

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

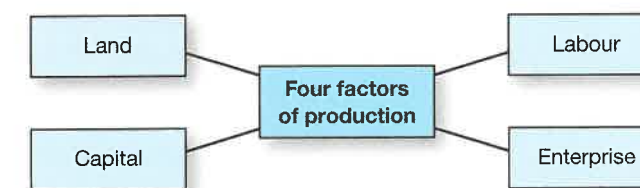
factors of production resources used to produce goods and services, which include land, labour, capital and enterprise

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.

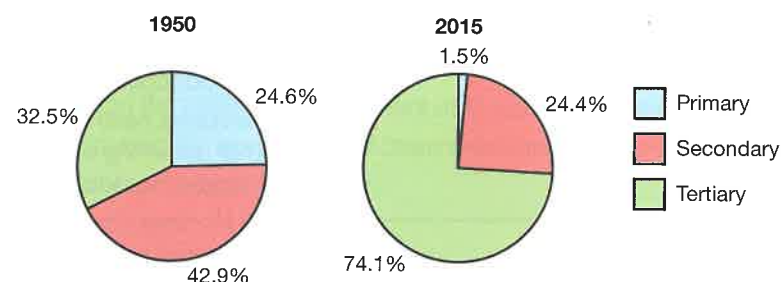
CHANGES IN THE IMPORTANCE OF DIFFERENT SECTORS

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

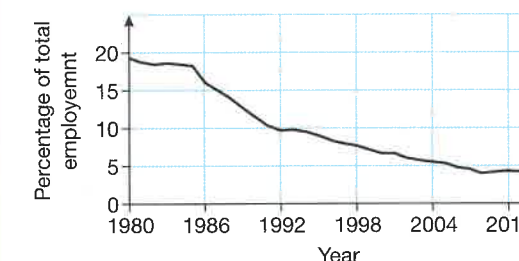
The largest olive growing region in the world is Andalucía, in southern Spain. Many of the growers in this region are owned and run by small family businesses. The Casillas family grow olives on their farm near Cordoba. Each year they sell their harvest to a local business that processes the olives into 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.

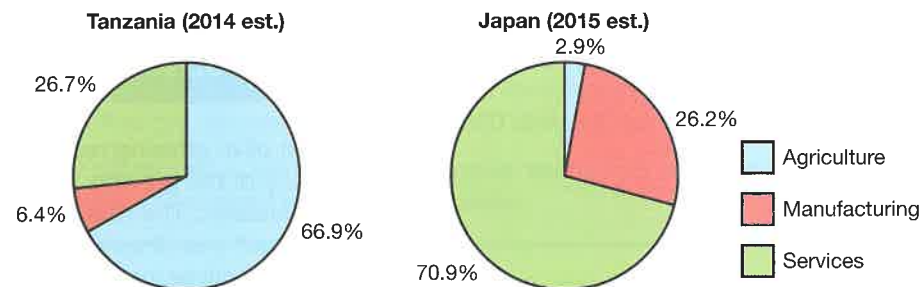


Figure 14.4 Employment by sector, Tanzania and Japan

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.

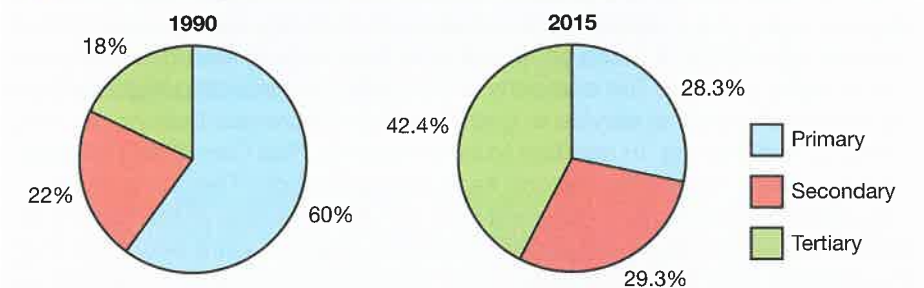
One very large Chinese manufacturer is the state-owned company Hisense. Hisense makes white goods, such as washing machines and refrigerators, as well as electrical goods, such as televisions, laptops, mobile phones and many other related products. Hisense has a large number of factories in both China 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 What is meant by de-industrialisation?
- 5 Assess 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

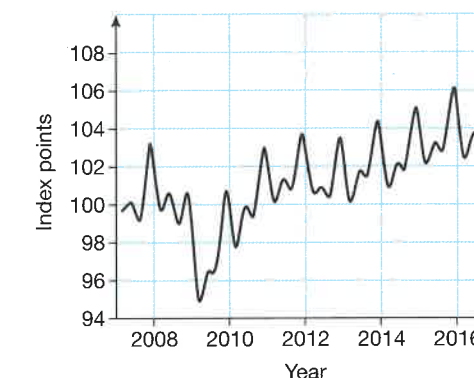
PRODUCTIVITY

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

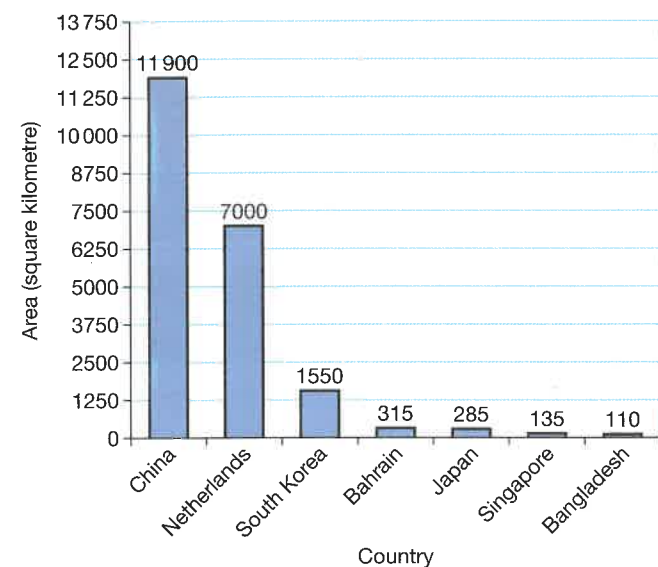
Productivity can be improved if businesses make better use of their resources. There are a number of ways of raising the productivity of production factors, some of which are outlined below.

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.

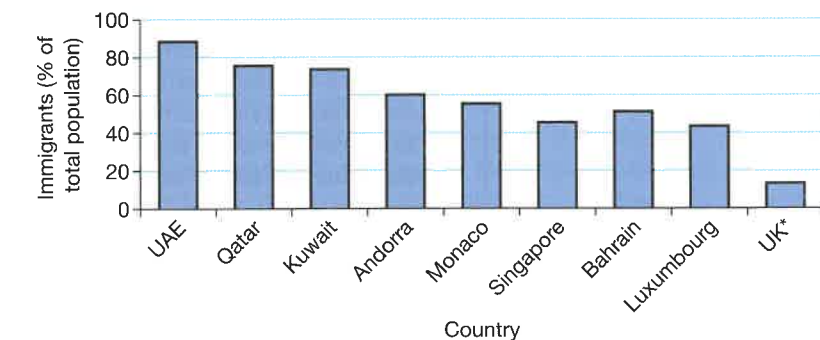
The government can help to improve the quality of human capital by investing in the education system. This might involve providing more equipment for schools and improving the quality of teaching. To equip young people with the skills needed in the workplace, a government might invest more in vocational 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 fibreglass 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?

- ▶ 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

CHAPTER QUESTIONS

- 1 What is meant by labour productivity?
- 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 Assess 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.

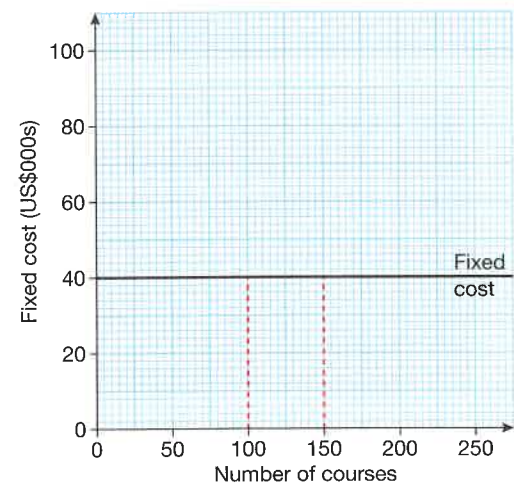
TOTAL FIXED COSTS

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

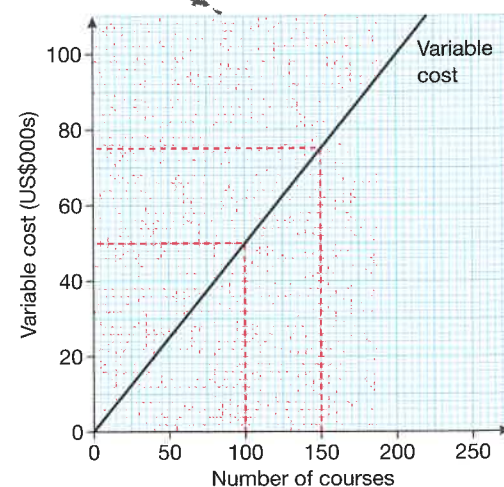
TOTAL VARIABLE COSTS

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 × US\$500). If 50 extra courses are provided, total variable costs rise to US\$75 000 (150 × 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

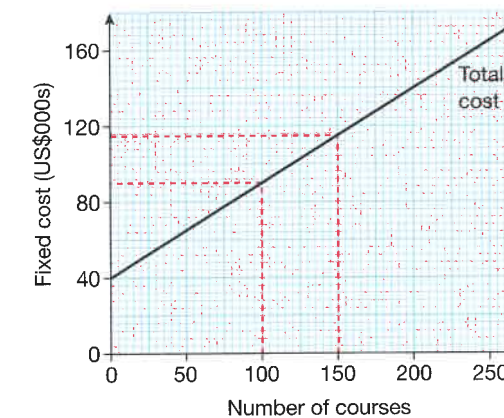
The cost to a firm of producing all output over a period is called **total cost**. Total cost (TC) can be calculated by adding total fixed costs (TFC) and total variable costs (TVC) together.

$$TC = TFC + TVC$$

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 5 000 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, Kandasari 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:

$$AC = \frac{TC}{Q} = \frac{\text{US\$90 000}}{100} = \text{US\$900}$$

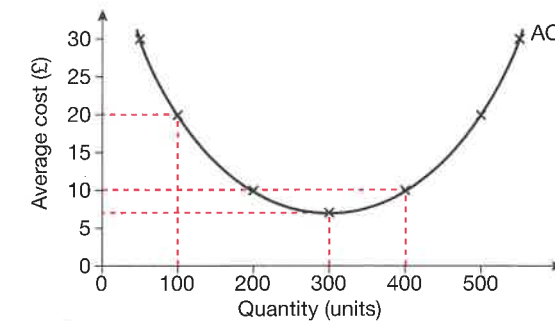
This means that each course provided to trainee HGV drivers costs Frampton Training US\$900.

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.

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

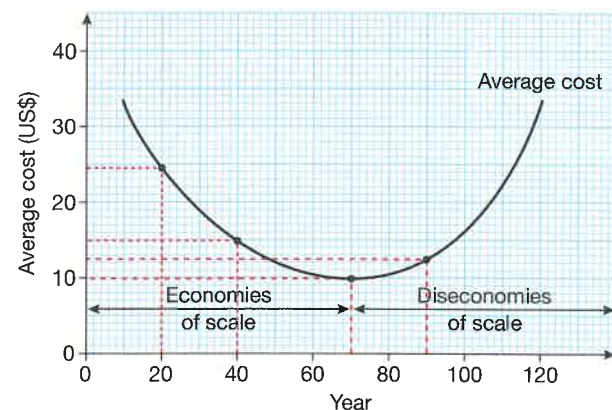
- 1 Which of the two businesses is the largest?
- 2 Which business has the lowest costs?
- 3 Which firm is likely to be the most efficient?
- 4 How might GF Foods benefit from its cost advantage?
- 5 In groups, draw up a list of the possible advantages that very large firms have over their smaller rivals. 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



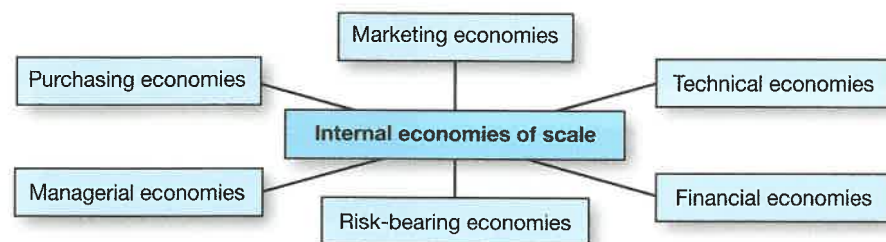
▲ Figure 17.1 Economies and diseconomies of scale

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 VW's 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 What is meant by the term 'scale' in business?
- 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 Assess the extent to which Flamboyance is experiencing diseconomies of scale.

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 What is meant by the term 'competition'?
- 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

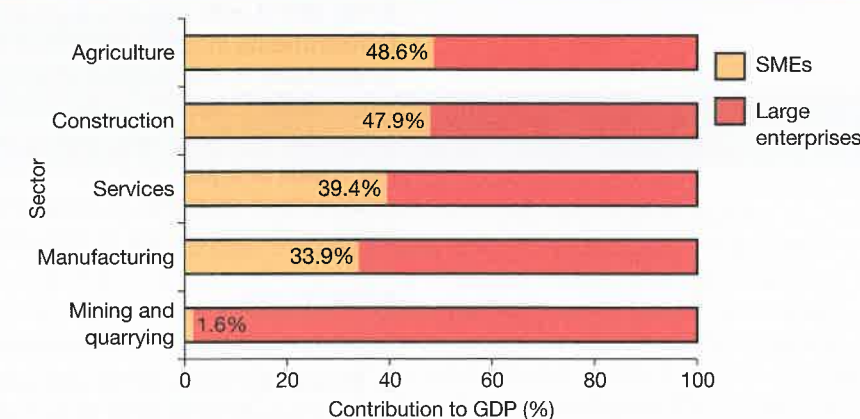
- Understand the advantages and disadvantages of large and small firms
- Understand the factors that influence the growth of firms
- Understand the reasons why some firms stay small

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.



▲ Figure 19.1 GDP contributions by SMEs and large firms in Malaysia, 2017 (constant 2010 prices)

In 2014, Malaysia's GDP was US\$338 100 million.

- 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 businesses.

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.

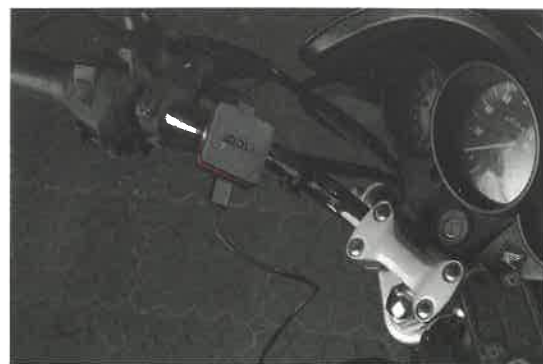
- **Higher costs:** Small firms cannot exploit economies of scale because their output is limited. Consequently, their average costs will be higher than their larger rivals. This means that small firms often lack a competitive edge.
- **Lack of finance:** Small firms often struggle to raise finance. 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, Satyajeet 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