50 litres of petrol per week?
- 2 If it costs a driver a total of £60 to fill up a car with petrol, how much of this is paid in VAT?
- 3 Comment on the amount of tax taken by the government from the sale of petrol.
- 4 Why do governments choose products like petrol to impose heavy duties on?

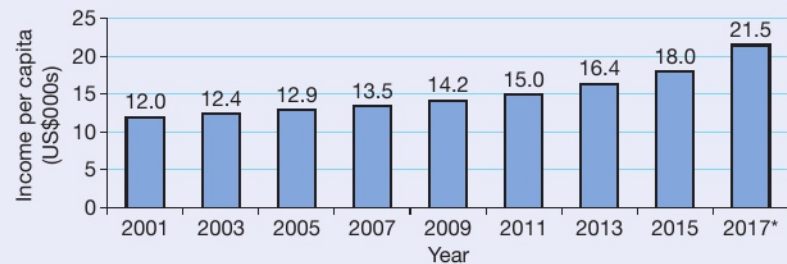
MULTIPLE-CHOICE QUESTIONS

- 1 Which of the following shows the income elasticity of demand for an inferior good?
- A -1.2
 - B 1.7
 - C 1.9
 - D 0.7
- 2 The PED for a product is -2.4. What will happen if the price of this product is increased by 10 per cent?
- A Demand will fall by 10 per cent
 - B Total revenue will rise
 - C Total revenue will fall
 - D Demand will rise by 24 per cent

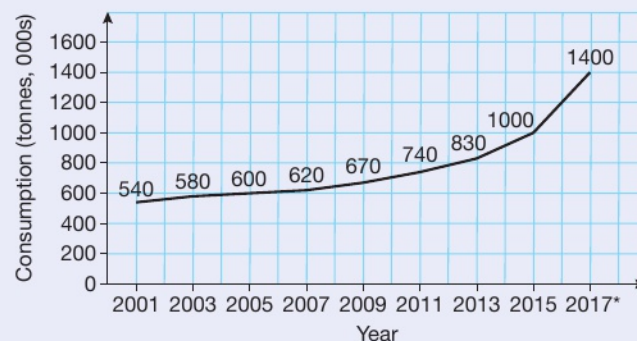
ECONOMICS IN PRACTICE

CASE STUDY: INCOME ELASTICITY FOR RED MEAT IN A DEVELOPING COUNTRY

The income per capita (per head) for a developing country between 2001 and 2017 is shown in Figure 10.1. The consumption of red meats, such as beef or lamb, in the same developing country between 2001 and 2017 is shown in Figure 10.2.



▲ Figure 10.1 Income per capita for a developing country



▲ Figure 10.2 Annual red meat consumption for a developing country *Prediction

CHAPTER QUESTIONS

- 1** Calculate the percentage change in average income between 2001 and 2015 for the developing country in Figure 10.1.
- 2** Calculate the percentage change in the quantity demanded for red meat between 2001 and 2015 for the developing country in Figure 10.2.
- 3** Calculate the income elasticity of demand for red meat in the developing country.
- 4** Is demand for red meat in the developing country income elastic or income inelastic?
- 5** What evidence is there to suggest that red meat in this developing country is a luxury good?
- 6** How might income elasticity be of use to businesses in this developing country? Give two reasons in your analysis.

11 THE MIXED ECONOMY

LEARNING OBJECTIVES

- Understand the difference between the public and private sectors
- Understand how the ownership, control and aims of private and public sector organisations differ
- Understand what is meant by a mixed economy and how the problems of what to produce, how to produce and for whom to produce are resolved
- Understand market failure and why government intervention may be needed
- Understand the role played by the private and public sectors in the production of goods and services including public goods
- Understand the relative importance of the public and private sectors in different economies

GETTING STARTED

Goods and services are produced to meet the needs and wants of consumers. However, the way in which different countries organise the choice, production and distribution of goods will vary. For example, in some countries most goods and services are produced by privately owned businesses. In others, the state might take more responsibility. In most countries it is common for both the state and private businesses to provide goods and services. Look at the two sets of images below.

CASE STUDY: PRIVATE AND PUBLIC GOODS



▲ Figure 11.1 Groceries and consumer durables



▲ Figure 11.2 Water and policing

- 1 Who provides the goods and services shown in Figures 11.1 and 11.2?
- 2 Why do you think there are two sets of providers? Explain your answer.
- 3 In groups, discuss who provides most of the goods and services in your country.

THE PUBLIC AND PRIVATE SECTORS

SUBJECT VOCABULARY

economy system that attempts to solve the basic economic problem
private sector provision of goods and services by businesses that are owned by individuals or groups of individuals
public sector government organisations that provide goods and services in the economy

An **economy** is a system that attempts to solve the basic economic problem: decision makers in an economy have to decide what to produce, how to produce and for whom to produce. In any economy, goods and services may be provided by the **public sector** or the **private sector**. In the private sector, individuals or groups of individuals are free to set up businesses and supply goods and services to anyone who wants to buy them. In the public sector, a range of organisations, such as government departments, public corporations and other agencies, provide services that are often supplied inefficiently by the private sector. Examples include health care, education and defence. Most public sector services are provided free by the state and are paid for from tax revenue or borrowing.

PRIVATE SECTOR ORGANISATIONS

GENERAL VOCABULARY

durables products that are intended to have a life of more than 3 years from when they are made or bought
groceries food and other goods that are sold by a grocer or a supermarket
professions careers that need a high level of education and training in order to work in them, traditionally including medicine, law, teaching

SUBJECT VOCABULARY

shareholders people or organisations that owns shares in a company

OWNERSHIP AND CONTROL

Goods and services in this sector are provided by businesses that are owned and controlled by individuals or groups of individuals. In many countries, most consumer goods, such as **groceries** and consumer **durables** like those shown in 'Getting started', are provided by the private sector. Private sector enterprises can vary in size and type of ownership. They may be:

- **sole traders**: where the business is owned and controlled by one person (these are often retailers, and tradesmen such as plumbers, electricians or taxi drivers)
- **partnerships**: where the business is owned and controlled by two or more people working together. They are often found in the **professions** and may operate as accountants, solicitors, estate agents and architects, for example
- **companies**: where **shareholders** own the business. They elect a board of directors to run the business on their behalf. These vary in size and can be found in a number of different business sectors, such as manufacturing, construction, public transport, media, financial services, oil and gas, pharmaceuticals and engineering.

GENERAL VOCABULARY

provision the act of providing something that someone needs

In most countries, private sector businesses are relatively small and include only sole traders, partnerships and small companies. A minority of businesses are large but contribute enormously to the **provision** of goods and services. Some are multinationals, which means they have factories and other operations all over the world.

AIMS

In the private sector, the aims of firms are likely to be determined by their owners. The main aim of most owners is to make a profit. However, a number of other aims need to be considered.

- **Survival:** When a firm is first set up, many owners will not expect to make a profit immediately. It takes time to establish a business and new business owners often encounter unexpected difficulties. As a result, the initial aim of a firm might be simply to survive. Survival is also important when trading conditions are difficult. In 2008 and 2009, because of global financial difficulties and recession, many firms began to struggle due to falling sales and difficulties in raising finance. During this time, many of them were happy just to survive.
- **Profit maximisation:** The owners of most firms are in business to make a profit. Economic theory assumes that firms will aim to maximise profits (see Chapter 2, pages 12–17). This is where a firm will make as much profit as it possibly can in a period of time. Companies pay their shareholders a share of the profit through a **dividend**. Many of these shareholders want dividends to be as high as possible and therefore profit maximisation is an important objective. However, some firms are content to make just enough profit to keep the owners satisfied. In a small firm, this might mean that an owner does not want to take on the extra responsibility of growth and is content to make a satisfactory profit. In a large company, it might mean that the managers who run the firm make enough profit to satisfy shareholders.
- **Growth:** Many firms aim to grow because bigger businesses enjoy a number of advantages. For example, large firms can reduce average costs by exploiting economies of scale (see Chapter 17, pages 124–131). Growth also means that profits will be higher in the future. Growth will also benefit other stakeholders such as workers, managers and directors. For example, their jobs will be more secure. However, one of the problems with growth is that profit is often used to finance it. Shareholders may not like this because dividends may be lower.
- **Social responsibility:** An increasing number of firms aim to be good corporate citizens. This means they aim to please a wider range of stakeholders. Owing to pressure from the government, the media, environmentalists, local residents, consumers, workers and other interested parties, some firms are aiming to become more socially responsible.

SUBJECT VOCABULARY

dividend part of a company's profit that is divided among the people with shares in the company

PUBLIC SECTOR ORGANISATIONS

OWNERSHIP AND CONTROL

Public sector organisations are owned and controlled by local or central government. Some of the main examples are outlined below.

- **Central government departments**, such as, in the UK, the Ministry of Defence, which is responsible for the armed forces, the Department of Health, which is responsible for the National Health Service, and the Department for Transport, which aims to manage the provision of a reliable and safe transport system, play a significant role. These departments are usually controlled by teams or boards led by a government minister.

GENERAL VOCABULARY

sue to make a legal claim against someone, especially for an amount of money, because you have been harmed in some way

SUBJECT VOCABULARY

assets things or resources belonging to an individual or a business that has value or the power to earn money
liabilities amount of debt that is owed or must be paid

- **Public corporations or state-owned enterprises (SOEs)** are owned by the government. This means that the government selects the people who run the organisation, often a board of directors. The government is also responsible for its key policies. Public corporations are usually incorporated businesses, which means they have a separate legal identity. They can **sue**, be sued and enter into contracts under their own name. Public corporations are state-funded, which means that the government provides their capital. The money comes mainly from taxation. All the **assets** and **liabilities** of public corporations belong to the state. However, they can also borrow money and are free to re-use revenue from the sale of any goods or services. The nature and number of public corporations around the world can vary in each country. For example, although a great number of public corporations around the world exist to provide a public service, there are many that operate commercially with the aim of making a profit – in the Middle East, Russia and India, for example.
- **Local authority services**, delivered by local councils, include recreation, such as libraries, sports halls and swimming pools; emergency services, such as the provision of fire and police services; and housing, which includes the provision of council housing and facilities for the homeless. Councillors who are elected by residents in the local community run local authorities.
- **Other public sector organisations**, such as the BBC, the Post Office, the Bank of England and Network Rail (all in the UK) are run by a trust or a board led by an experienced expert selected by a government body, or the Queen, following government advice.

AIMS

Public sector organisations have different aims from those in the private sector. Without aims, they are likely to deliver poor-quality services and waste resources. Each organisation in the public sector will have its own specific aims depending on the services they provide. However, there will be some common themes.

- **Improving the quality of services:** Public sector organisations generally aim to improve the standard of their services. Performance indicators may be used to monitor quality. For example, in the railway industry, targets might be set for reliability and punctuality. In the education system, league tables may be published to show student success rates in exams at individual schools. In general, performance indicators might focus on reliability, professionalism, levels of customer service and speed of service.
- **Minimising costs:** Government resources are scarce and it is important that waste is minimised. In the past, public sector organisations have been criticised for being inefficient. As a result, the government is regularly looking for ways to cut costs in all areas.
- **Allow for social costs and benefits:** Since their aim is not to make a profit, public sector organisations are better placed to take into account the needs of a wide range of **stakeholders**. As a result, when making decisions they can take into account externalities (see Chapter 13, pages 89–96).
- **Profit: in some countries, the government owns a number of large businesses that aim to make a profit.** In the UAE, Emirates Airline and Dubai World, an investment company that manages and supervises a range of businesses and projects for the Government of Dubai, are examples.

GENERAL VOCABULARY

stakeholders individuals or groups who are considered to be an important part of an organisation or of society because they have responsibility within it and receive advantages from it

DID YOU KNOW?

Some large, public corporations are part owned by the private sector. For example, the 'Indian' government owns about 60 per cent of the State Bank of India and private individuals, financial institutions, foreign institutions and other private owners own the rest.

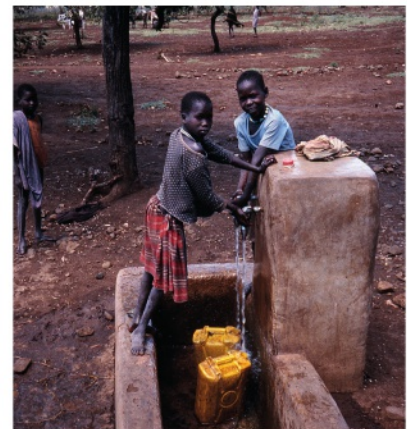
ACTIVITY 1

CASE STUDY: UGANDAN WATER SUPPLY

Water and sewerage services in Uganda, like many other countries in the world, are supplied by a government-owned organisation. The Ugandan government owns 100 per cent of The Ugandan National and Water Sewerage Corporation (NWSC). Its mission is: 'To sustainably and equitably provide cost effective quality water and sewerage services to the delight of all stakeholders while conserving the environment.' A board of directors, which is accountable to a government minister, runs the organisation.

NWSC has enjoyed much success in recent years. Its revenue increased from UGX 21 000 million to UGX 220 000 million between 1998 and 2016. NWSC is active in 162 towns, an increase from 27 towns in 2013. NWSC increased its number of account holders from 58 260 in 1998 to 450 000 in 2016. NWSC employs over 2800 people and has also enjoyed improvements in productivity. For example, in 1998, it took 36 staff to make 1000 connections; in 2016, this was reduced to six staff per 1000 connections.

NWSC is aiming to supply everyone with clean safe water within a 200 metre distance of all towns and urban centres (supply in these areas is currently 78 per cent). It links up with customers and local communities through NWSC Water Communication Clubs. On the NWSC website, it states that 'The customer is the reason we exist. We do everything to the delight of our customer.' According to annual surveys carried out by NWSC, 90 per cent of its customers are satisfied with the service provided.



▲ Bringing water to the people

- 1 Who owns and runs the Ugandan National and Water Sewerage Corporation (NWSC)?
- 2 What are the aims of NWSC?
- 3 Why do you think the government gets involved in business ownership?

TYPES OF ECONOMY

Different economies have different approaches to providing goods and services. The type of economy used to choose, produce and distribute goods varies according to the role played by the public sector. There are three types of economy. Historically, a country's type of economy was shaped by its political ideology: capitalist countries adopting a market economy and communist countries a command economy.

GENERAL VOCABULARY

monetary system of money in a particular country or the world as a whole, and the way that it is controlled by governments and central banks

- A **market or free enterprise economy** relies least on the public sector for the provision of goods and services. The vast majority are provided by private businesses. Market forces, that is, supply and demand, determine the allocation of resources. The role of the public sector is limited to providing a legal system, a **monetary** system, key state services like defence and policing and ensuring that competition exists between businesses. The most economically free countries in the world are often considered to be Singapore, Australia and the USA.
- A **command or planned economy** relies entirely on the public sector to choose, produce and distribute goods. All resources in planned economies belong to the government and the state is responsible for planning, organising and coordinating the whole production process. Goods are distributed from state-owned shops where they are sold to consumers at prices set by the state. There are few, if any, examples of planned economies in the world today. Cuba, Myanmar and North Korea are the closest examples.
- A **mixed economy** (see below) relies on *both* the public sector and the private sector to provide goods and services. Currently, the majority of countries have mixed economies.

THE MIXED ECONOMY

SUBJECT VOCABULARY

market failure where markets lead to inefficiency
mixed economy economy where goods and services are provided by both the private and the public sectors

In reality, no economy is entirely planned or free market. Most countries in the world have a **mixed economy** and the decisions what to produce, how to produce and for whom to produce are made by both consumers and the state.

WHAT TO PRODUCE?

A mixed economy recognises that some goods, such as consumer goods, are best provided by the private sector. Goods such as food, clothes, leisure and entertainment, and household services are best chosen by consumers. The market system ensures that businesses produce the consumer goods that people want. Other goods, such as education, street lighting, roads and protection, are more likely to be provided by the state. The public sector tends to provide goods that the private sector might fail to provide in sufficient quantities. This is often caused by **market failure**.

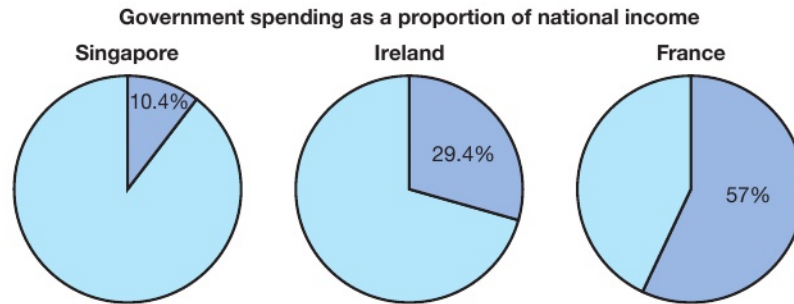
HOW TO PRODUCE?

In the private sector, individuals or groups of individuals who set up businesses with the aim of making a profit provide goods. Competition exists between these firms and this provides choice and variety for consumers. To meet consumers' needs, firms will use production methods that help them to maximise quality and minimise costs. Public sector services will be provided by the government organisations outlined above. They will decide how these services should be provided and attempt to supply them efficiently. However, some public sector goods are produced by the private sector. For example, governments are usually responsible for the provision of roads and motorways, however, they may pay private sector businesses to carry out the actual work of construction and maintenance.

FOR WHOM TO PRODUCE?

The goods produced in the private sector are sold to anyone who can afford them. The market system is responsible for their allocation. In contrast, most public sector goods are provided free to everyone and paid for from taxes. In some mixed economies, the state also makes provision for people who cannot work due to illness or disability, for example. A system of financial benefits exists to make sure that people have enough money to survive.

Finally, different governments around the world will decide on the 'degree of mixing' in this type of economy. Some countries, like France, allow the government to play a greater role in the economy. For example, government expenditure in France is around 57 per cent of its national income. In such countries, social provision is greater but taxes are higher. Figure 11.3 shows the proportion of national income spent by the government in three different countries – Singapore, Ireland and France.



▲ **Figure 11.3** General government spending as a proportion of national income in Singapore, Ireland and France

MARKET FAILURE AND THE NEED FOR GOVERNMENT INTERVENTION

Although markets may have a reputation for using resources efficiently, because of market failure, resources are sometimes wasted. Market failure is where markets lead to inefficiency. It can occur for a number of reasons.

EXTERNALITIES

Sometimes firms do not take into account all the costs of production. For example, a firm producing chemicals may pollute the atmosphere because it has not taken measures to clean its waste. This imposes a cost on society, such as poor air quality. Any damage done to people or things outside the business such as ill health, as a result of this activity is called an external cost (see Chapter 13, pages 89–96). The market system has resulted in the chemical firm failing to meet any cost imposed on those affected by the pollution.

GENERAL VOCABULARY

dominant more powerful, important, or noticeable than other people or things

SUBJECT VOCABULARY

merit goods goods that are under-provided by the private sector

public goods goods that are not likely to be provided by the private sector

LACK OF COMPETITION

A market may fail if there is no competition and it becomes dominated by one or a small number of firms. When this happens, the **dominant** firm(s) may exploit consumers, by charging higher prices and limiting choice, for example.

MISSING MARKETS

Some goods and services, called **public goods**, are not provided by the private sector. Examples include national defence, policing and street lighting. The nature of public goods is discussed below (see pages 78–79). Other goods, called **merit goods**, such as education and health care are underprovided by the private sector. This is because they are so expensive that many people would not be able to afford them.

LACK OF INFORMATION

Markets will only be efficient if there is a free flow of information to all buyers and sellers. Consumers need to know everything about the nature, price and quality of all products. Businesses also need information about the resources and production techniques used to make a product, for example. However, this is not always possible. A lack of information may result in the wrong goods being purchased or produced, or the wrong prices being paid.

GENERAL VOCABULARY

legislation law or set of laws

merger occasion when two or more companies or organisations join together to form a larger company

regulated industry that is closely controlled by the government

KEY FACTS: LACK OF COMPETITION

- In many countries, most people have to buy their water supply from one provider. They have no choice and have to pay the prices charged by the water company.
- The role of the government in this case is to monitor and control the prices charged by dominant firms or pass legislation to ensure that competition exists.

ROLE OF THE PRIVATE AND PUBLIC SECTORS IN THE PRODUCTION OF GOODS AND SERVICES

FACTOR IMMOBILITY

For markets to work efficiently, factors of production need to be *mobile*. This means that factors, such as labour and capital, must be able to move freely from one use to another. In practice, though, factors can be quite immobile. For example, a specialised laser machine designed specifically to cut sheet glass may not have any further use if the glass-making factory has to close down. As a result, the machine may have to be destroyed, which is wasteful.

Owing to the threat of market failure, the government often has to intervene in markets. Some examples are given below.

- Businesses that impose externalities may be heavily **regulated** or fined for polluting the atmosphere, for example.
- The government can use **legislation** to prevent businesses from dominating markets. For example, it can investigate whether a **merger** is in the interests of consumers and block them if they are not.
- State money can be used to provide public goods and merit goods. Since these goods and services are important to the well-being of everyone, the public sector can provide them free of charge.
- To overcome the problem of poor information, the government can help by passing legislation forcing firms to provide more information about products. However, in recent years the internet has improved the flow of information about products.
- The government may be able to help to make some factors more mobile, such as retraining workers when their previous jobs become redundant. But it can do little to avoid the waste of the machine in the above example.

In most countries, the private sector is responsible for providing the everyday goods and services bought by people. This would include food, clothes, consumer durables, such as electrical goods and cars, personal and household services, financial services, entertainment and holidays. It would also include raw materials, components, machinery and commercial services, such as cleaning maintenance, IT and insurance, which businesses buy. Very few governments would get involved in the provision of these goods and services.

However, the public sector tends to provide public services. In particular, it focuses on the provision of public and merit goods. Such goods would not be provided in sufficient quantities by the private sector. For example, public goods would not be provided at all. This is because it is virtually impossible for private firms to charge users for their consumption. The reason for this is because public goods have two particular characteristics.

- **Non-excludability:** This means that once a public good is provided in the market, any individual consumer cannot be prevented or excluded from its consumption. Also, an individual consumer cannot refuse consumption of the good even if they wanted to. For example, it is argued that the protection given by the police service is a public good. An individual cannot be excluded from the protection provided in a community by the police force. Neither can an individual living in that community refuse to benefit from that protection.
- **Non-rivalry:** This means that consumption of a public good by one individual cannot reduce the amount available to others. For example, someone benefitting from the protection provided by the police does not prevent others benefitting from the same protection.

SUBJECT VOCABULARY

free rider individual who enjoys the benefit of a good but allows others to pay for it

Governments have to provide public goods because of market failure. If the private sector were to provide public goods there would be a **free rider** problem. Since it is impossible to exclude the consumption of a public good by an individual consumer, there is little reason for people to pay for it. A free rider is someone who enjoys the benefit of a good but allows others to pay for it. Public goods like defence, policing, the judiciary system, prisons and street lighting will significantly increase the standard of living in a country. Consequently, the government takes responsibility for their provision – assuming there is enough money to pay for them.

ACTIVITY 2

CASE STUDY: PUBLIC GOODS IN BANGLADESH

Bangladesh has serious annual flooding problems. The country lies in the Ganges Delta where many tributaries flow into the River Ganges on its route to the Bay of Bengal. Flooding usually occurs during the monsoon season between June and September. To help protect large numbers of the population, flood defences are built in the country.



▲ An example of a flood defence in Bangladesh

- 1 Why are flood defence systems classified as a public good?
- 2 Why do governments need to intervene when there is market failure?

THE PUBLIC SECTOR AND PRIVATE SECTOR IN DIFFERENT ECONOMIES

The balance between public sector activity and private sector activity will vary in different countries. In some countries, governments play a key role in the provision of key public services, such as education, health care, security services and infrastructure. However, at the same time, they also own significant stakes in large commercial organisations, such as banks, airlines, water companies, energy provision and transport. Some examples of countries where the public sector plays a dominant role are China, Hungary, Russia, Sweden and the UAE.

In contrast, some governments believe that a greater quantity of goods and services should be provided by the private sector. In countries such as the USA, Singapore and Australia, the state has much less involvement in the provision of goods and services. Figure 11.3 shows that different countries vary their commitment to government involvement in the provision of public services. For example, France plays a much bigger role in the provision of goods and services than Singapore.

SUBJECT VOCABULARY

privatisation act of selling a company or activity controlled by the government to private investors

Finally, in recent years, many economies have become more market orientated. In many countries, the number of public corporations has been reduced. For example, in some countries, industries such as water provision, electricity generation and distribution and telecommunications have been transferred to the private sector. Many Eastern European countries have also transferred a lot of government-run businesses into the private sector following the break-up of the Soviet Union. The process of transferring public sector resources to the private sector is called **privatisation** and is discussed in Chapter 12 (pages 81–88).

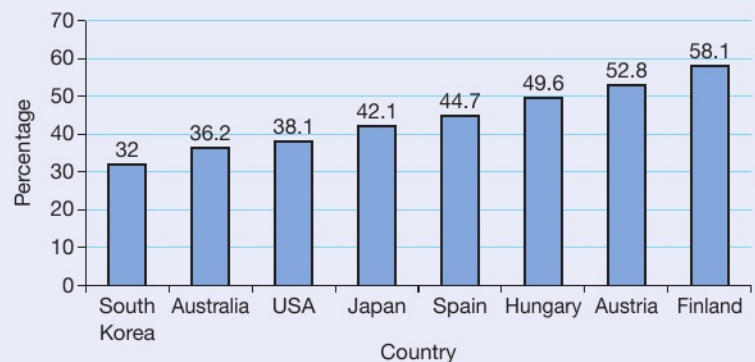
MULTIPLE-CHOICE QUESTIONS

- 1 Which of the following goods or services is most likely to be provided by the public sector in a mixed economy?
- A Motorways
 - B Cars
 - C Books
 - D Cinemas
- 2 Which of the following is an aim of a public sector organisation?
- A Profit maximisation
 - B Survival
 - C Providing a public service
 - D Growth

ECONOMICS IN PRACTICE

CASE STUDY: MIXED ECONOMIES

General government spending, as a percentage of GDP, provides an indication of the size of government involvement in the provision of goods and services. The variation in this indicator shows the variety of countries' approaches to delivering public goods and services and providing social protection. Figure 11.4 shows the government expenditure as a percentage of national income for a selection of countries. All of the countries have mixed economies.



▲ Figure 11.4 Government expenditure as a percentage of GDP

CHAPTER QUESTIONS

- 1** Describe what a mixed economy is.
- 2** In Figure 11.4, in which country does the public sector play the greatest role? Explain your answer.
- 3** Describe the main method used in South Korea to distribute goods and services.
- 4** In Figure 11.4, in which country would you expect taxes to be highest? Explain your answer.
- 5** In some countries, such as India and China, air pollution is a very serious problem. To what extent is this an example of market failure?

12 PRIVATISATION

LEARNING OBJECTIVES

- Understand how privatisation is defined
- Understand the effects of privatisation on consumers, workers, businesses and the government

SUBJECT VOCABULARY

monopolies situation where a business activity is controlled by only one company or by the government, and other companies do not compete with it

privatisation act of selling a company or activity controlled by the government to private investors

GENERAL VOCABULARY

bankrupt not having enough money to repay your debts

GETTING STARTED

Since the 1980s, some governments around the world have transferred public sector resources to the private sector. This process is called **privatisation**. In Europe, some large industrial **monopolies** were privatised to improve competitiveness and efficiency. In Eastern Europe, privatisation was a result of the political and economic changes that took place after the break-up of the Soviet Union. Look at the example below.

CASE STUDY: GREEK AIRPORT PRIVATISATION

After the financial crisis in 2008, it was discovered that the Greek government had acquired extremely large debts. To help deal with these debts, Greece had to borrow large amounts of money from the EU to prevent the country from going **bankrupt**. In order to receive a package of loans worth €86 000 million, it had to promise international lenders that it would start selling some state assets. One significant deal was made in 2015 when the Frankfurt airport operator, Fraport, obtained a 40-year agreement to upgrade and operate some Greek airports, including those on the tourist islands of Corfu, Mykonos, Rhodes and Santorini. The deal raised €1230 million for the Greek government. Fraport will also pay Greece an annual operating fee of €22.9 million and invest €330 million in airport facilities. The investment was expected to improve the quality and efficiency of airport operations.

In the future, Greece is expected to sell other assets such as the railways, the national lottery, utilities, ports and perhaps some of its islands.

- 1 Why were the Greek airports privatised?
- 2 Describe the possible benefits of the privatisation to consumers.
- 3 In pairs, carry out some research to see if any state organisations have been privatised in your country. Try to identify the reasons why they have been transferred to the private sector and how much money the government raised. Present your results in a report.



▲ Fraport began operating Corfu airport in 2015

WHAT IS PRIVATISATION?

SUBJECT VOCABULARY

nationalised industries public corporations previously part of the private sector that were taken into state ownership

natural monopolies situation that occurs when one firm in an industry can serve the entire market at a lower cost than would be possible if the industry were composed of many smaller firms

Privatisation involves transferring public sector resources to the private sector. During the 1980s and 1990s in the UK, the government sold off a large number of state assets to the private sector. For example, in 1987, British Airways, Rolls-Royce, Leyland Bus, Leyland Truck and the British Airport Authority were all privatised. It was argued that these organisations would be more efficient if they were operated without government interference. Privatisation has taken a number of forms in the UK.

- **Sale of nationalised industries:** **Nationalised industries** such as British Rail, British Airways and British Telecom were once private sector business organisations. However, for a number of reasons they were taken into public ownership. For example, it was felt that they should supply services that were unprofitable, such as railways in remote areas. Many were **natural monopolies** and would serve consumers more effectively under state control. However, after years under state control, they were sold off. They became private sector businesses, owned by private shareholders.
- **Contracting out:** Many government and local authority services have been 'contracted out' to private sector businesses. This is where contractors are given a chance to bid for services previously supplied by the public sector. Examples include the provision of school meals, hospital cleaning and refuse collection.
- **The sale of land and property:** During the 1980s, people renting local, council-owned properties were given the right to buy their own homes. They were given generous discounts to persuade them to buy. As a result, about 1.5 million council-owned houses were sold to private individuals in the UK.

WHY DOES PRIVATISATION TAKE PLACE?

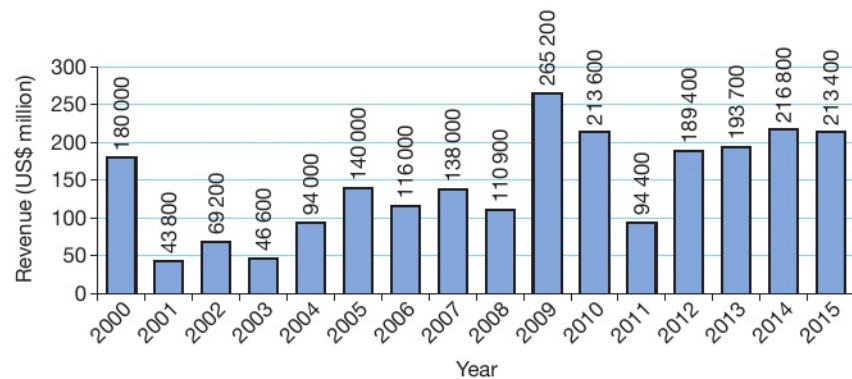
Different reasons have been put forward for privatisation.

- **To generate income:** The sale of state assets generates income for the government. Figure 12.1 shows the revenue raised globally by privatisation between 2000 and 2015. The graph suggests that governments around the world are still keen to sell off state assets for money. As outlined in 'Getting started', Greece has been under pressure in recent years to raise money from the sale of state assets in order to meet the demands of international lenders.
- **Public sector organisations were inefficient:** Some nationalised industries lacked the **incentive** to make a profit and often made losses. It was argued that in the private sector they would have to cut costs, improve services and return profits for shareholders. They would also be more **accountable**. For example, in the private sector, if customer needs were not met, a company may lose customers and struggle to generate enough revenue and profit to survive (assuming there was competition in the market).
- **To reduce political interference:** In the private sector, the government could not use these organisations for political aims. They would be free to choose their own investment levels, prices, product ranges and growth rates, for example. In the past, some nationalised industries have been unstable due to constant government interference. This has often held back their performance.

GENERAL VOCABULARY

accountable being responsible for the effects of your actions and willing to explain or be criticised for them

incentive something that is used to encourage people to do something, especially to make them work harder, produce more or spend more money



▲ Figure 12.1 Global revenue from privatisation, 2000–15

In recent years, a number of countries around the world have adopted privatisation programmes. For example, because of the economic crisis, and pressure from the World Bank and the International Monetary Fund, in 1991, India began privatising state assets. It began by selling the Bharat Aluminium Company and a few airports such as Bangalore, Delhi, Hyderabad and Mumbai. More recently, in 2016, India has said it will sell off controlling stakes (ownership of more than 50 per cent of shares in a company) in 22 companies. This includes some large state-run companies such as Container Corporation of India, Bharat Earthmovers, three steel plants and the Cement Corporation of India.

There have also been huge privatisation programmes in many Eastern European countries. Before the break-up of the Soviet Union, public sector groups conducted nearly all production. Afterwards, governments decided to develop mixed economies (see Chapter 11, pages 70–80) and began privatising vast quantities of public sector resources.

ACTIVITY 1

CASE STUDY: PRIVATISATION MOTIVES

Below is an extract from a government White Paper 'Working Together'.

'Just as a strong government is required to steer the economy through a recession, it is also the case that a responsive state should withdraw from areas in which it is no longer required. Now more than ever government must prioritise its interventions and secure the greatest possible efficiency for every pound of taxpayers' money it spends. As we redouble our efforts to reform and renew our public services, it is vital we are bolder in our efforts to strip out waste, improve productivity and sell off public assets that the state no longer needs to own. The government will set out proposals on these issues at the budget.'

- 1 To what extent does this extract suggest that the government is committed to more privatisation in the future?
- 2 According to this extract, what are the motives for future possible privatisation?
- 3 Suggest two other possible reasons for privatisation.

EFFECTS OF PRIVATISATION

Privatisation has had a big impact in some nations. The effects have been felt in a number of areas and some evidence suggests that there have been both advantages and disadvantages resulting from privatisation.

CONSUMERS

It is hoped that consumers will benefit from privatisation. Once in the private sector, businesses are under pressure to meet customer needs and return a profit for the owners. This should mean that businesses will be efficient, try to provide good quality products, charge a reasonable price and grow. However, consumers have seen both improvements and a decline in price and service. For example, in the UK, according to the water and sewerage regulator Ofwat, since the privatisation of ten water providers in 1989, the number of customers at risk of low water pressure has fallen by 99 per cent. In telecommunications, the waiting time for a new BT line has fallen from around 6 months to just 15 days. In contrast, though, since the privatisation of the rail industry in the UK, the amount of government subsidies given to the rail industry rose from just over £1000 million in the late 1980s to more than £6000 million in 2006/07. Even in 2014/15 the subsidy was still £4000 million. Taxpayers feel this increased financial responsibility. Rail fares to consumers have also risen sharply. Rail users in the UK now pay some of the highest fares in the world. For example, tickets similar to the £357.90 monthly season pass from Chelmsford to London would cost just £37 in Italy, £56 in Spain and £95 in Germany. There have been suggestions in recent years from some UK politicians that the country's railways could be renationalised in future to improve service to customers.

KEY FACTS: CONSUMERS

In 2016, the UK regulatory body Ofwat proposed fining South West Water £1.7 million for missing performance targets after it was discovered leaking sewerage into the sea. Another water company, Southern Water, was threatened in 2014 with a £176 million fine for poor customer service and mismanaging sewerage systems.

WORKERS

Quite often in the run up to privatisation, and after an organisation has moved into the private sector, quite large numbers of people are made redundant. Although this may reduce costs, many see this as a negative effect. Evidence of this is provided by what happened in the UK after a number of privatisations. For example:

- when the coal industry was privatised, more than 200 000 jobs were lost
- British Telecom shed more than 100 000 jobs when it was sold to the private sector
- the Rail, Maritime and Transport Union suggested that there were 20 000 to 30 000 job losses as a result, of rail privatisation
- British Energy shed one-quarter of its workforce just before privatisation
- British Steel shed 20 000 jobs before it was privatised.

Mass redundancies often weaken companies through the loss of experienced staff and make it more difficult and more expensive to scale up in future. In addition to job losses, in an effort to improve efficiency, many workers may have been pressed into raising their productivity. They might have been forced to adopt more flexible working practices, for example. Those who support the process of privatisation would suggest that these measures were necessary in order to compete in global markets. However, the impact on many communities of mass unemployment within the UK is still felt today.

BUSINESSES

Once in the private sector, firms are left without government interference and have to face competition. They have been affected in a number of ways in the UK.

- Their objectives have changed. For most firms, profit has become an important objective. For example, the profits of British Telecom increased from around £1000 million in 1984, when the company was first privatised, to nearly £3170 million in 2016.
- Many firms have increased investment following privatisation. For example, many of the water companies raised investment levels to fund new sewerage systems and water treatment plants. Immediately after privatisation, investment rose by about £1000 million in the water industry. However, more recently, some figures suggest that investment levels are falling.
- There have been a number of mergers and **takeovers** involving newly privatised firms. For example, Hanson bought Eastern Electricity and an American railway company bought the British Rail freight service. North West Water and Norweb joined together to form United Utilities and Scottish Power bought Manweb.
- Many privatised businesses have **diversified** into new areas. For example, British Telecom now provides television programmes and has invested heavily in broadcasting Premier League and Champions League football in the UK.

GOVERNMENT

One way in which governments have benefited from privatisation is the huge amount of revenue that has been generated. However, privatisation has been expensive. In particular, the amount of money spent advertising each sale has been criticised. The money spent on television advertising was at the taxpayer's expense. It has also been suggested that some state assets were sold off too cheaply. As a result, governments failed to maximise the revenue from sales. Governments are no longer responsible for running the newly privatised companies. As a result, it can focus more sharply on the business of government.

The Polish government has almost completely stopped the privatisation process. In 2016, a minister said that the privatisation policies of previous governments were wrong and would be ended. Only companies in trouble, or those 'without importance to the national economy', would be sold off in future. One reason for the change in policy was that too many state-owned companies were the subject of a **hostile takeover** after privatisation. Furthermore, the government also said that it might try to renationalise some of the companies that had been privatised. One target would be energy, it was claimed.

SUBJECT VOCABULARY

diversified if a company or economy diversifies, it increases the range of goods or services it produces
hostile takeover takeover that the company being taken over does not want or agree to
takeovers act of getting control of a company by buying over 50 per cent of its shares

ACTIVITY 2

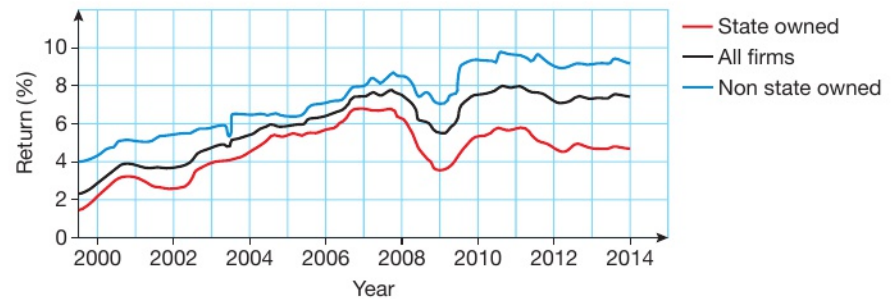
CASE STUDY: PRIVATISATION IN CHINA

In recent years, China has begun to sell off state-owned assets. However, in 2014, the government made a statement saying that it planned to accelerate the process in order to 'clean up and integrate some of China's state-owned enterprises (SOEs)'. Little detail was given in the announcement but it was clear that the government wanted make its SOEs more innovative and internationally competitive. SOEs have underperformed in recent years and it is felt that private sector involvement will help to increase investment and improve efficiency. The announcement also made it clear that mixed ownership was preferred.

Over 100 companies were under central government ownership in China in 2014 with local governments also owning and managing around 25 000 SOEs. This sector employs nearly 7.5 million people. The privatisation

process will allow state firms to attract investors to help spread share ownership. In addition, many state firms will be encouraged to reorganise so that they are eventually suitable for a stock market listing. Some felt that the slowing of growth in the Chinese economy caused the acceleration of privatisation. The government said growth in China's investment and factory output had missed forecasts. As a result, it was felt that Chinese economic growth might dip below 7 per cent for the first time since the global financial crisis.

Finally, it has been suggested that there may be some opposition to the acceleration in privatisation. For example, many local governments may not be happy about sharing ownership of SOEs with private investors. This is because their ties with SOEs are very strong. Another problem might be attracting interest from the private sector. There was a stock market crash in China in 2016 and many private investors will be wary of buying shares again.



▲ Figure 12.2 Performance of state-owned enterprises compared to private sector organisations

- 1 What is meant by mixed ownership in this case?
- 2 Discuss why the government wants to accelerate the privatisation process in China. Include two reasons in your answer.
- 3 Assess one possible difficulty that might be encountered when encouraging the private sector to get involved in the running of SOEs in China.

MULTIPLE-CHOICE QUESTIONS

- ▶ 1 Which of the following is a motive for privatisation?
 - A Improve the welfare of shareholders
 - B Generate money for the government
 - C Increase growth in the public sector
 - D Reduce externalities
- ▶ 2 Many workers suffer as a result, of privatisation because of which of the following reasons?
 - A They are often relocated
 - B They are not allowed to belong to a **trade union**
 - C Their jobs are at risk
 - D They have to pay more tax

GENERAL VOCABULARY

trade union organisation representing people working in a particular industry or profession that protects their rights

ECONOMICS IN PRACTICE

CASE STUDY: WATER PRIVATISATION

The World Bank has predicted that by 2025 two-thirds of the world's population will not have enough water. In addition, 2400 million people will face serious water shortages. After many years of privatisation, the water supply in many countries has been placed in the hands of private sector businesses. Many argue that the privatisation of water is not in the interests of consumers. However, supporters of water privatisation disagree. It is not easy to settle the argument. In some cities, like Guayaquil in Ecuador, Bucharest in Romania and in Colombia, Morocco and Senegal, it has been claimed that water privatisation has been successful. However, in Bolivia, Tanzania, Indonesia, and in parts of Europe, water privatisation is said to have failed. In one example, in Manila, the Philippines, a 25-year, US\$2700 million project, using both private and public sector ownership, took control of the water supply. This was claimed to be a success because the project provided an extra 1.7 million people with clean water, reduced cases of illness such as diarrhoea by 51 per cent, and offered customers significant savings, charging 20 times less than previous water vendors. However, opponents claimed that Manila's water privatisation led to continual price increases, legal challenges, investigations, failures to provide certain districts with water, and has given the companies unfair returns for their work.

Generally, one of the main criticisms of water privatisation is that prices rise. Once water supply is taken into private ownership, there is very little, if any, competition. As a result, water companies can raise prices with very little opposition. Table 12.1 shows the prices charged by a selection of water companies in the UK.

	2003/04	2013/14
Northumbrian	£207	£359
Southern	£252	£449
Wessex	£263	£478
Thames	£203	£354

Note: Inflation between 2003 and 2012 was 36.1 per cent

▲ **Table 12.1** Annual prices charged by a selection of UK water companies in 2003/04 and 2013/14

Another reason why water privatisation is opposed is because water quality is not always maintained. This is because water companies, by seeking to maximise profit, can sometimes minimise costs and overlook the environmental impact of their activities. In the USA, the National Association of Water Companies (NAWC), which represents the US private water industry, has put pressure on the Environmental Protection Agency not to adopt higher water quality standards.

Opponents also say that private water providers, as a result of the 25–30-year deals done with governments, become monopolies and are accountable only to shareholders. This means that profits become the main focus of the companies and the interests of consumers are ignored. For example, Northumbrian Water's operating profit jumped from £165.3 million in 2001/02 to £338.8 million in 2011/12 (more than double), while

South West Water's operating profit increased dramatically from £107 million to £204.7 million over the same time period.

Water privatisation also results in job losses as companies minimise costs. The privatisation is also difficult to reverse. This is because once water companies have been sold to the private sector, the cost of buying them back is too high. Plus, many of the water companies are (or are part of) giant multinationals, which have a great deal of power.

Those in favour water privatisation argue that efficiency and the quality of service will improve. This is because businesses in the private sector have to perform well or they will not survive. They also say that the private sector will provide far more investment in water infrastructure than the public sector. For example, since privatisation, UK water companies have invested nearly £120 000 million in water infrastructure, such as new pipes, treatment plants and sewers. Private companies are more capable than governments of raising funds to finance investment. This is because private companies specialise in one area whereas governments have many different areas of investment to consider.

Finally, another benefit of water privatisation is the money generated for the government. Not only does the government get the money from the sale of water companies, but it also receives taxes every year on the profits made by the water companies once they start operating in the private sector.



▲ A water treatment plant

CHAPTER QUESTIONS

- 1 Calculate the percentage increase in water charges for the four water companies shown in Table 12.1.
- 2 Describe one reason why a government might benefit from the privatisation of water supplies.
- 3 Why might privatisation result in better efficiency?
- 4 What impact might privatisation have on businesses? Give two impacts in your analysis.
- 5 Consider the impact of water privatisation on consumers.

13 EXTERNALITIES

LEARNING OBJECTIVES

- Understand how external costs are defined with examples
- Understand how external benefits are defined with examples
- Understand the definitions and formulae for social costs and social benefits
- Understand the government policies used to deal with externalities

SUBJECT VOCABULARY

spillover effects effect that one situation or problem has on another situation

GENERAL VOCABULARY

emissions gas or other substance that is discharged into the air.

GETTING STARTED

Economic activity, such as building a new factory or transporting a ship full of oil from Qatar to Japan, will affect those inside the business. However, economic activity can also have an impact on those outside. There are **spillover effects**, which can result from both production and consumption. Look at the examples below.

CASE STUDY: PRODUCTION

In 2016, a European waste management company was fined €1.4 million for breaking **emissions** limits in an urban area. For 2 years, residents had complained to the local authorities about the 'dreadful smell' coming from the waste disposal plant located near to the area. The plant was using an industrial incinerator to burn refuse that it collected from households. A local television broadcaster interviewed one resident. She said, 'The situation has become intolerable. There are times when the smell penetrates through the structure of the house. If you go outside into the garden sometimes your eyes sting from the fumes.' A spokesman from the company said that measures would now be taken to reduce emissions to comply with EU standards.

CASE STUDY: CONSUMPTION

Every year from 1 December, children and many adults, look forward to passing the house belonging to Mr and Mrs Salomonsson. This is the day that the couple turn on their Christmas lights. They spend 2 weeks decorating their house in Gothenburg, Sweden, with around SEK 5000 of new lights. People from many miles away make a special journey to ensure that they pass the attractive display of lights.

- 1 Describe one possible reason why a business might continue to impact negatively on those outside the business as a result of its production activities.
- 2 How might the consumption of a good by one person bring benefits to third parties? Use this case as an example in your explanation.
- 3 In pairs, make a list of examples of business activity that has an impact on third parties. Present your ideas to the rest of the class, explaining the various impacts.



▲ Christmas lights

EXTERNAL COSTS OF PRODUCTION

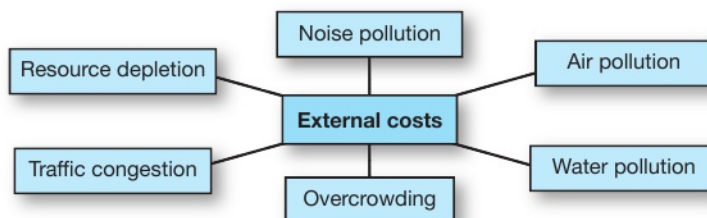
GENERAL VOCABULARY

third parties someone who is not one of the two main people or organisations involved in an agreement or legal case

SUBJECT VOCABULARY

external costs negative spillover effects of consumption or production – they affect third parties in a negative way

Some production activity results in costs that are incurred by **third parties**. Third parties are people outside the business. They are neither owners nor employees – they may be individuals, such as local residents, organisations and property owners, or a resource, such as a river. These **external costs** are the spillover effects of production. In 'Getting started', the effect of the emissions discharged by the waste management company was an example of an external cost. Residents living close to the waste disposal plant felt this cost. Some other examples of external costs are shown in Figure 13.1.



▲ Figure 13.1 Examples of external costs

ACTIVITY 1

CASE STUDY: EXTERNALITIES IN FACTORY FARMING

Factory farming involves raising a large number of farm animals in a restricted space. The farm operates as a factory attempting to produce the highest output at the lowest cost by relying on economies of scale, modern machinery and biotechnology. However, this approach requires medicines and chemicals, such as antibiotics and pesticides, to control the spread of disease caused by crowded living conditions. Factory farming has resulted in farms that are easier to run with lower labour costs and more output. However, it has also resulted in:

- serious animal welfare problems
- an increased number of antibiotic-resistant bacteria due to the excessive use of antibiotics
- air quality problems
- the pollution of rivers, streams, and coastal waters with animal waste.



▲ An example of factory farming

- 1 What is meant by external costs? Use the example in this case in your explanation.
- 2 Discuss how the growth in the popularity of free-range chickens might affect the size of the external costs in this case.

EXTERNAL BENEFITS OF CONSUMPTION

SUBJECT VOCABULARY

external benefits positive spillover effects of consumption or production – they bring benefits to third parties

The consumption of certain goods can have positive spillover effects. These are called **external benefits** and might be enjoyed by third parties such as individuals, organisations and communities. Some examples of external benefits are outlined below.

EDUCATION

Education will clearly benefit those who attend schools, universities and colleges. They are likely to get better jobs, earn more money and enjoy a better quality of life. However, education can also benefit the wider society. This is because if people are well educated they may do highly skilled and socially useful jobs, such as doctors, teachers, pilots, senior administrators or research scientists. As a result, productivity will be higher and the standard of living for society as a whole will rise. It could also be argued that higher levels of individual education will lower unemployment, improve household mobility and raise rates of political participation – all of which will benefit the wider society.

HEALTH CARE

Individuals that consume health care will benefit if their own personal health improves. They will feel less pain, can return to work and enjoy life more. However, the consumption of health care by an individual can also benefit third parties. For example, if people are healthier they are able to work more effectively making contributions to economic output and paying taxes. This will benefit the wider society.

VACCINATIONS

If an individual receives an injection to protect against an infectious disease, he or she benefits directly. This is obviously beneficial to the individual but third parties will also benefit. This is because if more individuals are given vaccinations to prevent infection, the likeliness of others (who do not get vaccinated) contracting disease is lower. This is because the number of people who might pass on the disease is reduced because they have been vaccinated.

SOCIAL COST

SUBJECT VOCABULARY

private costs costs of an economic activity to individuals and firms

The production or consumption of a good will have costs that can be divided into **private costs** and external costs. Those who consume or produce a good meet private costs. For example, the private cost to a smoker might be the US\$100 per month that is spent on cigarettes. The external cost will be the discomfort and health risk that a third party might be exposed to as a result of inhaling cigarette smoke.

In production, the private cost to a property developer of building a retail centre might be the US\$220 million financial cost of the project. The external costs might include the:

- noise generated from the development site during construction
- congestion caused in the local area by construction vehicles and workers arriving and leaving the site each day.

The costs to society as a whole of an economic activity, the **social cost**, are made up of private costs and external costs.

Social cost = Private costs + External costs (negative externalities)

SUBJECT VOCABULARY

social costs costs of an economic activity to society as well as the individual or firm

SOCIAL BENEFIT

The production or consumption of a good will also have benefits that can be divided into **private benefits** and external benefits. Those who produce or consume a good enjoy private benefits. In 'Getting started', the private benefits to Mr and Mrs Salomonsson of spending SEK 5000 on their Christmas lights

SUBJECT VOCABULARY

private benefits rewards to third parties of an economic activity, such as consumption or production

social benefits benefits of an economic activity to society as well as to the individual or firm

is the satisfaction and pleasure they receive from designing their display and seeing the lights when they are switched on. They might also get pleasure from the fact that others come to see the lights. The external benefit in this example is the enjoyment third parties get from seeing the displays. These are the people who did not pay for the Christmas lights but nevertheless are able to enjoy the display as they pass the house.

In production, the private benefits to the property developer of building the retail centre described above are the financial returns it makes from the investment. This might include the rents received from those who rent the retail units. The external benefits are the benefits enjoyed by third parties such as the creation of employment and the provision of a brand new shopping facility in the area.

The benefits to society as a whole of an economic activity, the **social benefits**, are made up of private benefits and external benefits.

Social benefits = Private benefits + External benefits (positive externalities)

ACTIVITY 2**CASE STUDY: COSTS AND BENEFITS OF CAR OWNERSHIP**

After starting a new job for a global software developer, Sally Wright took out a US\$12 000 loan to buy a new car. However, she was a little shocked when she had to pay US\$3300 for a year's insurance. She decided to pay this in 12 monthly instalments to spread the cost over the year. She had been looking forward to the convenience and flexibility that car-ownership provides for many months. She was also looking forward to taking her mum shopping each week.



- 1 What are the possible private (a) costs and (b) benefits to Sally of buying the car?
- 2 What are some of the possible external costs resulting from Sally's purchase?
- 3 What is meant by social cost? Use an example from this case in your explanation.

GOVERNMENT POLICIES TO DEAL WITH EXTERNALITIES**KEY FACTS: TAXATION**

- In the UK, the government imposed a tax on dumping waste in landfill sites.
- Since 2000, the amount of waste sent to landfill has dropped by 70 per cent and the average household recycling rates have risen from 18 per cent to 44 per cent.

DID YOU KNOW?

One reason why rail companies are subsidised in many countries is because they take traffic off the road and therefore help to reduce congestion and carbon emissions. Subsidies also reduce demand for new roads and the expense of repairing and maintaining existing roads.

A government will want to discourage economic activities that result in negative externalities and encourage those that result in positive externalities. How can this be done?

TAXATION

Taxation can be used to reduce external costs of production. For example, if a tax is imposed on a chemical firm that produces damaging emissions, production costs will increase and the prices charged by the firm will rise. This should result in a fall in demand for the firm's product and therefore a reduction in pollution.

Taxes can also be used to reduce the external costs of consumption. For example, high taxes on cigarettes should reduce supply, which will raise the price. As a result the demand for cigarettes should fall and fewer third parties will be affected by smoke. However, cigarettes are addictive and when prices rise as a result of the tax, demand may not fall by very much.

SUBSIDIES

The government can offer money, such as subsidies and other financial rewards, to firms as an incentive to reduce external costs. For example, a firm might receive a subsidy if it builds a plastics recycling plant. This might encourage households and firms to recycle their plastic waste instead of dumping it. The government can also give subsidies to firms that generate external benefits. For example, some governments around the world have given subsidies to the producers of solar energy. This results in an increase in the supply of solar energy, which should stimulate more demand. If more solar energy is used to generate power, then less 'dirty' energy will be produced, which will benefit the environment. Subsidies to university students, in the form of grants, should encourage more people into higher education. As a result, the wider society will benefit from a better-educated population.

One of the problems with government subsidies is the opportunity cost. The money spent by governments on subsidies to reduce external costs or raise external benefits might be spent more effectively on other government projects.

FINES

In some countries, a system of fines is used to reduce external costs. For example, fines may be imposed on those who damage the environment. In 2016, a court in China ordered six unnamed companies to pay a total of US\$26 million for polluting the environment discharging waste chemicals into rivers. Also, in Kenya, Mombasa County Government said in 2016 that it would introduce fines to reduce pollution in the nation's main tourist spots. For example, vehicle owners found dumping litter in the streets would be fined KSH 250 000 and motorists or matatu (mini-bus) owners whose vehicles emit smoke would be fined KSH 200 000. Also, drivers who play loud music would be charged a similar amount.

GOVERNMENT REGULATION

Pressure has grown on governments in recent years to pass more legislation to protect the environment. Much of the pressure has emerged because of growing concerns about global warming. Many countries around the world have laws that are designed to protect the environment. Most of these laws are directed at businesses and aim to reduce the external costs of production. For example, in the UK, the Environment Act 1995 was set up to monitor and control pollution. It also laid down regulations relating to polluted land, abandoned mines, national parks, air quality and waste. One of the problems

with government regulation in some countries is that even though laws exist, it is not easy to make companies and people obey them. Governments may lack the commitment to enforce laws or they may not have enough resources for enforcement. Also, some of the companies responsible for pollution are powerful, well-resourced multinationals and are prepared to stand firmly against governments in legal disagreements.

POLLUTION PERMITS

Governments can issue a **pollution permit** to a company. These documents give businesses the right to discharge a certain amount of polluting material – say 1 tonne per year. These permits are 'tradable'. This means that a business can sell its pollution permit to another business if it has found a way of reducing its own level of pollution. Therefore, a business that is struggling to control levels of pollution can buy a permit and discharge more polluting material legally. This further creates an incentive in the market for companies to introduce new technology that reduces pollution because they can then sell their pollution permits for cash. This can help to raise profits.

One problem of using pollution permits is that a government has to decide how many of these permits to issue. It will be affected by carbon dioxide reduction deals that each country has signed up to. However, pollution is difficult to measure and a government might end up giving out too few or too many permits. Also, the costs of permit administration are quite high and businesses may disguise their levels of pollution if it is difficult to measure.

GENERAL VOCABULARY

pollution permit government issued document that gives a business the right to discharge a certain quantity of a polluting material into the environment

MULTIPLE-CHOICE QUESTIONS

- ▶ 1 Which of the following is an example of an external cost resulting from production?
 - A Smoke fumes from cigarettes
 - B Loud music from a noisy neighbour
 - C Noise pollution from an aircraft
 - D Job creation resulting from the development of a brownfield site
- ▶ 2 Which of the following represents social cost?
 - A Private costs + Private benefits
 - B Private benefits + External benefits
 - C Private costs + External costs
 - D Private costs – Private benefits

ECONOMICS IN PRACTICE

CASE STUDY: POLLUTION IN CHINA**AIR POLLUTION**

In recent years, rapid economic growth in China has resulted in some serious pollution problems. For example, in 2010 a report said that in about one-third of the 113 Chinese cities surveyed air quality was below national 'safe' standards. According to the World Bank, 16 of the world's 20 most polluted cities were in China and even the Chinese government admits that about one-fifth of city dwellers breathe badly polluted air. A World Health Organisation (WHO) study said that the amount of airborne suspended particulates in northern China is about 20 times higher than 'safe levels'.

Much of the pollution comes from heavy industry. Many cities are spoiled by the smell of high-sulphur coal and cheap petrol. In Shanghai and Beijing, the pollution is so bad that airports have to be closed because of poor visibility. It has been said that people living above the fifth floor in some city tower blocks cannot see the ground beneath them and the sight of blue sky is rare. At the end of 2015, Beijing authorities finally issued a 'red alert' for air pollution.

WATER POLLUTION

Another problem in China is water pollution. For example, around 60 per cent of China's underground water supplies are polluted. In addition, much of the drinking water in rural areas is unfit for human consumption because of pollution from fertilisers, pesticides and industrial activity. A report in a UK newspaper said that Chinese water authorities admitted in 2012 that up to 40 per cent of the country's rivers are 'seriously polluted'. Also, a report in 2012 found that up to 200 million rural Chinese have no access to clean drinking water. Pollution-induced algae blooms, causing the surface of the water to turn a bright green, often affect China's lakes. In many rural areas there are no systems to treat wastewater.

GOVERNMENT INTERVENTION

In 2016, the Chinese government planned to ban industrial plants, paper mills and refineries that pollute the country's water supplies. This was part of a wider plan to improve water quality. The government wanted to increase the proportion of good quality water to more than 70 per cent by 2020 in seven major river basins. Already the government has blocked some industrial projects, such as coal gasification plants, because they use up too much water or pollute water systems. The plan will focus on small-scale paper factories, leather, printing and dyeing, oil refineries, electronic plating and pharmaceutical factories. One of the benefits of this plan was expected to be a CN¥ 1.9 trillion boost in China's environmental protection industries.

In addition to higher water and wastewater prices, the wastewater discharge permits and new stricter industrial standards should help to reduce pollution. The price of water discharge permits traded has already risen sharply, as will fines. The new environmental laws will mean tough penalties for polluters with threats of jail for parties responsible for pollution. Recently, the China National Petroleum Corporation agreed to pay CN¥ 100 million

following claims it allowed benzene to leak into waterways in Lanzhou, north-east China. The government also plans to target corrupt officials who have encouraged polluting industries in the past.

The government is also targeting air pollution. Companies polluting the atmosphere will also face heavy fines. Non-government organisations will also be encouraged to sue offenders and local governments will be held accountable for introducing environmental policies. New laws give rights to newly established Environmental Protection Bureaux (EPBs) to fine polluting companies. It has been reported that during the first 8 months of the new law's introduction in 2015, there were 405 cases of groups fined for these separate offences, with fines worth a total of CNY 330 million.



▲ Air and water pollution in China

CHAPTER QUESTIONS

The number of cars in China is expected to grow from 90 million to 400 million by 2030.

- 1 Calculate the percentage increase in the number of cars in China between now and 2030.
- 2 Comment on the size of the external costs identified in this case.
- 3 Discuss the methods used by the Chinese government to reduce external costs.
- 4 Discuss one possible problem of using legislation to reduce external costs.

EXAM PRACTICE: 1.1 THE MARKET SYSTEM

A01 **1** Following a price reduction, the demand for a product remains unchanged. This suggests that demand for the product is: (1)

- A Inelastic
- B Elastic
- C Perfectly inelastic
- D Perfectly elastic

A02 **2** Which of the following is an example of an external cost? (1)

- A An increase in job opportunities
- B Higher levels of inflation
- C Pollution
- D Low economic growth

A01 **3** What is meant by a mixed economy? (2)

A01 **4** Define the term normal good. (1)

A01 **5** Define the term public good. (1)

A firm is considering a price increase for one of its products from US\$50 to US\$55. The quantity demanded at the existing price and the predicted demand at the higher price are shown in Table 1.

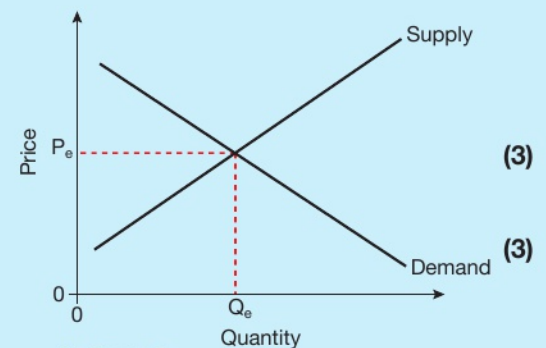
	QUANTITY DEMANDED
When price = US\$50	4 000 000
When price = US\$55	3 200 000

▲ Table 1

SKILLS PROBLEM SOLVING

A02 **6** Using the data in Table 1, calculate the price elasticity of demand for this product. You are advised to show your working. (2)

A02 **7** Using Figure 2, show the effects of rising production costs on the equilibrium price and quantity. Label the new curve, the new equilibrium price and quantity. (3)



▲ Figure 2

SKILLS CRITICAL THINKING

A02 **8** Explain how excess demand might exist in a market. (3)

In 2016, the Iranian government announced that it wanted to privatise its motor vehicle industry. The industry expects to produce 1.6 million cars by 2018 and 2 million by 2020. The sale of the motor car industry is hoped to attract foreign investors. The industry currently operates with outdated technology and needs modernisation to help take advantage of the large export market in the Middle East.

SKILLS CRITICAL THINKING ANALYSIS

A02 **9** With reference to the data above and your knowledge of economics, analyse the impact of the proposed privatisation on the government of Iran. (6)

A03

(Total = 20 marks)



1.2

BUSINESS ECONOMICS

Assessment Objective A01

Recall, select and communicate knowledge of economic terms, concepts and issues

Assessment Objective A02

Demonstrate understanding and apply economic knowledge using appropriate terms, concepts, theories and calculations effectively in specific contexts

Assessment Objective A03

Select, organise and interpret information from sources to investigate and analyse economic issues

Assessment Objective A04

Evaluate economic information to make reasoned judgements and draw conclusions

Businesses play a huge role in resource use. This section explores the nature of the resources used by businesses, how they organise production, their efficiency in production and how their costs behave in relation to output. The calculation of different costs, revenue and profit will also be discussed. This section also looks at the degree of competition in different markets or industries and the advantages and disadvantages of different market structures.

Specific attention is paid to the role of labour in production. Factors affecting the supply and demand for labour, wage determination, the importance of labour to businesses and the role played by trade unions are all covered. Finally, it is possible for business activity to have a negative impact on people, the environment and the economy. Therefore, the ways in which governments can intervene and deal with such problems is also discussed.

14 THE FACTORS OF PRODUCTION AND SECTORS OF THE ECONOMY

LEARNING OBJECTIVE

- Understand the four factors of production: land, labour, capital and enterprise
- Understand the different sectors of the economy: primary, secondary and tertiary
- Understand the changes in the importance of these sectors in terms of employment and output over time in developing and developed economies

GETTING STARTED

Businesses use a range of resources to make goods or deliver services. Examples include raw materials, components, buildings, energy, tools, equipment, machinery and people. Businesses will try to make the best use of these resources to help keep costs down and become more efficient. Look at the example below.

CASE STUDY: LG ELECTRONICS

LG Electronics is a large South Korean electronics company. It employs over 80 000 people in operations in over 100 different countries. The company is divided into four key divisions:

- home entertainment
- mobile communications
- home appliances, such as televisions and refrigerators
- vehicle components.

In 2015, the company enjoyed revenue of US\$48 800 million – slightly lower than the previous year.



▲ Resources used by LG Electronics

- 1 What resources does LG Electronics use in its production activities?
- 2 What is the size of LG's workforce?
- 3 What might be the impact on LG Electronics if resources become more expensive?

WHAT IS PRODUCTION?

SUBJECT VOCABULARY

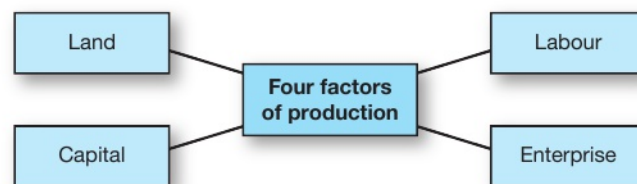
factors of production resources used to produce goods and services, which include land, labour, capital and enterprise

production process that involves converting resources into goods or services

Production is a process that involves converting resources into goods or services. These goods and services are provided to satisfy the needs and wants of people. Some examples of production include:

- a baker using flour, yeast, salt and water to make bread
- a large computer manufacturer using people to assemble components in a factory to make laptop computers
- a dentist using surgical instruments to extract a diseased tooth
- a taxi driver using a car to transport a family from their home to an airport.

All of these examples involve using a range of resources to produce goods or provide services. Economists put these resources into different categories called the four **factors of production**. These are summarised in Figure 14.1.



▲ Figure 14.1 Four factors of production

LAND

Businesses often require a plot of land on which to locate or operate their premises. For example, a large supermarket may require one or more hectares of land on the outskirts of a town to locate a large store with car parking facilities. However, land also includes natural resources, such as coal, oil, iron ore, rainwater, forests, rivers, and fertile soil.

- Some of the land resources used by businesses are *non-renewable*. This means that once they have been used they cannot be replaced. Examples include mineral deposits like coal, oil, diamonds and limestone. It is likely that one day these resources will completely run out.
- *Renewable* land resources are those like fish, forests and water, which are replaced by nature. These resources should not run out but there is a risk that if some of them are not protected or over exploited they could disappear.

LABOUR

Labour is the workforce in the economy. Manual workers, skilled workers and managers are all members of a nation's workforce. The quality of individual workers will vary considerably. Each worker is unique, possessing a different set of abilities, characteristics, skills, knowledge, intelligence and emotions. The value of an individual worker to a business is their **human capital**. It is possible to increase the value of human capital through training and education. This will help to make workers more productive.

CAPITAL

Capital is often said to be an artificial resource because it is made by labour. There are two types of capital.

- **Working capital or circulating capital**, which refers to stocks of raw materials and components that will be used up in production. It also includes stocks of finished goods that are waiting to be sold. Retailers such as supermarkets and chain stores often hold large quantities of stocks because they specialise in selling finished goods.

DID YOU KNOW?

Less than 7 per cent remains of Brazil's Atlantic Forest, which once covered 130 million hectares. Expanding urban areas, increased agricultural and industrial development threaten this rich, endangered forest.

SUBJECT VOCABULARY

human capital value of the workforce or an individual worker

labour people used on production

working capital or circulating capital resources used up in production such as raw materials and components

SUBJECT VOCABULARY

fixed capital stock of 'man-made' resources, such as machines and tools, used to help make goods and services

entrepreneurs individuals who organise the other factors of production and risk their own money in a business venture

- **Fixed capital**, which refers to the factories, offices, shops, machines, tools, equipment and furniture used in production. It is fixed because it will not be converted into a final product. Fixed capital is used in production to convert working capital into goods and services. A company like Honda would have very large stocks of fixed capital because their production methods involve using large amounts of hi-tech machinery.

ENTERPRISE

Entrepreneurs play a special role in the economy. They are responsible for setting up and running businesses. Without them production would not take place. But what exactly do entrepreneurs do?

- **They come up with a business idea:** This might involve the production of a completely new product. However, this is unusual. Most new businesses supply goods or services that are currently produced by others. That said, an entrepreneur might feel that there is a gap in the market for a slightly different product, or that it is possible to supply exactly the same product more effectively. For example, an entrepreneur might open a new restaurant in a city centre when there are dozens already trading. However, a different cuisine might be offered, such as Lebanese or Malaysian.
- **They are business owners:** They usually provide some money to help set up a business and are responsible for its direction. For example, a business owner might decide to expand the business in the future or extend the range of products.
- **Entrepreneurs are risk-takers:** For example, they are likely to risk their own money in the venture. If the business collapses, they may lose some or all of their money. However, if the business is successful they may make a lot of profit. But when they start up, they do not know what will happen – they are taking a risk.
- **Entrepreneurs are responsible for organising the other three factors of production:** They have to buy and hire other resources such as raw materials, tools, equipment and labour. Entrepreneurs need to use a range of skills such as decision making, people management, time management and financial judgement to organise production factors effectively.

LABOUR- AND CAPITAL-INTENSIVE PRODUCTION

SUBJECT VOCABULARY

capital intensive production that relies more heavily on machinery relative to labour

labour intensive production that relies more heavily on labour relative to machinery

Some firms use relatively more labour than capital when producing goods and services. Therefore, production is said to be labour intensive. For example, in China, labour is very cheap and many firms choose **labour-intensive** production methods. The provision of services is also generally labour intensive. In contrast, if relatively more capital is used than labour, production is said to be **capital intensive**. Firms in Western economies often favour capital-intensive production methods because labour is more difficult to manage. The production of FMCGs often relies on heavily automated plants.

DID YOU KNOW?

Some economies rely heavily on migrants when increasing production. For example, during the 2000s, large numbers of Eastern Europeans moved to Germany looking for work. Many of them were employed in the service industries to help increase production.

ACTIVITY 1

CASE STUDY: ALONSO CORTEZ

Alonso Cortez set up a small bus company to provide an express passenger transport service from Madrid city centre to Madrid Barajas International Airport, Spain. He invested €20 000 in the venture and employed two drivers to work for him. He spent €10 000 on a 50-seater coach and rented a small office in the bus station. He also purchased a computer, mobile phones for his drivers and some office furniture.



▲ An airport bus service

- 1 Suggest **two** examples of capital that Alonso will use.
- 2 Why is Alonso Cortez an entrepreneur? Use evidence in this case to support your answer.

PRIMARY SECTOR

SUBJECT VOCABULARY

primary sector/industry production involving the extraction of raw materials from the earth

The economy is divided into different sectors. In developed countries, such as the USA and Germany, most businesses provide services. They may be fitness centres, insurance brokers, retailers or provide services for businesses, such as market research or IT support. In some countries, such as China, there are large numbers of manufacturers. Finally, in less developed countries, many businesses concentrate on producing agricultural goods. Economic activity is classified into three sectors. In the **primary sector**, business activity involves extracting raw materials from the earth. Here are some examples.

- **Agriculture** involves a range of farming activities. It is probably the most important primary sector activity for most countries. Most agriculture is concerned with food production. However, other examples include decorative or exotic products, such as cut flowers, nursery plants and tropical fish.
- **Fishing** involves netting, trapping, angling and trawling fish. It also includes catching or gathering other types of seafood, such as mussels, prawns, lobsters, crabs, scallops and oysters. China is the world's largest fish producer.
- **Forestry** involves managing forests to provide timber for wood products. Modern forestry also involves protecting the natural environment, providing access and facilities to the public and managing areas for wildlife.

- **Mining and quarrying** involves the extraction of raw materials such as coal, iron ore, copper, tin, salt and limestone from the ground. This sector also includes the extraction of oil and gas. Saudi Aramco, the largest oil producer in the world, is an example of a primary sector business, as it extracts oil.

SECONDARY SECTOR

SUBJECT VOCABULARY

assembly plants factory where parts are put together to make a final product

secondary sector/industry production involving the processing of raw materials into finished and semi-finished goods

In the **secondary sector**, business activity involves converting raw materials into finished or semi-finished goods. All of manufacturing, processing and construction lie within this sector. Secondary sector business activities include metalworking, car production, textile production, chemical and engineering industries, aerospace manufacturing, energy utilities, engineering, food processing, construction and shipbuilding.

Some businesses focus on the production of semi-finished goods (sometimes called intermediate goods or producer goods). These goods are sold to other businesses and used as inputs for the production of final goods, which are then sold to consumers. Examples of semi-finished goods might include the parts used in **assembly plants** to make motor cars such as steering wheels, car seats, brakes, light fittings, engines, electric cables, switching mechanisms and exhaust systems. A single car may use around 30 000 different parts in assembly.

In many developed countries, the secondary sector has declined in recent years. This is discussed in more detail below.

TERTIARY SECTOR

SUBJECT VOCABULARY

tertiary sector/industry production of services in the economy

The **tertiary sector** involves the provision of a wide variety of services. Some examples are given below:

- **commercial services:** freight delivery, debt collection, printing and employment agencies
- **financial services:** banking, insurance, investment advice and pensions
- **household services:** plumbing, decorating, gardening and house maintenance
- **leisure services:** television, tourism, hotels and libraries
- **professional services:** accountancy, legal advice and medical care
- **transport:** train, taxi, bus and air services.

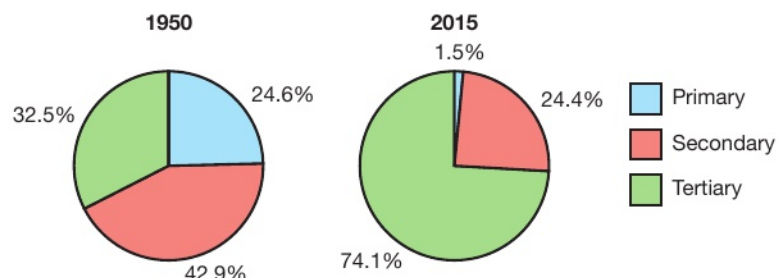
CHANGES IN THE IMPORTANCE OF DIFFERENT SECTORS

SUBJECT VOCABULARY

de-industrialisation decline in manufacturing

The number of people employed in each sector does not stay constant over time. Different sectors grow and decline according to economic and social changes. In the UK, before the Industrial Revolution began in the late 18th century, most production was in the primary sector. During the 19th century, secondary production expanded rapidly as manufacturing grew during the Industrial Revolution.

However, in the last 60 years, the tertiary sector has started to expand at the expense of both agriculture and manufacturing. The decline in manufacturing is called **de-industrialisation**. Figure 14.2 shows the pattern of employment in the primary, secondary and tertiary sectors in Germany between 1950 and 2015. Similar patterns can be identified in other developed nations.



▲ Figure 14.2 Employment by sector in Germany, 1950 and 2015

Why has manufacturing declined in developed countries while services have grown?

- People may prefer to spend more of their income on services than manufactured goods. There has also been a decline in demand for the goods produced by some of the traditional industries in manufacturing, such as shipbuilding and textiles.
- There is fierce competition in the production of manufactured goods from developing countries such as Brazil, China and India.
- As countries develop, their public sector grows. Since the public sector mainly provides services, this adds to the growth of the tertiary sector.
- Advances in technology mean that employment in manufacturing falls because machines replace people.

ACTIVITY 2

CASE STUDY: OLIVE OIL PRODUCTION

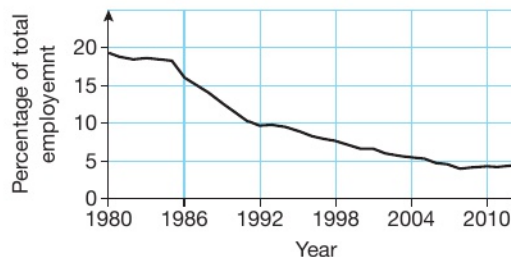
The largest olive growing region in the world is Andalucía, in southern Spain. Many of the growers in this region are owned and run by small family businesses. The Casillas family grow olives on their farm near Cordoba. Each year they sell their harvest to a local business that processes the olives into oil, much of which is exported. Harvest time between November and March is a very busy time for the family. They usually employ about 15 villagers to help out. However, Marco Casillas has recently thought about investing in some harvesting machinery to reduce labour costs and remain competitive.



▲ The olive harvest



▲ Processing olives for oil



▲ Figure 14.3 Spanish employment in agriculture (as a percentage of the total employed), 1980–2013

- 1 What is the difference between the primary and the secondary sectors? (Use examples from this case study.)

Look at Figure 14.3.

- 2 What has happened to the number of people employed in agriculture in Spain since 1980?
- 3 Describe **one** possible reason for the pattern described in (2).

DEVELOPED AND DEVELOPING COUNTRIES

There are some significant differences in the structure of economies in developed and developing countries. In most developed countries, the primary sector is much less important than the tertiary sector. Only a small percentage of the workforce is employed in the primary sector. In many developing countries, the secondary sector is now growing with some expansion of the tertiary sector. For example, many developing countries in Asia are beginning to manufacture goods on a large scale and to export them to developed countries. In very undeveloped countries, such as some African states, most people are still employed in the primary sector with weak growth in manufacturing and services.

Figure 14.4 shows employment in the different sectors of the economy for two countries – Tanzania and Japan. Clearly, Japan, which is the most developed nation of the two, employs fewer people in agriculture and many more in services than Tanzania.

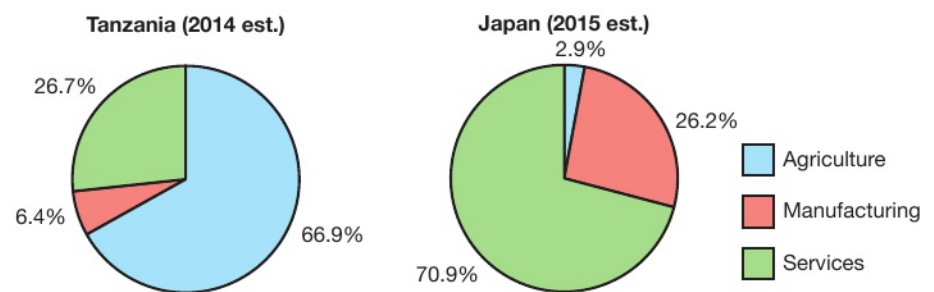


Figure 14.4 Employment by sector, Tanzania and Japan

MULTIPLE-CHOICE QUESTIONS

- ▶ 1 Which of the following businesses operate in the secondary sector?
 - A Santander
 - B Qatar Airways
 - C Ford Motor Company
 - D McDonald's
- ▶ 2 Which of the following is a factor of production?
 - A Dental treatment
 - B Wages
 - C Birthday card
 - D Enterprise

ECONOMICS IN PRACTICE

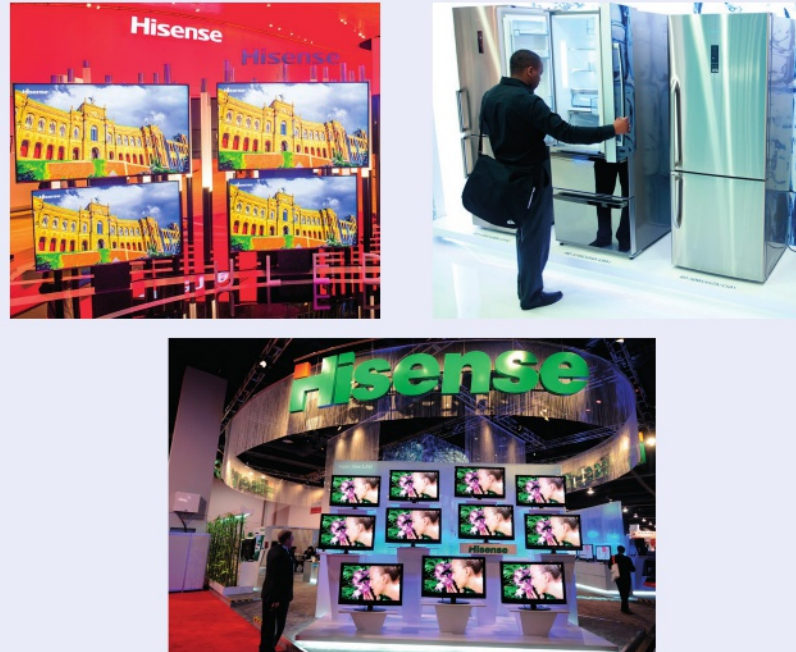
CASE STUDY: HISENSE

China is well known for its manufacturing capability. The country has many thousands of manufacturers that make a wide range of goods, which are sold all over the world. China has enjoyed a competitive advantage in manufacturing in the last 30 years due to its cheap and large supply of labour. However, producers in other parts of the world are now taking market share away from China as wages in the country are starting to rise.

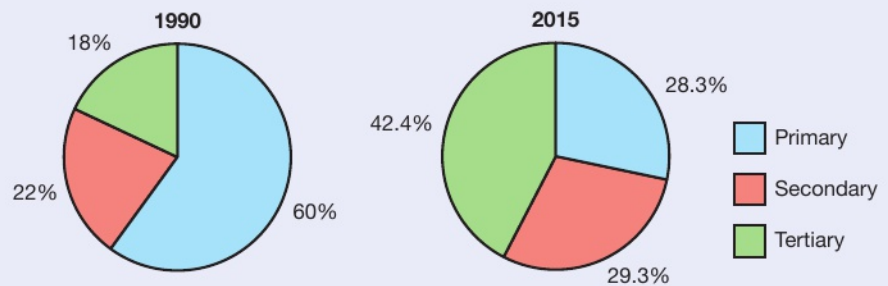
One very large Chinese manufacturer is the state-owned company Hisense. Hisense makes white goods, such as washing machines and refrigerators, as well as electrical goods, such as televisions, laptops, mobile phones and many other related products. Hisense has a large number of factories in both China and overseas. However, Hisense also provides a range of services, such as product design, information

technology services and property management. Hisense has recently opened two new research and development centres to help speed up product development.

In common with many other countries in the world, the pattern of business has changed in China over time. Figure 14.4 shows the proportion of people in China employed across the primary, secondary and tertiary sectors in 1990 and 2015.



▲ Products made by Hisense



▲ Figure 14.5 Employment by sector in China, 1990 and 2015

CHAPTER QUESTIONS

- 1 Suggest two renewable resources likely to be used by Hisense.
- 2 What is the difference between secondary and tertiary production? (Use examples from the case study.)
Look at Figure 14.5.
- 3 What evidence is there to suggest that China's economy has become more balanced since 1990?
- 4 Describe what de-industrialisation is.
- 5 Discuss the main causes of de-industrialisation.

15 PRODUCTIVITY AND DIVISION OF LABOUR

LEARNING OBJECTIVE

- Understand how to define productivity
- Understand the factors that affect productivity: land, labour and capital
- Understand how to define division of labour
- Understand the advantages and disadvantages of the division of labour to workers and businesses

GETTING STARTED

It is important for businesses to make the best possible use of resources during production. This will help keep costs down, raise efficiency and improve their competitiveness in the market. One approach is to make better use of workers to improve labour productivity. Employing specialist labour and training workers can achieve this. Look at the example below.

CASE STUDY: RED CARNATION HOTELS

Red Carnation Hotels is a privately owned, family-run luxury hotel group with 17 hotels on four different continents. The company has a reputation for treating its staff very well. It came third in the *Sunday Times* best companies to work for in 2016. It holds an Investors in People Gold Award and has a staff turnover rate that is far below the industry average. The company is committed to providing high-quality training. The hotels offer very high standards of personal service to guests, which the owners believe can only be delivered if people are given personalised training. In addition to basic training, Red Carnation Hotels offers learning opportunities that are internationally recognised beyond its own organisation. The company encourages staff to develop new skills that helps to motivate them, so keeping their service to guests at the highest level. Workers can get additional training to help career development and the business employs extra people so staff can be released from duty to carry out this training. Red Carnation Hotels runs more than 80 of its own training courses that include:

- foundation skills for team members
 - foundation skills for managers
 - technical skills for specialist jobs
 - developmental skills
 - college sponsorships.
- 1 Suggest **two** possible examples of specialist workers at Red Carnation Hotels.
 - 2 Describe **one** advantage of employing specialist workers.
 - 3 Discuss the importance of training at Red Carnation Hotels.



▲ Training at Red Carnation Hotels

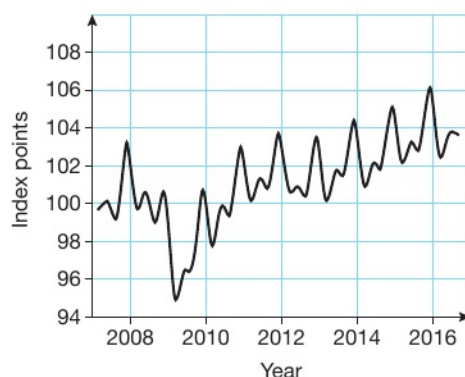
PRODUCTIVITY

SUBJECT VOCABULARY

productivity rate at which goods are produced, and the amount produced in relation to the work, time, and money needed to produce them

Businesses can produce more output if **productivity** can be raised. Productivity is the output per unit of input. For example, the productivity of labour is the *output per worker*. It can be calculated by dividing total output by the number of workers employed. If a car manufacturer produced 24 000 cars in a year with a workforce of 2000, labour productivity would be 12 cars per worker ($24\,000 \div 2000$).

Raising productivity in an economy is highly desirable. It means that more goods and services can be produced with the same, or fewer, resources. Countries are likely to measure and monitor productivity levels in their economy. Figure 15.1 shows the pattern of productivity levels in the EU between 2006 and 2016. The graph clearly shows that productivity has increased over the period. The dip in productivity in 2009 was the result of the global financial crisis, which hit the EU quite hard. Over time, firms try to increase productivity because they will lower their costs and make more profit.



▲ Figure 15.1 EU productivity, 2006–16

FACTORS AFFECTING PRODUCTIVITY

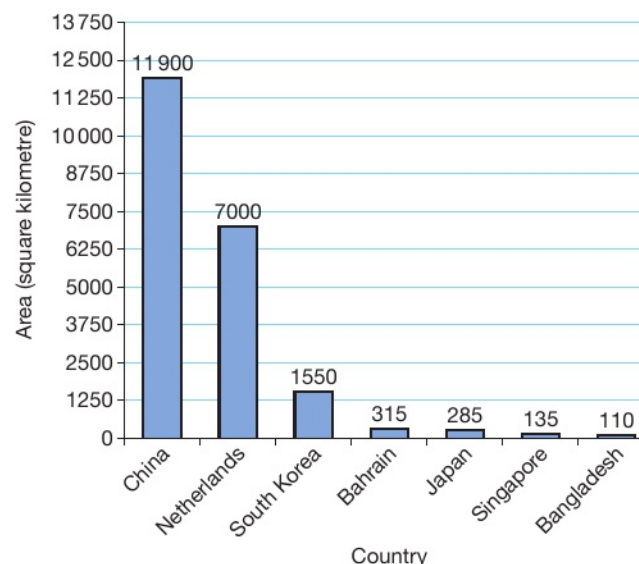
Productivity can be improved if businesses make better use of their resources. There are a number of ways of raising the productivity of production factors, some of which are outlined below.

LAND

The quality of land varies. Some is fertile and can be used to grow crops or farm cattle. Other land is dry or mountainous and is almost useless. However, measures can be used to make agricultural land more productive.

- **Fertilisers and pesticides:** Fertilisers are chemicals given to plants to improve their health and appearance, and raise crop yields. Pesticides are used to kill pests. However, pesticides and some fertilisers can harm people, wildlife and the environment. This is why there are strict controls in place over their sale and use.
- **Drainage:** Some areas of land are unproductive because they are flooded. Drainage can be used to improve the flow of water off this land and thereby make it more productive. A few years ago, with funding help from the World Bank, Uzbekistan set up a major drainage project in the Aral Sea Basin. It was hoped the project would increase the productivity of agriculture in the region and improve the water quality of the Amu Darya River.
- **Irrigation:** This involves redirecting water from natural sources, such as rivers, lakes or streams, to land that needs more water to become more productive. In crop production, it is mainly used in dry areas and in periods of rainfall shortages but also to protect plants against frost. Irrigation systems are used in many parts of the world.

- **Reclamation:** In some circumstances, it is possible to create new land from oceans, riverbeds or lakebeds. Clearly, if more fertile land can be found to grow crops, the productivity of the earth's land will rise. To reclaim land water is drained from wetlands. The graph in Figure 15.2 shows that China leads the world in land reclamation, with an extra 11 900 square kilometres of land to date. About 65 per cent of the tidal flats around the Yellow Sea, the Yangzi lowlands and many parts of Shanghai and Wuhan is reclaimed land. Hong Kong International Airport was also built on reclaimed land.
- **Genetically modified crops:** Land productivity has been increased recently by using genetically modified (GM) crops. Producing GM plants involves transferring genes and DNA from one organism to another. This results in plants that are less likely to be affected by disease, may produce higher yields and, in some cases, more appealing to consumers. However, there has been some opposition to the development of GM crops because genetic engineering is unpredictable. By adding genes from organisms that have never been eaten as food, new proteins are introduced into food chains. There is concern that these could cause allergic reactions or other negative health effects.



▲ Figure 15.2 Land reclaimed by the top seven countries with reclaimed land

LABOUR

If the quality of human capital can be improved, there will be gains in labour productivity.

- **Training:** One way to improve the quality of human capital is to invest in training. Training involves increasing the knowledge and skills of workers so they can do their jobs more effectively. Training is important because it allows employees to acquire new skills, improve existing ones, perform better and be better leaders. It also helps to improve employee motivation so productivity will be higher. It is also important since training involves, in part, teaching new staff how to work safely in their new environment.

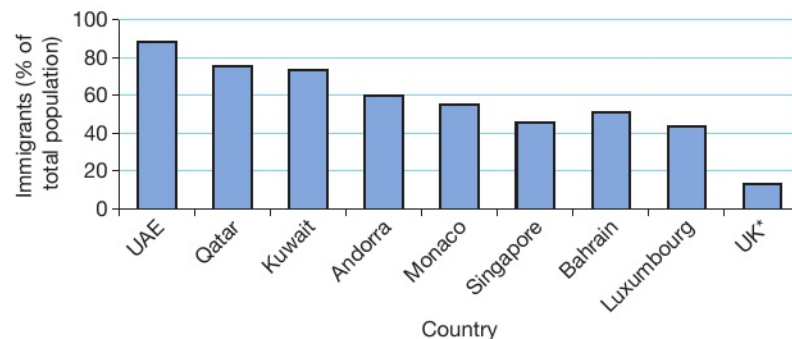
The government can help to improve the quality of human capital by investing in the education system. This might involve providing more equipment for schools and improving the quality of teaching. To equip young people with the skills needed in the workplace, a government might invest more in vocational education. Firms can also improve the productivity of their workers by providing their own training. In 'Getting started', Red Carnation Hotels is an example of a business committed to the training of its workers. The company offers its employees about 80 different training courses.

SUBJECT VOCABULARY

job rotation practice of regularly changing the person who does a particular job

piece rate amount of money that is paid for each item a worker produces, rather than for the time taken to make it

- **Improved motivation:** If people are motivated at work they will be more productive. One way of motivating staff is to use a financial incentive scheme such as **piece rates**, which involves paying workers according to how much they produce. However, some workers are not motivated by money so non-financial incentives might be needed. For example, a firm might use **job rotation**, which involves an employee changing tasks from time to time. If people are trained to do different jobs, their time at work may be more interesting because there is more variety. They may be less bored and therefore better motivated.
- **Improved working practices:** The way labour is organised and managed can affect productivity. Working practices are the methods and systems of work that employees are expected to adopt when taking on a job. Labour productivity has been improved significantly by adopting new working practices. For example, it may be possible to change the factory layout by moving workstations or reorganising the flow of production. Such changes can improve labour productivity because workers may not have to move around as much, for example.
- **Migration:** It might be possible to improve the quality of human capital by attracting skilled workers from overseas. If immigrants are well trained and highly skilled then an economy is likely to become more productive as a result of their presence in the labour market. However, many immigrants are not skilled but still make a positive contribution to productivity. This may be because an untrained migrant childminder might release a highly skilled parent for work, for example. Many countries in the world openly attract large numbers of overseas workers. Figure 15.3 shows a selection of countries and their reliance on immigrant workers. The Middle East relies particularly heavily on immigrant labour.



▲ Figure 15.3 Immigrant levels in a selection of countries, 2015

Note: *2014

CAPITAL

Improvements in productivity often arise because of the introduction of new technology. Improvements may occur because more capital is employed, possibly at the expense of labour, or because new technology is more efficient than existing technology. Advances in technology have helped improve productivity in all three sectors of the economy.

- **Primary sector:** In agriculture, for example, the use of machinery such as tractors, combine harvesters, lifting equipment and irrigation systems have helped to increase output, reduce waste and improve working conditions. Chemicals and pesticides have raised crop yields and biological research has developed plants that are less likely to suffer from diseases.
- **Secondary sector:** New technology has featured significantly in manufacturing. Many factories and production lines employ complex plant and equipment. This has led to huge increases in productivity. One example includes the use of robots that can handle a lot of the repetitive work in

factories. Robots have reduced the need to employ people in jobs that were boring and demotivating. Another example is the use of computer numerically controlled (CNC) machines. These computerised machines come in a variety of forms. They may be involved in processes such as cutting, pressing, moulding, sewing and welding.

- **Tertiary sector:** The provision of services has historically been labour intensive but the use of technology is becoming more widespread. For example, in retailing there has been a huge growth in internet shopping in the last few years. In some supermarkets there are unstaffed checkout systems. The packaging used today is lighter, stronger and more attractive. In health care, there have been dramatic technological advances in medicine and surgical techniques that have improved productivity. Developments in new vaccines and drugs have reduced patients' suffering and cured some serious diseases. Surgeons can carry out surgery using lasers, viewing the operation on a screen with the use of fibre optic cables.

ACTIVITY 1

CASE STUDY: PRODUCTIVITY IN COFFEE GROWING

The main species of coffee grown around the world are Arabica and Robusta. The world famous Kenyan Arabica, which is mild and high in quality, is grown on rich mountain soils. Here, the climate is ideal for coffee growing. The temperature range does not exceed 19°C (35°F) and the rainfall is evenly distributed throughout the year. Kenya's coffee growing regions are to be found on broad and gently rounded hills. The fertile soil is deep and well drained.

One coffee grower, Bernard Chukwu, is experienced and successful. He employs 24 workers on his estate and in 2015 produced a total of 380 sacks of coffee beans. However, in 2016, Bernard introduced a financial incentive scheme for workers and as a result production rose to 450 sacks. The number of workers he employed also fell in 2016 to 22.



▲ Coffee harvesting in Kenya

- 1 Calculate the labour productivity on Bernard's estate in 2015 and 2016.
- 2 What is the possible reason for the change in labour productivity on Bernard's estate?
- 3 How might farmers improve the productivity of land? Give two methods in your explanation.

THE DIVISION OF LABOUR

SUBJECT VOCABULARY

division of labour breaking down of the production process into small parts with each worker allocated to a specific task

specialisation production of a limited range of goods by individuals, firms, regions or countries

In many businesses, the production process is broken down into small parts and each worker is allocated a specific task. This is called the **division of labour**. It allows people to concentrate on the task or skill at which they are best. For example, in house construction, specialists are often employed throughout the whole construction process. A building contractor may employ specialist workers, such as bricklayers, electricians, plumbers, roofers, carpenters, painters, decorators, glaziers and labourers. It is argued that **specialisation** raises efficiency in firms and the economy.

DIVISION OF LABOUR AND THE WORKER

An individual worker will benefit from focusing on one specific work task but there will also be some disadvantages.

ADVANTAGES

Focusing on the same task allows the worker to become more skilled at doing that task. It is often said that 'practice makes perfect' and constant repetition of the same task will usually mean a worker will get better and better. Therefore, workers with well practised skills will be able to find employment more easily. Also, the more highly skilled they are, the more they are likely to get paid. Workers can also learn new skills or improve their existing ones. For example, an IT worker will need to keep updated with new technological developments. Finally, workers may enjoy more job satisfaction if they are highly skilled in a specialist task.

DISADVANTAGES

One of the main problems with specialisation is that the work can become boring because it is repetitive. This is most likely to happen if a particular task requires little skill. For example, workers employed on a production line responsible for an assembly task that only takes 30 seconds are likely to get very bored if that single task has to be repeated 120 times an hour, 960 times a day and nearly 4000 times a week! This boredom may lead to job dissatisfaction and affect motivation. Repetitive tasks can also have health implications for workers, such as joint wear. Another serious problem for workers that might be too specialised is the risk of unemployment.

DIVISION OF LABOUR AND BUSINESSES

Generally, if workers are more specialised, efficiency improves and businesses can make more profit. However, there are also some disadvantages regarding the division of labour for firms.

ADVANTAGES

- Efficiency is improved because, through specialisation, workers can perform tasks more quickly and more accurately. There are fewer mistakes and productivity (output per worker) will rise. People who try to perform a wide range of tasks may find it difficult to develop the skills needed to be excellent at each one. Therefore their productivity will be lower.
- A greater use of specialist tools, machinery and equipment is possible when workers specialise. For example, specialist CAD (computer-aided design) software is available for production designers, which they can use to improve efficiency.
- Production time is reduced because workers do not have to waste time moving from one task to another. This often involves moving around the workplace collecting tools, changing workstations and resetting machinery. Specialists are likely to remain at the same workstation repeating their task without the need to move around.

- The organisation of production becomes easier. This is because specialist workers can fit more easily into a structured system of production, such as a production line.

DISADVANTAGES

- One of the main problems of the division of labour is that if tasks are too repetitive and boring, people become dissatisfied and poorly motivated. This might result in poor-quality work, staff arriving at work late, increased rates of absence and high staff turnover. In the worst cases, people become detached and try to avoid work. This will obviously reduce productivity and have an impact on profitability.
- Problems can also occur if one stage of production depends on another stage. If one stage breaks down, all other stages may also have to be stopped. For example, if a specialist supplier of parts to an assembly plant fails to deliver, the whole assembly plant may have to stop production. This is called interdependence.
- Specialisation may result in a loss of flexibility in the workplace. For example, if a highly skilled and specialist worker is absent, and there is no one else with those skills, production may be disrupted.

ACTIVITY 2

CASE STUDY: PINTERS LTD

Pinters Ltd build catamarans and employ 20 staff. The production process has four stages.

- **Moulding:** Production begins with the body of the catamaran. Moulds are used to shape resin, cloth and fiberglass into separate parts. These are then attached together to create the fiberglass shell of the boats.
- **Trimming:** The windows, ports, hatches and other openings are cut out from the fiberglass shells and cleaned. Imperfections are ground out and repaired at a central inspection station.
- **Assembly:** The boat components are joined using assembly lines. The method of bringing the pieces to the stations where workers and their tools are located is extremely efficient in reducing wasted time.
- **Finishing:** The engine and electronics are tested as well as all the hulls for leaks. The finished boats then go to a final inspection stage where the entire craft is checked for quality.

Four workers are employed in each production stage and four in the office. One of the office workers is a specialist marketing manager, one is a specialist designer and the other two handle all the accounts and administration. The workers in each of the production stages require 2 years of on-the-job training. After that, they remain in the same area.



▲ Building a catamaran requires very specialist skills

- 1 What is meant by the division of labour? Use the example in this case to support your answer.
- 2 Suggest two disadvantages to Pinter's employees of specialising in one area of production.
- 3 To what extent do the advantages of the division of labour outweigh the disadvantages at Pinters Ltd?

MULTIPLE-CHOICE QUESTIONS

- ▶ 1 Which of the following is a non-financial method of motivating workers?
 - A Job rotation
 - B Profit sharing
 - C Piece rates
 - D Performance-related pay
- ▶ 2 Which of the following is a reason why specialist workers might get bored?
 - A The training is too lengthy
 - B Tasks can be very repetitive
 - C The pay is low
 - D There is no opportunity for social interaction at work

ECONOMICS IN PRACTICE**CASE STUDY: PENTANGLE PLASTICS**

Pentangle Plastics makes plastic components for mobile phones. The company is based in Shanghai, China, and has recently hired a new production manager. The purpose of the new role was to improve productivity. In 2014, the company produced 25 million units with a workforce of 50. In 2015, output fell to 24 million units with the same numbers employed. As a result, Pentangle Plastics was beginning to lose its competitive edge. The new manager promised to improve labour productivity within 12 months. The manager carried out a survey among staff and discovered that they were bored and poorly motivated. The manager also promised to make further productivity gains by introducing new technology over a 3-year period.



▲ A robot operating in the plastics industry

CHAPTER QUESTIONS

- 1** Describe what labour productivity is.
- 2** Calculate labour productivity at Pentangle Plastics in 2014 and 2015 to show that it has fallen.
- 3** Suggest two ways in which the production manager can improve motivation at the company by reducing boredom.
- 4** The new manager favours the introduction of robots in the factory. How might this reduce workers' boredom?
- 5** Discuss the advantages to
 - a** Pentangle Plastics and
 - b** the Chinese economy, of improving productivity at the factory.

16 BUSINESS COSTS, REVENUES AND PROFIT

LEARNING OBJECTIVE

- Understand how to define and calculate:
 - total revenue
 - total fixed costs
 - total variable costs
 - total costs
 - average total costs
 - profit

GETTING STARTED

Firms incur expenses when they produce goods and services. These expenses are called costs and are classified by economists according to how they behave when output changes. For example, when output rises some costs also rise. However, there are other costs that stay the same when output rises. Look at the example below.

CASE STUDY: GREENWAY CONSTRUCTION

Finders Construction is a specialist house builder. It is established family business with a successful 79-year trading history. The company buys plots of land and builds residential properties, which it markets to individuals. Like any other business, it incurs a wide range of costs. Some examples of costs incurred in the construction of a house include bricks, sand, cement, timber, pipes, glass, electrical wire, glass, plastic window frames and insulation materials. Other costs include: labour; machinery, such as cement mixers, lifting gear, vehicles; tools and equipment, such as spades, trowels, wire cutters, saws, power tools; protective clothing; computers; smartphones and office furniture at the company office.

Finders Construction employs 140 people and builds about 350 houses each year. In 2016, its total costs were US\$56 450 200 and total revenue from selling houses was US\$64 340 700.



▲ Construction at a building site

- 1 Suggest **four** costs incurred by Finders Construction that will rise when more houses are built.
- 2 Suggest **four** costs incurred by Finders Construction that remain unchanged when more houses are built.
- 3 Calculate the profit made by Finders Construction in 2016.

TOTAL FIXED COSTS

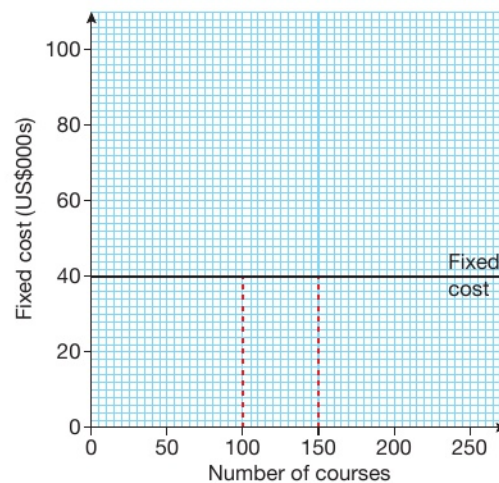
SUBJECT VOCABULARY

costs expenses that must be met when setting up and running a business

fixed costs (also known as overheads) costs that do not vary with the level of output

Costs can be classified according to how they behave when output changes. Some production costs remain the same whatever the level of output. These are called **fixed costs**. Examples of fixed costs include rent, business rates, advertising, insurance premiums, interest payments, and research and development costs. These costs will not increase even if a firm produces more output. However, fixed costs will still have to be met if the firm produces nothing. Fixed costs are sometimes called overheads.

Fixed costs can be shown on a graph. Figure 16.1 shows the total fixed cost for Frampton Training. This business provides training courses for HGV drivers. The business incurs total fixed costs of US\$40 000 p.a. The graph shows that fixed costs stay the same at all levels of output. If the business provides 100 training places, fixed costs are US\$40 000. If the number of places rises to 150, total fixed costs are still US\$40 000.



▲ Figure 16.1 Fixed costs for Frampton Training

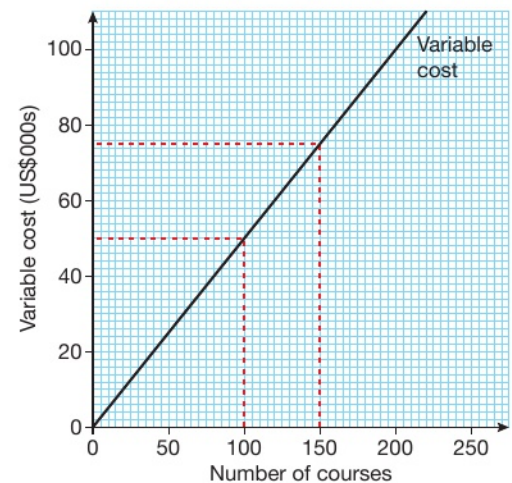
TOTAL VARIABLE COSTS

SUBJECT VOCABULARY

variable costs costs that change when output levels change

Production costs that change when the level of output changes are called **variable costs**. If a firm produces more output, variable costs will increase. Similarly, if output levels are cut, variable costs will fall. Examples of variable costs include raw materials, packaging, fuel and labour. If a firm produces nothing, variable costs will be zero. If the variable cost per unit is multiplied by the number of units produced, this will give the total variable cost, ie $TVC = VC \times Q$.

Figure 16.2 shows variable costs for Frampton Training. The business has variable costs of US\$500 per course. If 100 courses are provided, the total variable costs will be US\$50 000 ($100 \times \text{US\$}500$). If 50 extra courses are provided, total variable costs rise to US\$75 000 ($150 \times \text{US\$}500$). The graph shows that variable costs change whenever output changes.



▲ Figure 16.2 Variable costs for Frampton Training

TOTAL COSTS

SUBJECT VOCABULARY

total cost fixed costs and variable costs added together

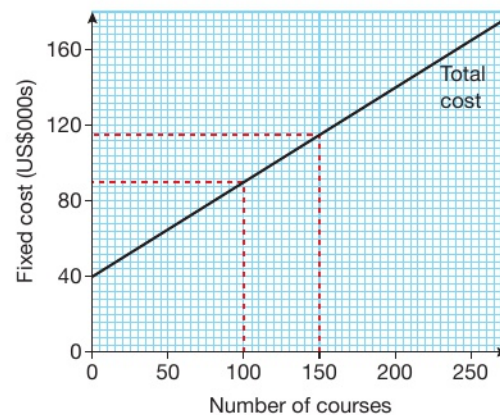
The cost to a firm of producing all output over a period is called **total cost**. Total cost (TC) can be calculated by adding total fixed costs (TFC) and total variable costs (TVC) together.

$$TC = TFC + TVC$$

If Frampton Training provides places for 100 training courses, total cost will be:

$$\begin{aligned} TC &= \text{US\$}40\,000 + (100 \times \text{US\$}500) \\ &= \text{US\$}40\,000 + \text{US\$}50\,000 \\ &= \text{US\$}90\,000 \end{aligned}$$

The total cost graph in Figure 16.3 shows that total cost increases from US\$90 000 to US\$115 000 when the number of courses provided rises from 100 to 150.



▲ Figure 16.3 Total cost for Frampton Training

ACTIVITY 1

CASE STUDY: KANDASAN CRICKET BATS

Kandasan Cricket Bats manufactures high-quality cricket bats. The company, which is based in Colombo, Sri Lanka, employs six skilled craftsmen. Table 16.1 shows some cost information for the business in 2015.

Rent	LKR 50 000 p.a.
Business rates	LKR 5000 p.a.
Other fixed costs	LKR 25 000 p.a.
Wood	LKR 30 per bat
Other raw materials	LKR 10 per bat
Labour	LKR 50 per bat
Other variable costs	LKR 10 per bat

▲ Table 16.1 Cost information for Kandasan Cricket Bats



▲ Making cricket bats

- 1 What is meant by a fixed cost? Use examples from the case to support your answer.

In 2015, Kandasani Cricket Bats produced 4800 bats.

- 2 Calculate the total cost of production.

In 2016, the rent increased to LKR 60 000.

- 3 Calculate the total cost of producing 6000 bats taking into account this cost increase.

AVERAGE COSTS

The average cost of production is the cost of producing a single unit of output. The formula for calculating average cost is:

$$\text{Average cost} = \frac{\text{Total cost}}{\text{Quantity produced}}$$

So, for example, the average cost of a training course provided by Frampton Training, if 100 places were provided, would be:

$$AC = \frac{TC}{Q} = \frac{\text{US\$90 000}}{100} = \text{US\$900}$$

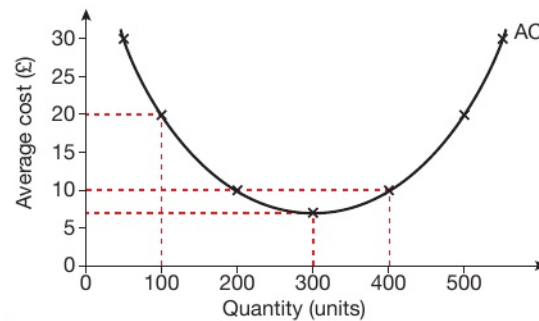
This means that each course provided to trainee HGV drivers costs Frampton Training US\$900.

THE AVERAGE COST CURVE

The average costs for a business can be presented graphically. An example is shown in Figure 16.4. The average cost curve is U-shaped, which means that as output increases, average costs fall at first, reach a minimum and then start to rise. At an output level of 100 units, the average cost is £20.

- If output is increased to 300 units, the average cost falls to £7.50. This is the minimum average cost in this example.
- If output is increased further still to 400 units, average costs are now higher at £10.

The reason for the shape of the average cost curve is discussed in Chapter 17 (pages 124–131).



▲ Figure 16.4 Average cost curve

TOTAL REVENUE

The amount of money a firm receives from selling its output is called total revenue. Total revenue can be calculated by multiplying the price of each unit by the number of units sold:

$$\text{Total revenue} = \text{Price} \times \text{Quantity}$$

If Frampton Training, in the earlier example, charged US\$1500 for its HGV training courses, the total revenue from the sale of 100 courses is given by:

$$\text{Total revenue} = \text{US\$1500} \times 100 = \text{US\$150 000}$$

This means that Frampton Training generated US\$150 000 of revenue from providing 100 places on its HGV driving course.

CALCULATING PROFIT

One of the main reasons why firms calculate their costs and revenue is to work out profit or loss. Profit is the difference between total revenue and total costs.

$$\text{Profit} = \text{Total revenue} - \text{Total costs}$$

The profit made by Frampton Training from providing 100 places is given by:

$$\begin{aligned} \text{Profit} &= \text{US\$150 000} \times 100 - (\text{US\$40 000} + \text{US\$50 000}) \\ &= \text{US\$150 000} - \text{US\$90 000} \\ &= \text{US\$60 000} \end{aligned}$$

It is possible to calculate the profit for a firm at any level of output using this method. If total costs exceed total revenue, then a loss is made.

ACTIVITY 2

CASE STUDY: JENKINS LTD

Jenkins Ltd manufactures electronic control systems that open and shut swing gates. Its most popular product is the underground system, which sells for £250. The systems are assembled in a factory using components supplied by firms nearby. In 2015, Jenkins sold 4500 systems. Total fixed costs for the year were £160 000 and variable costs were £120 per system.

In 2015, Jenkins produced and sold 4500 control systems.

- 1 Calculate the total cost.
- 2 Calculate the total revenue.
- 3 Calculate the profit.

In 2016, fixed costs and the price charged remained the same. However, variable costs rose to £140 per system.

- 4 Calculate the profit made in 2016 if 5200 systems were sold.

MULTIPLE-CHOICE QUESTIONS

- 1 If total cost is US\$35 000 000 and output is 100 000 units, what is average cost?
- A US\$100 000
B US\$35
C US\$350
D US\$3500
- 2 If variable cost is £10 per unit and fixed costs are £400 000, what is the total cost of producing 50 000 units?
- A £900 000
B £450 000
C £4 000 000
D £500 000

ECONOMICS IN PRACTICE

CASE STUDY: MAHABIR METALS

Mahabir Metals is a medium-sized engineering company. In the last 6 years, the business has begun to specialise in the production of signage, particularly road signs. Around 80 per cent of its business comes from government contracts. Mahabir Metals has benefitted from government investment in road building in India. One of its recent orders was for 1000 speed limit signs. Table 16.2 shows some cost information for the order. The fixed costs for the order were expected to be Rs600 000. Most of this cost was to pay for a specialist machine. The price of each sign would be Rs2500.

VARIABLE COSTS PER SIGN	RS
Sheet metal	200
Metal pipe	500
Clips and fastenings	200
Paint	100
Labour	300
Other variable costs	100

▲ Table 16.2 Cost information for an order



▲ Road signs

CHAPTER QUESTIONS

- 1 Describe what variable costs are.
- 2 For the new order, calculate (a) total variable cost and (b) total cost.
- 3 Plot fixed cost, variable cost and total cost on a graph. (Use a range of output of 0 to 1000 units.)
- 4 Calculate the profit made on the order.
- 5 Calculate the average cost of each sign.

Six months later, Mahabir Metals gets another order for 1500 speed limit signs. The variable costs remain the same but fixed costs are only Rs200 000. However, the government will only pay Rs1500 for each sign.

- 6 Consider whether Mahabir Metals should accept the order. Show all your calculations.

17 ECONOMIES AND DISECONOMIES OF SCALE

LEARNING OBJECTIVE

- Understand how to define economies of scale and internal economies of scale
- Understand the long run average cost curve and the impact economies and diseconomies of scale have on its shape
- Understand the types of internal economies of scale: purchasing, marketing, technical, financial, managerial and risk bearing
- Understand how to define external economies of scale
- Understand the types of external economies of scale: skilled labour, infrastructure, access to suppliers, similar businesses in the area
- Understand how to define diseconomies of scale
- Understand the types of diseconomies of scale: bureaucracy, communication problems, lack of control and the distance between top management and workers at the bottom of the organisation

SUBJECT VOCABULARY

scale size of a business

GETTING STARTED

Setting up a business and surviving is challenging. However, once a business is established, the owners often want it to grow. They want to increase the **scale** of the business. This means that they want to increase its size. One of the **benefits** of increasing the scale of operations is that certain costs start to fall. Look at the examples below.

CASE STUDY: GILLY'S SNACK SHACK

Gilly's Snack Shack sells sandwiches and other snacks from a kiosk by Grant Park, in central Chicago, Illinois, USA. It serves office workers, shoppers and tourists. Gilly's Snack Shack sells about 900 sandwiches a week. Gilly, the owner, buys sandwich ingredients from supermarkets and wholesalers. For example, the business buys about 20 loaves of bread per day at a cost of US\$1.80 each. Tomatoes cost US\$2.50 per kilogram and cheese is US\$7.00 per kilogram. Most of their sandwiches sell for US\$2.00. The business has a US\$5000 loan, which was taken out to help set up the business. An interest rate of 8.9 per cent is paid on the loan.

CASE STUDY: GF FOODS

GF Foods is a large catering company based in Chicago. It supplies sandwiches to supermarkets and sells about one million sandwiches a week. GF Foods employs 110 workers and buys ingredients direct from farmers and manufacturers. For example, it buys tomatoes from a local farm for US\$1.50 per kilogram and cheese for US\$5.00 per kilogram. It buys thousands of loaves of bread from a Chicago baker for US\$1.10 each. It sells sandwiches at an average price of US\$1.40 per packet. GF Foods pays 7.5 per cent interest on a US\$1 million loan.



▲ Sandwich production

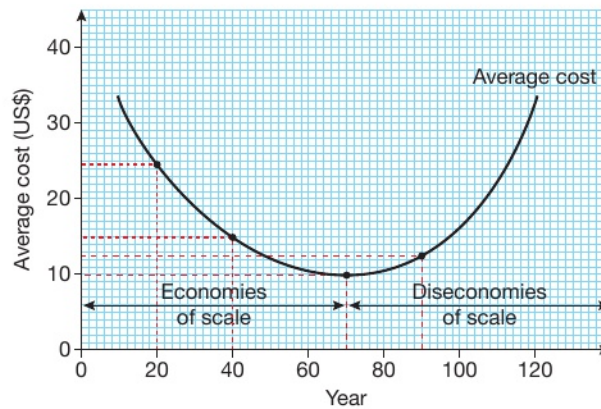
- 1 Which of the two businesses is the largest?
- 2 Which business has the lowest costs?
- 3 Which firm is likely to be the most efficient?
- 4 How might GF Foods benefit from its cost advantage?
- 5 In groups, draw up a list of the possible advantages that very large firms have over their smaller rivals. Present your ideas to the rest of the class.

ECONOMIES OF SCALE

Large firms can usually produce goods more cheaply than small firms. The size of a firm has an important effect on the average costs of production. As a firm increases its size, average costs start to fall. This is because of **economies of scale** and is shown in Figure 17.1. When the business is producing 20 000 units of output, the average cost is US\$25. If it raises output to 40 000 units, average costs fall to US\$15. The firm could carry on expanding and lower its average costs until it is large enough to produce 70 000 units. At this level of output average costs are minimised at US\$10 per unit. It is the ideal size because average costs are at an absolute minimum. At this level of output the firm is efficient and waste is avoided. If the firm grows beyond 70 000 units, average costs will start to rise. For example, if the firm increases its size and produces 90 000 units, average costs will now rise to US\$12.50 per unit. This is because of **diseconomies of scale**, which occur because of inefficiency.

SUBJECT VOCABULARY

diseconomies of scale rising average costs when a firm becomes too big
economies of scale falling average costs due to expansion



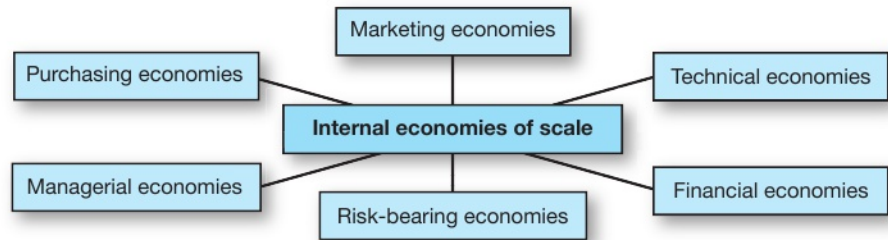
▲ Figure 17.1 Economies and diseconomies of scale

SUBJECT VOCABULARY

internal economies of scale cost benefits that an individual firm can enjoy when it expands

INTERNAL ECONOMIES OF SCALE

Internal economies of scale are the cost benefits that an individual firm can enjoy when it grows. The reasons why costs fall are summarised in Figure 17.2.



▲ Figure 17.2 Sources of internal economies of scale

PURCHASING ECONOMIES

Large firms that buy lots of resources get cheaper rates. Suppliers offer discounts to firms that buy raw materials and components in bulk. This is similar to consumers buying multi-packs in supermarkets – they are better value for money. **Bulk buying** is a purchasing economy. In ‘Getting started’ above, GF Foods was able to buy bread for US\$1.10 a loaf. However, Gilly’s Snack Shack was having to pay US\$1.80 because it was buying smaller quantities. In fact, all the purchases made by GF Foods were cheaper than those of Gilly’s Snack Shack for the same products.

MARKETING ECONOMIES

A number of marketing economies exist. For example, it may be cost effective for a large firm to run its own delivery vehicles. For a large firm, with lots of deliveries to make, this would be cheaper than paying a distributor. Marketing economies can occur because some marketing costs, such as producing a television advert, are fixed. These costs can be spread over more units of output for a larger firm. Therefore, the average cost of the advert is smaller for a large firm.

TECHNICAL ECONOMIES

Technical economies occur because larger factories are often more efficient than smaller ones. There can be more specialisation and more investment in machinery. One example of a technical economy is the way a large firm will make better use of an essential resource than a smaller firm. For example, a small engineering company may buy some CAD (computer-aided design) software for US\$1000. It is needed by the business but is only used for one

SUBJECT VOCABULARY

bulk buying buying goods in large quantities, which is usually cheaper than buying in small quantities

day a week. A much larger engineering company may buy the same software but use it every day of the week. Clearly, the larger company is making better use of the software and therefore its average cost will fall.

FINANCIAL ECONOMIES

Large firms can get access to money more cheaply. They also have a wider variety of sources to choose from. For example, a large limited company can raise money by selling shares. This option is not available to a sole trader. Large firms can put pressure on banks when negotiating the price of loans. Banks are often happier lending large amounts to large companies at lower interest rates. In 'Getting started', GF Foods was paying 7.5 per cent to borrow US\$1 million. In contrast, Gilly's Snack Shack was paying 8.9 per cent to borrow just US\$5000.

MANAGERIAL ECONOMIES

As firms expand, they can afford specialist managers. A small business may employ a general manager responsible for finance, human resources, marketing and production. The manager may find this role demanding and may be weak in some areas of the job. A large firm can employ specialists and, as a result, efficiency is likely to improve and average costs fall.

RISK-BEARING ECONOMIES

Larger firms are more likely to have wider product ranges and sell into a wider variety of markets. This reduces the risk in business. For example, many supermarkets have extended their product ranges to include household goods, consumer durables, books, a café, financial services, garden furniture, pharmaceuticals and clothes.

ACTIVITY 1

CASE STUDY: IKEA

IKEA is a Swedish multinational that designs and sells ready-to-assemble furniture, such as tables, chairs and beds. It also sells appliances and domestic products. IKEA operates about 500 large stores in nearly 50 different countries. Its own factories manufacture many of its product lines. One of the reasons for its success has been its ability to keep manufacturing costs down. IKEA is very large and is able to exploit economies of scale.

On the technical side, IKEA benefits from specialisation. It employs specialist workers in different parts of the world to produce different products and components. This division of labour allows average costs to be reduced since specialists are more efficient. IKEA also invests heavily in research and development. This allows the business to develop cost effective products and money-saving production techniques.

IKEA also exploits risk-bearing economies. Although the business first began trading in furniture, IKEA is now involved in other markets such as appliances and domestic products. It operates restaurants and food markets with many stores serving food throughout the day. It also provides childcare with some stores offering safe and supervised play areas. This growth in the business means that IKEA can benefit from good trading conditions in different markets. It can also cope with difficult trading conditions in one market by relying on sales in others.



▲ Inside an IKEA factory

- 1 Discuss how IKEA is exploiting (a) technical economies of scale and (b) risk-bearing economies of scale.

EXTERNAL ECONOMIES OF SCALE

SUBJECT VOCABULARY

external economies of scale cost benefits that all firms in an industry can enjoy when the industry expands

Sometimes all firms in an industry can enjoy falling average costs as the whole industry grows. This is called **external economies of scale**. External economies of scale are more likely to occur if an industry is concentrated in a particular region.

SKILLED LABOUR

If an industry is concentrated in one area, there may be a build-up of labour with the skills and work experience required by that industry. As a result, training costs will be lower when workers are recruited. It is also likely that local schools and colleges will provide vocational courses that are required by local industry.

INFRASTRUCTURE

If a particular industry dominates a region, the roads, railways, ports, buildings and other facilities will be shaped to suit that industry's needs. For example, a specialised industrial estate may be developed to help a local IT industry.

ACCESS TO SUPPLIERS

An established industry in a region will encourage suppliers in that industry to set up close by. Specialist marketing, cleaning, banking, waste disposal, distribution, maintenance and components suppliers are likely to be attracted to the area. All firms in the industry will benefit from their services, like the car industry in the Midlands in England, for example.

SIMILAR BUSINESSES IN THE AREA

When firms in the same industry are located close to each other, they are likely to cooperate with each other so that they can all gain. For example, they might work together to share the cost and benefits of a research and development centre, as high-tech businesses do in Silicon Valley, California, USA.

DISECONOMIES OF SCALE

Figure 17.1 shows that if a firm continues to expand beyond a certain point average costs eventually rise. This is because the firm suffers from diseconomies of scale. Average costs start to rise because aspects of production become inefficient. The possible reasons why this might happen are discussed below.

GENERAL VOCABULARY

bureaucracy system of administration that uses a large number of departments and officials

coordinate to organise people or things so that they work together well

BUREAUCRACY

Larger business rely more on **bureaucracy**. If a business becomes too bureaucratic, it means that too many resources are used in administration. Too much time may be spent filling in forms or writing reports. Also, decision making may be too slow and communication channels too long. If resources are wasted in administration, average costs will start to rise.

COMMUNICATION PROBLEMS

Some very large organisations employ hundreds of thousands of workers. They are likely to be spread all over the world. Workers in different countries speak different languages and have different cultures. There are also time differences between different global operations. This can make communication in an organisation challenging.

LACK OF CONTROL

A very large business may be difficult to control and **coordinate**. Thousands of employees, billions of pounds and dozens of plants all over the world can make running a large organisation demanding. There may be a need for more supervision and more layers of management, which will raise costs.

DISTANCE BETWEEN SENIOR STAFF AND SHOP FLOOR WORKERS

If a firm becomes too big, relations between workers and managers may worsen. There may be many layers of management between the chairperson at the top and the shop floor workers in a factory. As a result, senior managers might be so far removed from those at the bottom of the organisation that they may not be aware of their needs. This lack of understanding may result in many workers becoming demotivated. As a result, conflicts may occur and resources may be wasted resolving them.

ACTIVITY 2

CASE STUDY: VOLKSWAGEN

In 2015, Volkswagen (VW), the very large German car manufacturer, was caught falsifying emissions data on its diesel cars. VW had been fitting some special software in its diesel vehicles called a 'defeat device'. This fine-tunes the engine's performance so that nitrogen oxide emissions are limited when being tested. However, when the cars return to the road, the emissions levels rise again. This meant that the cars would pass the strict emissions test.

It appears that around 11 million cars were fitted with this device and since its discovery VW has suffered badly. For example, the value of the company fell by around €30 000 million following a flood of bad publicity across the world. A number of theories have been suggested to explain why this scandal was allowed to happen. Some analysts have suggested that the company is now too big and suffering from diseconomies of scale. Giant companies like VW, which employs over 500 000 employees, become huge bureaucracies rather than commercial organisations. Controlling and monitoring such vast operations, with factories, offices, warehouses and other operational facilities all over the world becomes a very challenging task for managers. Although economies of scale are crucial in the mass production of cars, some people think that a number of companies are beginning to experience diseconomies of scale – particularly when managing information in the organisation.

It is possible that VW has grown too big to manage. It has been claimed that the chief executive officer (CEO) of VW did not know about this activity. In such a large organisation, this might be true. It is unlikely that any CEO, however capable, committed and well-organised, could be in complete control of such a huge quantity of resources that are located all over the world.

To conclude, as businesses grow, at some point, the disadvantages of being big are eventually greater than the benefits. These costs may include:

- loss of control
- communications problems
- the need for more supervision and extra layers of management
- the increasing amounts of delegation
- the geographical spread of resources
- the near impossibility of establishing a common business culture
- employing a single unified IT system.

This may have been the cause of VWs current problems.



▲ A VW vehicle being tested for emissions

- 1 What is meant by diseconomies of scale?
- 2 Assess whether VW has experienced diseconomies of scale in its organisation.

MULTIPLE-CHOICE QUESTIONS

- ▶ 1 Employing a specialist cost accountant in a growing business is an example of which type of economy?
 - A Technical economy
 - B Risk-bearing economy
 - C Managerial economy
 - D Marketing economy
- ▶ 2 Internal economies of scale affect costs how?
 - A Falling total costs
 - B Rising average costs
 - C Rising variable costs
 - D Falling average costs

ECONOMICS IN PRACTICE

CASE STUDY: FLAMBOYANCE

Flamboyance is a clothes chain based in Singapore. It sells high-quality clothes, shoes and fashion accessories. It has an excellent reputation for good customer service and operates 21 shops in Singapore and a further 52 in other Asian countries. In 2012, Flamboyance employed a specialist marketing manager. The new manager raised the profile of the Flamboyance brand right across Singapore. As a result, the company grew quickly and became very profitable. Flamboyance buys most of its clothes and shoes from China.



▲ Inside a high-quality clothes store

In 2015, Flamboyance bought a clothes chain in the Middle East. It was thought that the company could further exploit economies of scale and make even more profit. However, there were some problems. Communications became difficult due to language and cultural difficulties. There was also a lack of employee understanding. Many of the staff did not seem to care whether the company succeeded or not. Some of the store managers also complained that the company was becoming too bureaucratic.

CHAPTER QUESTIONS

- 1 Describe what the term 'scale' in business is.
- 2 What effect will economies and diseconomies of scale have on Flamboyance's average cost?
- 3 Why is employing a specialist marketing manager an economy of scale?
- 4 Discuss whether or not Flamboyance has benefited from purchasing economies of scale.
- 5 Consider the extent to which Flamboyance is experiencing diseconomies of scale.

18 COMPETITIVE MARKETS

LEARNING OBJECTIVE

- Understand the advantages and disadvantages of competition to firms, consumers and the economy including:
 - efficiency
 - choice
 - quality
 - innovation
 - price

SUBJECT VOCABULARY

competition rivalry that exists between firms when trying to sell goods to the same group of customers

GETTING STARTED

Not all markets are the same. In some markets, lots of firms compete with each other to sell their goods to customers. They use a variety of methods, such as advertising, promotions and special offers, to encourage customers to buy their products. In other markets, a firm may face very little **competition**. Look at these examples.

CASE STUDY: ONATEL

Onatel is a communications company and is the only internet provider in Burkina Faso, a small country in West Africa. In October 2016, a strike by Onatel's employees cut all internet connections in the country for over a week. Arouna Ouédraogo, an information technology specialist in Burkina Faso, said people without the internet became desperate, rushing to his internet cafe with contracts to sign and documents to send. Unfortunately, he could not help them because there was no internet anywhere in the country. Some people were so desperate to get on the internet that they flew to Bamako, in neighbouring Mali, for access. Burkina Faso is one of the few African countries that have only one internet provider. Ouédraogo said that the internet was too expensive and the service was very poor. He argued that some competition was needed.



▲ Onatel is the only internet provider in Burkina Faso

GENERAL VOCABULARY

deregulation to remove or reduce the number of government controls on a particular business activity, done to make companies work more effectively and to increase competition

CASE STUDY: MILK PRODUCTION IN AUSTRALIA

The dairy industry employs about 38 000 people in Australia in around 6000 farms. Unlike many countries around the world, there is no legal control over the price milk processing companies pay farmers for their milk. Since **deregulation** in 2000/01, all prices within the industry are set by market forces. This means that all farmers supplying the market in a particular Australian state would expect to get much the same for a litre of milk. In 2016, farmers in New South Wales were getting around 50 cents a litre. This was slightly more than they were getting in 2010 when it was 48.7 cents.



▲ Dairy farming

- 1 How much competition exists in each of these markets?
- 2 How might consumers benefit from competition in a market?
- 3 In groups, identify five businesses in your area where you think there is a lot of competition, and five where you think there is very little competition. Present your ideas to the rest of the class giving the reasons for your choices.

WHAT IS A COMPETITIVE MARKET?

SUBJECT VOCABULARY

barriers to entry obstacles that might discourage a firm from entering a market

Competition is the rivalry that exists between firms when trying to sell goods in a particular market. In some markets, there is a lot of competition. In 'Getting started', the market for milk in Australia is very competitive, with around 6000 farms competing for customers. However, in other markets, there is very little competition. In 'Getting started', Onatel is the only internet supplier in the country of Burkina Faso. No other firm competes with Onatel. In a competitive market, there are likely to be some common features.

- There is a large number of buyers and sellers.
- The products sold by each firm are close substitutes for each other.
- Low **barriers to entry**, which means that it is fairly easy to break into the market. For example, it is not technically difficult or it does not require too much capital.
- Each firm has almost no control over the price charged. For example, if a firm tries to charge more than its rivals it is likely to lose business.
- There is a free flow of information about the nature of products, availability at different outlets, prices, methods of production and the cost and availability of production factors.

ACTIVITY 1

CASE STUDY: MARKET FOR CURRENCY

In any city in most countries it is possible to obtain foreign currency for a holiday abroad from a wide range of outlets. Banks, building societies, hotels, post offices, specialist exchange dealers and travel agents are some examples. It is also possible to buy foreign currency over the internet. The price charged by each supplier is very similar. Table 18.1 shows euro prices for AUD 5000 at a selection of outlets in a French city.

OUTLET	A	B	C	D	E	F
PRICE (€)	3497	3500	3509	3492	3494	3496

▲ Table 18.1 The prices of AUD 5000 in six outlets



▲ Foreign exchange outlet

- 1 Why is the market competitive in this case?
- 2 Which outlet would you recommend to someone buying Australian dollars?

COMPETITION AND THE FIRM

SUBJECT VOCABULARY

innovative commercial exploitation of a new invention

product differentiation attempt by a firm to distinguish its product from that of rival

Generally, firms do not welcome competition. Most firms would prefer to dominate the market and operate without the threat of rivals. If there is no threat from competition, a firm can usually charge a higher price. There is also less pressure to be efficient and **innovative**. This reduces the effort needed to survive and be successful. When faced with competition, firms have to offer products that give consumers value for money. This involves:

- operating efficiently by keeping costs as low as possible
- providing good quality products with high levels of customer service
- charging prices that are acceptable to customers
- innovating by constantly reviewing and improving the product.

One aspect of innovation is **product differentiation**. This means that firms try to persuade consumers that their product is different from those of rivals. For example, in Italian towns and cities there are likely to be large numbers of restaurants offering authentic Italian food all competing for customers. However, although each one is offering the same cuisine, there are likely to be differences in the service supplied by each restaurant. There may be differences in menus, food quality, atmosphere, decoration, customer service and location. Over time, each restaurant may be trying to develop their product so that it suggests to customers that it is different and better than rivals.

The main disadvantage to a firm operating in a competitive market is that the amount of profit made will be limited. In markets where competition is fierce, prices are likely to be lower and the potential for profit also lower. The total profit in the industry has to be shared between many firms.

ACTIVITY 2

CASE STUDY: THE FUNHOUSE

Queenstown is a small tourist destination in New Zealand. It has a population of around 18 000 and is famous for its adventure activities, such as snowboarding, jet boating, white-water rafting, bungee jumping, mountain biking, skateboarding, tramping, paragliding and skydiving. The town expects to get about 2 million visitors each year, which means that providing accommodation is an important source of income for many residents. However, competition for guests is fierce. In 2016, there were 118 businesses offering accommodation. These included hotels, motels, apartments, backpackers (lower cost hostels for backpackers) and holiday parks.

Ilene Chappell owns The Funhouse, a backpacker offering affordable accommodation for young adults. Even though competition is fierce, The Funhouse generates good profits for Ilene. The average occupancy rate for backpackers in Queenstown was 73 per cent in 2016. However, occupancy at The Funhouse was 79 per cent. The Funhouse considers itself innovative. It was one of the first businesses in Queenstown to use social media in its promotion. When Ilene took over The Funhouse in 2012, she introduced free sausage sandwiches for breakfast, a free bus service to the airport, a discount bar for guests, free lockers and free Wi-Fi. Ilene said that, 'Competition is good. It keeps you on your toes, every year we sit down and review our performance and try to come up with new ideas for the future. Next year we are going to offer free sunscreen and free mosquito repellent.' The accommodation rates at The Funhouse are slightly higher than rivals. However, Ilene said, 'when you offer free this, and free that, people love it, we get loads of recommendations through social media and the freebies are always mentioned.' Ilene also explained that offering free services actually helped to keep administration costs down.



▲ Bungee jumping in Queenstown

- 1 What evidence is there in the case to suggest that the accommodation market in Queenstown is competitive?
- 2 Discuss the main disadvantage to firms of competition.
- 3 Assess how firms, such as the Funhouse, might benefit from competition.

COMPETITION AND THE CONSUMER

Most consumers would argue that competition in business is desirable. This is because of the advantages that consumers enjoy from healthy competition.

- **Lower prices:** In a competitive market, firms cannot overcharge consumers. If one firm tries to raise its prices, it will lose a lot of its business. This is because the market is full of good substitutes and consumers can easily switch from one supplier to another.
- **More choice:** Competition means there are many alternative suppliers to choose from. Where possible, each supplier is likely to differentiate its product from those of rivals. This helps to widen choice even more. Competitive markets will also have a constant stream of new entrants offering fresh ideas and even more choice.
- **Better quality:** Firms that offer poor goods or services in a competitive market will lose business. Consumers are rational (see Chapter 2, pages 12–17) and will look for value for money. This means they consider both the price and the quality of products when deciding what to buy. Modern consumers are more aware and better informed than ever before.

There are also disadvantages to consumers of a highly competitive market.

- **Market uncertainty:** It could be argued that there may be some uncertainty or disruption in competitive markets. This is because unprofitable firms eventually leave the market. This means that some consumers might be inconvenienced.
- **Lack of innovation:** It could be argued that innovation in a competitive market might be lacking. This is because firms make less profit in competitive markets. As a result, they may not have enough profit to invest in product development.

COMPETITION AND THE ECONOMY

One of the main advantages of competitive markets is that resources will be allocated more effectively. This is because firms have to operate efficiently to survive. They are under pressure to keep their costs down so that their prices are lower.

It is also argued that firms in competitive markets are more innovative. This is because innovative firms can get a competitive edge over their rivals. This means that firms will develop new products, new production techniques, new technologies and new materials. The economy will benefit from this because people will have a better standard of living.

One of the main disadvantages of a highly competitive market is that resources might be wasted. One of the reasons for this is that some factors of production are often immobile. When firms cease trading in a competitive market, resources are released for alternative uses. People are made redundant and resources like machines, tools, equipment, land and buildings come up for sale. However, it often takes time for these resources to be reallocated.

MULTIPLE-CHOICE QUESTIONS

- ▶ 1 Which of the following is likely to be a benefit to the economy of competitive markets?
 - A Higher interest rates
 - B Better resource allocation because there is less waste
 - C Factors of production are more mobile
 - D Lower unemployment

- 2 Which of the following is a feature of a competitive market?
- A There are a limited number of sellers in the market
 - B Each firm has total control over the price charged
 - C There are lots of sellers in the market
 - D There are high barriers to entry

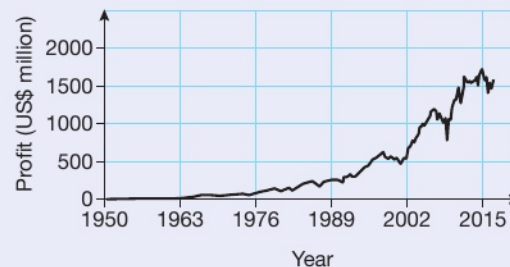
ECONOMICS IN PRACTICE

CASE STUDY: COMPETITION IN THE USA

US CORPORATE PROFITS

The graph in Figure 18.1 shows corporate profits made by companies in the USA between 1950 and 2016. The increase over the time period looks very impressive. For example, between 2000 and 2015, corporate profits rose by more than 200 per cent. The dip shown after 2015 should not be too worrying. It came during a period when the dollar was very strong (which would reduce the demand for exports) and the low oil price impacted negatively on energy firms. In the third quarter of 2016, US corporate profits were US\$1 575 400 million.

Corporate profits have risen in most rich countries over this period but the increase has been much higher in the USA. Along with the fall in the number of businesses operating in many sectors, this means the benefits of economic growth in the USA are being enjoyed by a relatively small number of people. This might explain why most US residents believe that the economy unfairly favours the rich and powerful. It might also explain the statement by 2016 US election Democratic candidates Hillary Clinton and Bernie Sanders that the economy is 'rigged'.



▲ Figure 18.1 US corporate profits, 1950–2016

US AIRLINE INDUSTRY

It has been argued in the past that US airlines were famous for two things – poor customer service and weak financial management. However, recently, US airlines made an annual profit of US\$24 000 million. Unfortunately, improved profits did not mean improved service for passengers. They have had to endure continued hidden charges, poor punctuality, shabby cabins, a lack of legroom in seats and poor in-flight food. Neither have customers benefitted from the recent drop in the price of aircraft fuel. Some argue that there is not enough competition in the industry. During the last decade, the number of operators in the market has fallen. Four airlines now dominate the domestic market.

US PHARMACEUTICALS INDUSTRY

The US pharmaceuticals industry was criticised in 2016 for some astonishing price increases.

- Mylan Pharmaceuticals increased the price of EpiPens (devices that deliver an emergency shot of epinephrine to someone suffering a potentially fatal allergic reaction) by 550 per cent from US\$94 to US\$608 since getting the selling rights in 2007.
- Turing Pharmaceuticals increased the price of Daraprim, an anti-malarial drug also used by HIV patients, by more than 5000 per cent.
- Valeant raised the price of Syprine, a blood-cleaning agent, by more than 3000 per cent.

The pharmaceutical companies blame pharmacies and the prescription system for not passing along the discounts they negotiate with manufacturers. However, it is argued that the drug companies are responsible for the massive price increases, not the middlemen. What is needed is more competition from generic drug makers (companies who produce non-branded drugs that are identical to branded drugs). Like Daraprim and Syprine, epinephrine is available in a generic form. At present, however, there is no generic version of the EpiPen injector for sale in the USA. One of the problems is that companies like Mylan keep rivals out of their market. For example, Mylan struck deals with potential competitors to delay them from seeking approval for generic versions of the EpiPen.

CHAPTER QUESTIONS

- 1 Describe what competition is.
- 2 Who might benefit from the increase in corporate profits in the USA?
- 3 Discuss the disadvantages to consumers when there is a lack of competition in a market. Use examples from the cases above in your analysis.

There should be more competition between businesses in the USA.

- 4 To what extent do you agree with this argument? Make a clear judgement in your evaluation.

19 ADVANTAGES AND DISADVANTAGES OF LARGE AND SMALL FIRMS

LEARNING OBJECTIVE

- Understand the advantages and disadvantages of large and small firms
- Understand the factors that influence the growth of firms
- Understand the reasons why some firms stay small

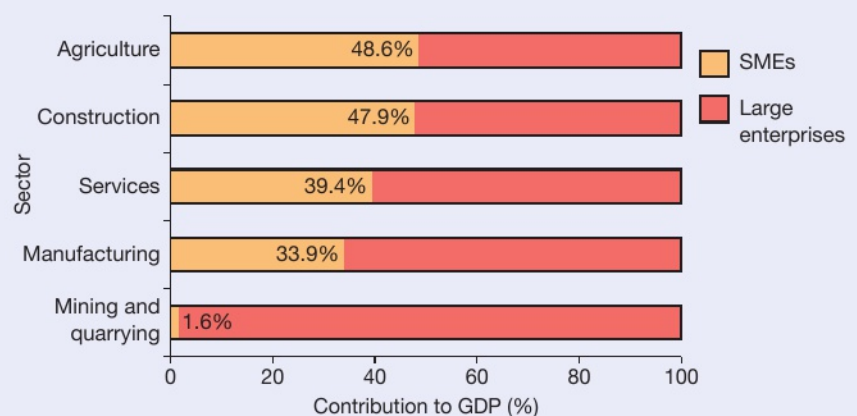
GETTING STARTED

In many countries around the world, the economy is dominated by small- and medium-sized enterprises (SMEs). In some countries, the number of SMEs is as high as 99 per cent. They make significant contributions to output, employment and income generation. However, large firms are also very important. The relatively small number of large firms often contribute far more to the economy than all of the SMEs put together. Also, in some sectors, small firms find it difficult to survive. Look at the example below.

CASE STUDY: THE ROLE OF SMEs IN MALAYSIA

There were an estimated 5 million private sector businesses in Malaysia in 2016. Of these around 97 per cent were SMEs. These businesses are responsible for nearly 36 per cent of the country's GDP, 65 per cent of the country's employment, and nearly 18 per cent of Malaysia's exports. The graph in Figure 19.1 shows the role played by SMEs in the Malaysian economy. SMEs play the biggest role in the agriculture sector with a share of 48.6 per cent. The SMEs in this sector produced rubber, oil palm, livestock, fish and food crops, such as vegetables and fruits.

In 2014, Malaysia's GDP was US\$338 100 million.



▲ Figure 19.1 GDP contributions by SMEs and large firms in Malaysia, 2017 (constant 2010 prices)

- 1 Calculate the contribution made by (a) SMEs in agriculture and (b) large firms in manufacturing.
- 2 Describe one possible advantage of operating as an SME.
- 3 Describe one possible reason why the mining and quarrying sector is dominated by large firms.
- 4 In groups, make a list of advantages that large firms might have compared to small firms. Present your ideas to the rest of the class using a poster.

HOW IS THE SIZE OF A FIRM MEASURED?

Several methods can be used to measure the size of a firm. Here are three common methods.

TURNOVER

Firms with high turnovers will tend to be larger than those with small turnovers. For example, in 2015, BP had a turnover (total revenue) of US\$225 900 million. This makes BP a very large company. BP is one of the world's leading gas and oil companies.

NUMBER OF EMPLOYEES

Large firms tend to employ larger numbers of employees than smaller firms. In 2015, BP employed about 80 000 people worldwide. By this measure, again BP is classified as a large company.

BALANCE SHEET TOTAL

This measure is based on the amount of money invested in the business by the owners. Generally, more money will be invested in larger firms such as BP. In 2015, the balance sheet total for BP was US\$98 300 million. Table 19.1 shows how the European Union (EU) defines different sized firms.

	MICRO	SMALL	MEDIUM	LARGE
Turnover (revenue) (€ million)	< 2	< 10	< 50	> 50
Number of employees	< 10	< 50	< 250	> 250
Balance sheet total (€ million)	< 2	< 10	< 43	> 43

▲ Table 9.1 How the EU defines the size of firms

SMALL FIRMS

The vast majority of firms in many countries are small. The number of small firms, along with self-employment, has also grown in the last 30 years. Governments in many countries have encouraged the development of small businesses. In developed countries, the growth in the tertiary sector has also helped. This is because the provision of many services is more effective on a small scale. Finally, during periods of high unemployment, such as in the 1980s and just after the financial crisis in 2008, many people saw self-employment as a way of supporting themselves. They often used money from being made redundant to help start their own business.

ADVANTAGES

Small firms have some advantages over their larger rivals.

- **Flexibility:** Small firms can adapt to change more quickly. This is because the owners, who tend to be the main decision makers, are actively involved in the business and can react to change. For example, a small baker can produce a personalised birthday cake for individual customers. A large national cake manufacturer may not be able to do this.
- **Personal service:** As firms get bigger, it often becomes difficult to offer customers an individual personal service. Some people prefer to deal with the owner of a firm directly and are prepared to pay a higher price for this benefit. Owners are far more accessible in small firms than larger ones.
- **Lower wage costs:** Many workers in small firms do not belong to trade unions. As a result, their negotiating power is weaker and the owners are often able to restrict pay to the legal minimum wage.

- **Better communication:** Since small firms have fewer employees, communication tends to be informal and more rapid than in larger organisations. The owner will be in close contact with all staff and can exchange information quicker and more efficiently. As a result, decision making will be faster and workers may be better motivated.
- **Innovation:** Although small firms often lack resources for research and development, they may be surprisingly innovative. One reason for this is that small firms face competitive pressure to innovate. For example, if they fail to come up with new ideas for products, they will lose their market share. It may also be because small firms are more prepared to take a risk. Perhaps they have less to lose than large firms.

DISADVANTAGES

There are some disadvantages to being a small firm.

- **Higher costs:** Small firms cannot exploit economies of scale because their output is limited. Consequently, their average costs will be higher than their larger rivals. This means that small firms often lack a competitive edge.
- **Lack of finance:** Small firms often struggle to raise finance. Their choice of sources is limited. For example, a sole trader cannot sell shares to raise more finance. They are also considered to be more risky than larger firms by financial institutions and other moneylenders.
- **Difficult attracting quality staff:** Small firms may find it difficult to attract highly qualified and experienced staff. One reason for this is because they lack resources. For example, they may not be able to afford the wages or the training that high-quality employees require.
- **Vulnerability:** When trading conditions become challenging, small firms may find it more difficult to survive than their larger rivals. This is because they do not have the resources to draw on when economic conditions worsen. Small firms might also be at risk of takeovers. Owners may be forced to accept unattractive takeover terms.

ACTIVITY 1

CASE STUDY: BOLT

In 2015, two entrepreneurs, Satyajeeet Mohanty and Ronak Kumar Samantray, set up their own business, Bolt, in Hyderabad, India. They invented and developed a device for charging mobile phones while riding a motorbike. The device, called the Bolt Red Streak, is a compact waterproof mobile charger designed to charge any mobile phone safely and quickly on the motorbike. The unique design makes it easy to unplug and carry around when not riding. The device also tracks the entire ride on a route map and calculates total distance and average speed, using the Bolt Riders App. It sells for Rs1599 and can be purchased online or from around 30 authorised dealers.

The business, which was funded with about Rs25 million raised from family and friends, has a lot of potential. In 2015, around 16 million two-wheeled vehicles, such as scooters, motorcycles and mopeds were sold in India alone. It currently employs five people with primary focus on production quality and aftersales service with customers.



▲ The Bolt Red Streak

The business hopes to sell 350 units per month in 2016.

- 1 Calculate the expected revenue in 2016 if sales are realised.
- 2 What evidence is there in the case to suggest that Bolt is a small business?
- 3 Discuss two possible disadvantages for small businesses like Bolt.

LARGE FIRMS

The largest firms in the world are multinational companies. Multinationals have a great deal of power. They have huge resources and employ thousands of people. The largest firm in the world in 2016 was the US retailer Walmart.

ADVANTAGES

Large firms tend to be more powerful than smaller rivals. They enjoy a number of key advantages.

- **Economies of scale:** The main advantage to large firms is that their average costs are likely to be lower than those of smaller rivals. They can operate in large-scale plants and exploit economies of scale. For example, they can get cheaper supplies of materials and components because they buy in bulk.
- **Market domination:** Large firms can often dominate a market. They have a higher profile in the public eye than small firms and benefit from such recognition. This may mean that they can charge higher prices that enable them to make higher profits.
- **Large-scale contracts:** There are both small firms and large firms in the construction industry. However, a small firm could not compete with a large firm for a contract to build a new motorway for the government. Only large firms can win these large-scale, often highly profitable contracts because small firms do not have the resources to carry out the work.

DISADVANTAGES

Although big firms can generally produce goods more cheaply than small firms, they do have some disadvantages.

- **Too bureaucratic:** Large firms sometimes become overwhelmed by their administration systems. For example, decision making can be very slow in large firms because so many different people have to be contacted before a decision can be taken. Too many resources may be used up in administration. For example, too much time may be spent filling in forms and writing reports. Also, communication channels may be too long and too many managers may be employed.

- **Coordination and control:** A very large business may be difficult to control and coordinate. Thousands of employees, billions of pounds and dozens of plants all over the world can make running a very large organisation demanding. There may also be a need for more supervision that will raise costs.
- **Poor motivation:** In very large organisations, people can become alienated. The organisation may become so large that the effort made by a single employee seems insignificant. Personal contact between employees in large organisations may be lacking and this can result in poor worker motivation.

FACTORS INFLUENCING THE GROWTH OF FIRMS

Many owners will hope to grow their businesses. However, in some cases growth may not be easy. What might influence the growth of firms?

GOVERNMENT REGULATION

It is in the interests of consumers, and the economy in general, to have healthy competition between businesses. Competition will encourage innovation, improve efficiency and prevent consumer exploitation. Consequently, governments will monitor business activity and ensure that individual markets are not dominated by one or a small number of firms. In this role, the government may sometimes prevent the growth of some firms to stop them becoming too big. They can do this by investigating each merger and takeover, and blocking those that threaten to reduce competition. For example, in 2016, the EU prevented Three's takeover of O₂. Both are telecommunications companies and the EU said that the takeover would have reduced competition in the market.

ACCESS TO FINANCE

Businesses need finance to grow. They may need money to make acquisitions, build new factories, open new stores or develop new products, for example. Firms that can persuade money lenders and other investors to provide finance are in a better position to grow. Consequently, access to finance can have an important influence on growth.

ECONOMIES OF SCALE

One of the main motives for growth is to reduce average costs. As a firm grows, average costs will fall because it is possible to exploit economies of scale. In some industries, such as car manufacturing, air transport, power generation and water distribution, costs can be lowered significantly by producing very large quantities of output. Consequently, businesses are more likely to grow in such industries. However, in other markets it may be more difficult to exploit economies of scale. For example, there are few examples of international taxi firms, giant window cleaning operations and multinational hair salons. There are few opportunities to exploit economies of scale in these markets; therefore business growth will be limited.

THE DESIRE TO SPREAD RISK

Another motive for growth is to spread business risk. Risk can be reduced by diversifying. Selling into new markets and developing new products means that if one venture fails, success in others can keep the firm going. If business risk increases, perhaps because of growing uncertainty in certain sectors, firms are likely to diversify and grow as a result. Events like the UK's decision to leave the EU and sharp falls in commodity prices like oil are likely to result in this behaviour.

THE DESIRE TO TAKE OVER COMPETITORS

One way to grow a business is to take over rivals in the market. This is a quick way of growing and helps to reduce competition. However, over time the amount of merger and acquisition (M&A) activity tends to vary. For example, 2015 was a record year for global M&A deals. One big deal involved Anheuser-Busch InBev's US\$100 000 million-plus takeover of SABMiller in the beverages industry. Globally, M&A deals totalled US\$4.7 trillion during 2015, an increase of 42 per cent compared with 2014. However, over the first 8 months of 2016, global M&A fell to US\$2.2 trillion. Consequently, if the desire to take over rivals falls, this can influence the growth of firms.

ACTIVITY 2

CASE STUDY: BT

In 2015, a communications giant was formed when telecoms group BT confirmed that it would buy mobile operator EE for £12 500 million. This takeover created a communications company offering a range of telecommunications services, such as broadband, fixed telephone and pay-television services. BT plan to sell these services to those EE customers who do not currently subscribe to BT. BT also hopes to speed up the sale of other services to its existing customers. The takeover was subject to approval by BT shareholders and examination by the Competition and Market Authority (CMA). However, the CMA cleared the deal in early 2016 and it went ahead.

The takeover should result in cost savings for BT. It was reported that BT could expect to save about £360 million a year in operating costs and capital costs after 4 years. BT also hoped that by combining the two businesses an extra £1600 million a year could be generated. Although BT would have to raise about £1000 million by selling some fresh shares, BT **chief executive** Gavin Patterson said, 'This is a major milestone for BT as it will allow us to accelerate our mobility plans and increase our investment in them.'

- 1 How can (a) the desire to take over rivals and (b) government regulation; influence the growth of firms. Use examples from the case in your explanation.
- 2 How is BT spreading risk as a result of the takeover?

GENERAL VOCABULARY

chief executive person who has the highest position in a company or other organisation and who makes all the important decisions about how it is run

REASONS FIRMS STAY SMALL

SIZE OF THE MARKET

Some markets are too small to sustain very large companies. For example, the market for luxury yachts is limited. Only a relatively small number of very wealthy people can afford to buy a luxury yacht. Therefore, businesses in this market will struggle to grow into very large organisations.

NATURE OF THE MARKET

In some markets, such as groceries, painting and decorating, hairdressing and taxi driving, the set-up costs are relatively low. There is little to discourage new

SUBJECT VOCABULARY

market niche smaller market, usually within a large market or industry

businesses joining the market. As a result, fierce competition stops any single firm from growing.

Also, in some markets, businesses serve a particular **market niche**. Customers in niche markets have very particular needs, which are sometimes neglected by larger firms. Consequently there is a gap in the market for a business that is prepared to tailor goods or services to this small customer group. Such businesses are generally small.

LACK OF FINANCE

Some businesses would like to grow but are not able to raise the finance needed to expand. Growth usually requires investment in new resources, such as property extensions, new machinery, equipment and more labour. Unfortunately, some businesses are not able to convince money lenders that if the company grows it will be more successful and the finance will be repaid. Many small businesses that want to grow are still seen as too risky.

AIMS OF THE ENTREPRENEUR

Some business owners do not want to grow their businesses. They may be happy running a small business. They may be making enough profit to satisfy their needs and do not want the responsibility of taking on more workers, expanding operations and borrowing more money, for example. Also, some businesses are 'lifestyle' businesses. This means that the owners have interests other than their businesses and they need the time and flexibility to pursue them. As a result, such businesses are likely to remain small.

DISECONOMIES OF SCALE

Once a firm reaches a certain size, any further growth results in diseconomies of scale (see Chapter 17, pages 124–131). If a firm expands beyond the minimum efficient scale, average costs start to rise. A firm is not likely to grow any further if costs start to rise because it would have to charge more for its output.

MULTIPLE-CHOICE QUESTIONS

- ▶ 1 Which of the following is a reason why some firms remain small?
 - A Lack of unskilled labour
 - B Lack of finance
 - C High tariffs on exports
 - D Low interest rates
- ▶ 2 Look at Table 19.1. Which of the following firms is considered to be medium-sized according to the EU definitions of business size?
 - A One employing 23 workers
 - B One with a turnover of €23 000 million
 - C One with capital employed of €2.4 million
 - D One employing 202 workers

ECONOMICS IN PRACTICE

CASE STUDY: STARBUCKS AND THE COFFEE LOUNGE

STARBUCKS

Starbucks is an international coffee and coffeehouse chain based in Seattle, Washington, USA. Starbucks is the largest coffeehouse company in the world, with over 22 000 stores in 67 countries. Starbucks sells drip-brewed coffee, espresso-based hot drinks, other hot and cold drinks, snacks, and items such as mugs and coffee beans. Starbucks began trading in Seattle as a local coffee bean retailer in 1971. The company has grown rapidly, opening two new outlets every day (on average) for the last 27 years. It plans to open 3400 shops in China by 2019. Starbucks employs around 238 000 people and had a turnover of US\$19 200 million in 2015.



▲ A Starbucks outlet

THE COFFEE LOUNGE

The Coffee Lounge is a small coffee shop in Trujillo, Peru. It is owned by Paolo Cueva and employs three full-time and two part-time staff. The market is competitive with Starbucks operating an outlet nearby. However, Paolo is not worried about the power of Starbucks. The Coffee Lounge opens at 5.00 a.m., several hours before its rivals, and draws in a significant number of regular early morning customers. Paolo says, 'I have been running this business for 32 years. I know it inside out. I know many people in the town and they like to do business with me. I am flexible – I give my customers whatever they want. Every day I make a special chorizo, fried egg and banana sandwich for one of my customers. Starbucks wouldn't do that.'

When asked if he would like to own a chain of stores, Paolo replied, 'Absolutely not. I do not want the responsibility of growth more staff, more decisions, more worry and more work. It's not for me – I am happy with what I have got.'



▲ Inside The Coffee Lounge

CHAPTER QUESTIONS

- 1 How is Starbucks spreading business risk through its growth strategy?
- 2 Discuss two advantages that Starbucks might have over The Coffee Lounge.
- 3 Why is The Coffee Lounge likely to remain a small firm? Give at least two reasons in your analysis.
- 4 Discuss the reasons why The Coffee Lounge can survive in the market alongside powerful rivals such as Starbucks.

20 MONOPOLY

LEARNING OBJECTIVE

- Understand how to define monopoly
- Understand the main features of monopoly: one business dominates the market, unique product, price-maker and barriers to entry (legal barriers, patents, marketing budgets, technology and high start-up costs)
- Understand the advantages and disadvantages of monopoly: efficiency, choice, quality, innovation, price and economies of scale

SUBJECT VOCABULARY

monopoly situation where there is one dominant seller in a market

GETTING STARTED

In some markets, there is a lack of competition. As a result, one firm may dominate the market. The firm that dominates the market is said to be a monopolist. It is often said that where there is a **monopoly**, consumers are likely to be exploited. However, there may also be advantages when monopolies exist. Look at the example below.

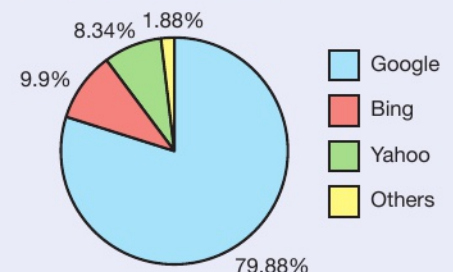
CASE STUDY: US MARKET FOR SEARCH ENGINES

One provider dominates the US market for search engines. Most people would probably guess that it is Google. Figure 20.1 shows that in the US Google had 79.88 per cent of the market for desktop searches in August 2016. Two other providers, Bing and Yahoo, had much smaller market shares, while others including AOL and DuckDuckGo shared just 1.88 per cent of the market. Google generates revenue by selling online advertising services including the delivery of targeted ads online. In 2015, Google generated US\$74 500 million in revenue and made a profit of US\$16 300 million.

Google has been criticised recently in many countries for avoiding the payment of tax on its profits. For example, in 2014, the company transferred €11 700 million to Bermuda in an effort to minimise the taxes it had to pay on its income. This transfer meant that Google avoided paying tax on much of its foreign income. Google paid just €2.8 million in taxes which was 0.024 per cent on the €11 700 million in revenue. Many people in the world pay up to 25 per cent tax, or more, on their own personal income! Google was also fined US\$22.5 million recently because it 'placed an advertising tracking cookie on the computers of Safari users who visited sites within Google's DoubleClick advertising network' (Federal Trade Commission, 2012). This broke a privacy agreement. When powerful firms like Google dominate markets, it is often difficult for the authorities to challenge their 'misdemeanours'. Although it has to be said that Google did not break any laws with its tax avoidance.

One of the possible benefits of market domination is that large powerful firms can invest heavily in research and development (R&D). Google spent US\$12 280 million on R&D in 2015. Google also has a reputation for being an innovative company and leading the market in product development.

- 1 What evidence is there to suggest that Google is a monopolist?
- 2 Using an example from this case, describe one possible advantage of monopolies for consumers.
- 3 Using examples from this case, discuss the possible disadvantages of a single firm dominating the market.



▲ Figure 20.1 US desktop search engine market shares, August 2016 (%)

WHAT IS MONOPOLY?

A pure monopoly exists when just one producer supplies a market. However, there is also a legal monopoly. In some countries, if a firm has 25 per cent or more of a market it is said to be a monopolist. Pure monopolies are not common but they do exist. For example, in some countries, pure monopolists operate in the water and rail industries. In some markets, there might be local monopoly. This is where one firm supplies an entire local market in the way a village shop might be the only shop in the village.

FEATURES OF MONOPOLY

ONE BUSINESS DOMINATES THE MARKET

In markets dominated by one seller, a monopoly is said to exist. For example, in India there is only one supplier of rail travel in the whole country. This is Indian Railways, which employs over 1 million people and is owned and operated by the Government of India through the Ministry of Railways. However, a monopoly can exist when one firm dominates the market even though there may others operating alongside. For example, in 'Getting started' there are at least six firms providing a search engine service in the USA. But Google, with a market share fast approaching 80 per cent, dominates the market.

UNIQUE PRODUCT

The product supplied by a monopolist will be highly differentiated. There will not be another exactly like it. For example, where a pure monopoly exists there will be no rivals at all. Therefore, the product supplied is the only one available; there is no choice whatsoever for the consumer. This is often the case with rail travel and water provision, for example.

SUBJECT VOCABULARY

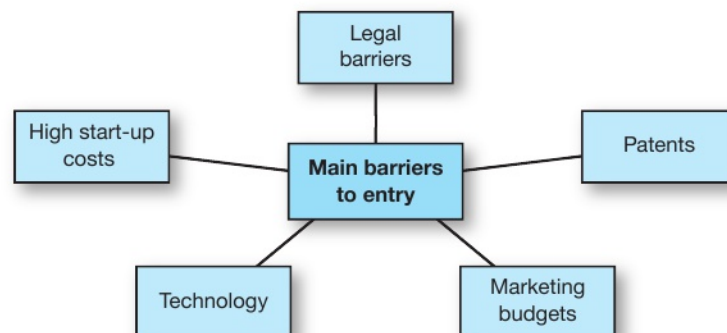
new entrant company that starts to sell goods or services in a market where they have not sold them before, or one of these goods or services
price maker where a dominant business is able to set the price charged in the whole market

PRICE-MAKER

Although monopolists face a downward sloping demand curve, they are able to control the prices they charge. Monopolists are sometimes called **price makers**. They can force prices up by restricting the quantity supplied in the market. However, they cannot fix both price and quantity. If they try to sell larger quantities, the price will be forced down.

BARRIERS TO ENTRY

Monopolies often exist because competition is discouraged. In some markets, there are obstacles that prevent a **new entrant** from trying to compete. Barriers to entry are a common feature in monopoly and the main ones are summarised in Figure 20.2.



▲ Figure 20.2 The main barriers to entry

SUBJECT VOCABULARY

patent licence that grants permission to operate as a sole producer of a newly designed product

- **Legal barriers:** In some markets, it is possible to exclude competition legally. This might happen when a government awards a contract to a single firm to provide a particular service. Two common examples are in the provision of rail travel and water supply. Governments often award contracts to a single supplier to provide rail travel on a particular route or water in a particular district. These contracts may run for between 10 and 30 years. Once a firm has a government contract to provide a service, competition is legally forbidden.
- **Patent:** A **patent** is a licence that prevents firms copying the design of a new product or new piece of technology. The new product developer can be the sole supplier in the market for a period of up to 20 years. This allows the firm to charge a higher price and recover the costs of research and development (R&D). Patents are common in the pharmaceuticals industry where firms are allowed to sell new drugs or medicines without competition. Therefore patents encourage R&D.
- **Marketing budgets:** Monopolists often have strong brand names. This makes it difficult for new entrants to compete because their products will be unfamiliar and may not be trusted by consumers. Dominant firms often spend large amounts of money on advertising to strengthen their brand names. For example, Coca-Cola, which dominates the soft drinks market, spent US\$2800 million on advertising in 2014. Such high spending levels like this are very difficult, almost impossible, for new entrants to match.
- **Technology:** If an established and dominant firm has access to complex or up-to-date technology, this can act as a barrier to entry. For example, if a manufacturer develops a sophisticated new machine to improve efficiency in production, its average costs will fall and rivals might be forced out of business. Unless rivals can copy the technology, or buy it at a fair price, they might be forced to leave the market.
- **High start-up costs:** In some markets, the cost of setting up a firm to compete with the existing operators is too high. For example, in the UK, Rolls-Royce is the only producer of jet engines for aircraft. To set up a firm to compete would probably cost many hundreds of millions of pounds. In 2016, Rolls-Royce spent over £800 million on R&D alone. New competitors may find it difficult to match such financial commitment.

THE ADVANTAGES OF MONOPOLY

Many would argue that monopoly is bad for the consumer because choice is limited and prices are often higher. However, there may be some advantages.

EFFICIENCY

In some markets **natural monopolies** might exist. These are markets where it is actually more efficient if just one firm supplies all consumers. In these markets, it is often the case that the sole supplier is unable to exploit all economies of scale. Examples of such markets are those with very high fixed costs such as the utilities and rail travel. It would be highly inefficient if two or more railway operators tried to supply rail travel between the same destinations using their own railway lines. There would be a huge duplication of resources, which is wasteful.

INNOVATION

Since monopolies are often large and make high profits, they have the resources to invest in R&D. As a result they are able to develop new products and new technologies from which consumers will benefit. For example, in 'Getting started', Google spent US\$12 280 million on R&D in 2015. Google also has a reputation for being innovative.

SUBJECT VOCABULARY

natural monopolies situation that occurs when one firm in an industry can serve the entire market at a lower cost than would be possible if the industry were composed of many smaller firms

ECONOMIES OF SCALE

Since most monopolists are large, they are able to exploit economies of scale. This means that their average costs are lower. As a result, they may be able to supply products to consumers at a lower price. This will obviously benefit consumers if the cost savings are passed on. It is argued by some that if a firm has a monopoly in the domestic market, it can build strength and compete more effectively with competition from overseas. This will help to increase employment and national income in the domestic economy.

ACTIVITY 1

CASE STUDY: UK WATER INDUSTRY

In 2016, it was reported that Britain's privately owned water companies would make unexpectedly high profits of over £1000 million. The reason for this was because the industry regulator, Ofwat, had overestimated some of the costs companies would incur when setting water price limits. Consequently, the water monopolies made excess profits of £1200 million over 5 years. This was because they charged higher prices than necessary. Unfortunately, it was the poorest customers who were hit hardest. Their bills represented 5.3 per cent of their annual income compared with 2.3 per cent a few years ago. At the same time, the share prices of water companies grew by around 50 per cent on average. This was above the general rise in share prices. The supply of water in the UK is delivered by a number of private monopolies, with each company being the sole supplier in a particular region. Some of the different services provided are shown in Figure 20.3.



▲ Figure 20.3 Services provided by water companies

The market for water provision is a natural monopoly.

- 1 What is meant by a natural monopoly?
- 2 Describe one other possible advantage of a monopoly.
- 3 Why is there an industry regulator in the provision of water in this case?
- 4 Who is likely to benefit from the mistake made by Ofwat in this case?