

Collins

Cambridge IGCSE®

Economics

TEACHER'S GUIDE

Also for Cambridge O Level

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Learning objectives

By the end of this unit, students should be able to:

- explain the difference between micro economics and macro economics
- identify the decision makers involved in each.

Key terms

Micro economics; macro economics

STARTING POINT

Place the students into pairs and ask them to discuss together all three questions. After allowing time to complete the tasks, invite pairs to go through their answers. Write responses on the whiteboard to capture all new points.

- The demand for cars will depend on a number of factors. Businesses buy cars for their fleet vehicles, such as taxi firms, car hire businesses as well as company cars. Demand will depend on how successful these buyers are. For private motorists, the level of real incomes will be important as well as the availability of credit (motor finance). Costs of running a vehicle, such as fuel costs, might affect the type/brand of car bought. Another important determinant of demand is consumer confidence, but this is difficult to measure.
- Answers could include: the workforce involved in car manufacture will benefit and have greater job security; unemployed workers could get jobs; suppliers to the industry would see orders increase; shareholders in the car industry could benefit from increased profits; shops near the factories have increased trade.
- Government might make lower benefit payments as unemployment falls and receive more tax as more workers are employed.

EXPLORING

The exploring questions could be run as individual tasks, pairs work or group discussion. It would be useful at the end to run a plenary session to go over key issues.

- For individuals, savings provide a buffer against uncertain times allowing people to smooth out their consumption when times are tough and allow people to reduce debts and save for retirement.
- They could save up for a purchase or a holiday and it might mean that they do not have to borrow money and get into debt.
- If everyone saved more, that would mean they would spend less and retailers could face a fall in sales and profits.

Extension question**What is meant by the paradox of thrift?**

The exploring questions are leading to the concept of the 'paradox of thrift', which was popularised by the economist John Maynard Keynes. It states that individuals try to save more during an economic recession, which essentially leads to a fall in (aggregate) demand and also in economic growth. It is a paradox because individuals saving is a good idea but in an economic downturn savings has an adverse effect on the economy.

DEVELOPING**Teaching tips**

- It is important to link economic theory to current actual examples in the business world and the wider economy as this is far more interesting to the student.
- An issue to be aware of is that some students tend to think of micro economics as theory and macro economics as practice.

- While micro and macro economics appear to be different, they are interdependent and complement one another since there are many overlapping issues between the two fields. For example, increased inflation (macro effect) would cause the price of raw materials to increase for companies and in turn affect the end product's price charged to the public. It is important that students are aware of this.
- One way of approaching micro economics and macro economics is that micro takes a bottom-up approach to analysing the economy while macro takes a top-down approach. Micro tries to understand human choices and macro tries to answer such questions as "What stimulates economic growth?"

Suggested answer to the Application task

Economics studies the effects of the following	Micro economics or macro economics?
Bad weather affecting the rice harvest	Micro economics because rice farmers and consumers are affected. It only affects one market and not the whole economy
Unemployment increasing	Macro economics because unemployment affects the whole economy, as government has to pay more in benefits and demand might fall for goods and services
The exchange rate for your economy increasing in value	Macro economics because the whole economy could be affected as it could affect prices and demand for exports and imports
Your father's wage has increased	Micro economics because only one household's income has increased
The government raises income tax	Macro economics because a rise in income tax will affect all taxpayers and could impact on the demand for goods and services
A new machine is invented to clean floors more quickly	Micro economics as it affects one market but not the whole economy
Wages are rising for all workers across the country	Macro economics because wages are a cost of production leading to wage inflation and so affects the whole economy
The price of cocoa increases	Micro economics because only cocoa farmers and consumers are affected. It only affects one market and not the whole economy

Additional activity

Micro and macro economics

Collect past copies of newspapers. Divide groups of students into pairs. Give each pair some of the newspapers, flip chart paper, glue, scissors and pens. Ask them to draw a line down the middle of the flip chart paper and write the heading 'micro economics' on one side and 'macro economics' on the other. Students are to look through the papers and find appropriate stories that illustrate micro and macro economics and cut out and stick them under the correct heading.

When completed, each pair should attach their flip chart paper to the wall.

Invite pairs to give examples.

Case study

Housing market in Singapore in 2017

- Review typical micro and macro issues in a question and answer session.
- Discuss what might influence property prices in countries generally and then specifically in a crowded island such as Singapore.

Suggested answers

The case study questions ask to identify microeconomic and macroeconomic issues from the case study. They could present these in a table. Run a plenary after students complete to ensure understanding. Explain that the inter-relatedness of micro and macro means that costs of labour, for example, could be both a micro and a macro issue.

1. Micro issues

- In the private residential property market, there has been an increase in house purchases.
- House prices have been rising.
- Singapore Press Holdings is planning to reduce its workforce by 10% over the next two years.
- Wage increases are low (could affect one firm or one market).

2. Macro issues

- Prices
- Economic growth
- Job losses – the Government has warned that unemployment may increase
- Wage increases are low (could affect all firms)

APPLYING

Project work

- This project asks the student to use the internet to record inflation rates in your own country. Apart from statistics from your own country, the World Bank website is a useful source of data as it provides inflation data on all countries. You need to be aware that the way inflation data is presented can be confusing for economics students. A variety of measurements are used and these are calculated differently, so guidance will have to be given.
- Students are asked to identify microeconomic decision makers affected by changes in the inflation rate. These could include individuals who make economic decisions as consumers every day about how to spend their income and whose buying decisions are affected by inflation. It also includes business owners such as a farmer who might face rising costs for animal feeds.

Expected outcomes

- Presentation of inflation data over a five-year period
- Identification of microeconomic decision makers affected by inflation and the nature of the impact

Knowledge check questions

Ask students to complete the knowledge check questions at the end of Unit 2.1 in the Student's Book.

Checking progress

Ask students to complete the Check your progress section in the Student's Book.

2.2

The role of markets in allocating resources

Learning objectives

By the end of this unit, students should be able to:

- explain what is meant by the market system
- describe how markets determine the allocation of resources
- describe the economic problem
- explain how the price mechanism determines the answers to the following key questions about resource allocation:
 - what goods and services to produce
 - how these goods and services should be produced
 - who should be able to purchase and consume these goods and services.

Key terms

Market economy; planned economy; mixed economy; the economic problem; economic resources allocation of resources; markets; price mechanism; equilibrium price; market equilibrium; market disequilibrium

STARTING POINT

Place students in their pairs to answer the starting questions, which introduce the student to markets being any place where buyers and sellers meet. Ask selected pairs to provide their responses, writing key points on the whiteboard. They are likely to mention that fruit and vegetables can be bought in a market and supermarkets or from farm shops. Some students might know that in some countries and cities online retailers now offer food deliveries. Currency, for example, US dollars, can be bought at banks, currency exchange shops/kiosks, post offices etc. Tickets for a sporting event can be bought at the venue, online or through agencies. A football shirt can be bought online, in sports and clothes shops or direct from a football club.

EXPLORING

After allowing time for the pairs to complete the questions, invite selected pairs to give their responses. Note these down on the whiteboard or ask the selected pairs to come to the front of the class and present their answers. One of them can write their key points on the whiteboard while the other talks.

Answers for the set of questions are likely to be that price would rise. This price rise would encourage the wooden toy manufacturer to supply more so they would need more wood. There is an increase in demand for wood. Some students might point out that the price of wood could rise which could lead to an increase in costs for the wooden toy manufacturer. There could be a variety of responses to what happens to workers who are employed by the toy manufacturer. Some may say it depends as their firm might ask them to produce more in the same time, or that they might get offered overtime so their incomes might rise. If the firm operated a profit share scheme, they could benefit from profits rising.

DEVELOPING

Teaching tips

- Check understanding of the economic problem at the start of the work on the price mechanism.
- Think of a wide variety of examples for students to explain the process of moving towards an equilibrium.
- Divide things into logical stages and explain why one action has knock on effects.
- Observing or discussing what happens in an auction is a useful example.
- At this stage do not be afraid to answer the question of whether markets do in fact act in this way and the barriers that are used to interfere with the workings of the price mechanism. These points are examined later in the book.

Suggested answers for in-text questions

1. The photograph is a picture of a market and this is a good place to sell products because the market brings buyers and sellers together.
2. Prices in a market are determined by the price mechanism. As above, this market brings buyers and sellers together. If a trader priced too high, then they would not sell any goods (especially if there are a lot of market stalls selling the same products). They would have to lower price to persuade people to buy the products. If they were selling out fast, they would put up the price as they could sell the remaining stock at a higher price.
3. If buyers want to buy a greater quantity of a chocolate bar than sellers are offering for sale, you would expect the price to rise.
4. If there is a greater quantity of chocolate bars offered for sale than the quantity of chocolate bars wanted by buyers, you would expect the price to fall.
5. If there is more quantity supplied than quantity demanded, this will either lead to the lowering of the price or unsold supply (excess supply). Lowering the price of a good encourages consumers to purchase more and suppliers to produce less.
6. The numbers of sellers would fall.

Additional activity

What should they do?

This activity asks students to look at a number of scenarios. It is based on discussion stations related to the workings of the price mechanism.

Explain to the students that they will be visiting discussion stations and responding to different scenarios. Divide students into groups. Explain that groups will be rotating around the room to different stations. At each station are pieces of chart paper with a statement or scenario. Students will read the statements and respond in writing with their own thinking, analysis, or questions. They may also respond to other students' comments. They should use their knowledge of the price mechanism as well as other economic knowledge.

Allow 3–5 minutes at each station. When each station has been visited by every group, allow 5 minutes for the students to revisit stations and see what new thinking or questions have emerged since they were last at the station.

Invite several students to share what they learned or how their thinking changed during their visits to the information stations.

The scenarios are as follows.

1. A video games shop responds to an increased demand for a popular game by keeping the price the same and selling on a first come first served basis. Is this the right way? What does economics suggest should happen?
2. A bakery shop notices it sells out all its bread within a couple of hours and decides to issue a coupon to regular customers and will only sell to customers with coupons for the first two hours. Is this the right way? What does economics suggest should happen?

3. A firm making glasses for use in bars and restaurants has seen sales fall as bars switch to plastic. 20% of their workforce are not needed. What should the owners do? What does economics suggest should happen?

Notes:

In your plenary discuss each situation. Get the students to explain how the price mechanism should work.

Reflect that owners are likely to do what they think best even if it is not the wisest thing to do. The video shop could put up prices as a response depending on whether there is any competition. The bakery could increase production of bread or put up prices. The firm making glasses should lay off workers and/or switch to making products that their customers want.

Extension question

Some people say that the consumer is sovereign. Find out what this means. Do you think the consumer or business is more powerful in deciding what is produced?

Guidance on extension question

The idea that the consumer is sovereign is more than the idea that the customer is always right. It is that by buying goods and services, consumers are in a way voting those products and services into power. Firms can research a new product and spend millions on marketing but if the consumer doesn't like it there is little the firm can do. An example is the TouchPad, introduced in July 2011, which was Hewlett Packard's attempt to compete with Apple's iPad. With powerful video capability and impressive processing speeds, the TouchPad was widely anticipated to be among the only products that could compete with Apple. Despite large-scale press events and promotions, the HP TouchPad was a colossal failure and was discontinued almost immediately. As a result of the TouchPad's failure, the company wrote off \$885 million.

Support question

If there is a greater quantity of ice creams offered for sale than the quantity of ice creams wanted by buyers, what will happen to price?

Guidance on support question

This support question allows you to check on understanding of the price mechanism. The answer is that you would expect price to fall. It might be useful to get the student to go further and add an explanation.

Case study: Silver is losing its shine!

Before setting the case study, it might be useful to have a discussion on the impact of changes in demand on price and quantity bought and sold as well as the impact on suppliers of raw materials.

Suggested answers:

1. The demand for silver ore is a derived demand from use in photography and jewellery. If the demand for these products falls, less silver ore is needed.
2. Incomes have risen and the case study suggests that consumers have switched to other products and services which they can now afford, such as luxury designer goods and travel.
3. Facing falling sales, silver jewellery producers would cut back on production and reduce their number of staff. Whether the wages of the remaining workers would fall is less certain but there would be a downward pressure on wages.
4. They would cut production and look for alternative products.
5. Luxury designer goods and travel.

APPLYING

Project work

In this project, the student has to give example of firms that face falling sales or increasing sales and to find out information about these firms. It would be useful to prepare this work to ensure that information is available on firms. You could give a number of firms that you have explored and allow the students to choose from these; this would help those students who find this type of research challenging. Students might need assistance in explaining why sales have fallen or risen. The one issue that you need to deal with and explain is that market sales for a good might be falling but an individual firm's sales might be rising because they are more efficient and competitive. For example, sales for a supermarket chain might be falling because their customers might have switched to a competitor.

Explain what is expected and the format of a report.

Expected outcomes

- Profile of a firm whose sales have fallen with an explanation and details of sales, the number of employees, number of factories/retail outlets etc.
- Profile of a firm whose sales have risen with an explanation and details of sales, the number of employees, number of factories/retail outlets etc.
- Findings presented in a written report

Knowledge check questions

Ask students to complete the knowledge check questions at the end of Unit 2.2 in the Student's Book.

Checking progress

Ask students to complete the Check your progress section in the Student's Book.

Learning objectives

By the end of this unit, students should be able to:

- define demand
- draw a demand curve and illustrate movements along the curve
- understand the link between an individual's demand and market demand
- explain what causes a shift in the demand curve and show this on a diagram.

Key terms

Demand; effective demand; demand schedule; law of demand; extension in demand; contraction in demand; ceteris paribus; demand curve; increase in demand; decrease in demand; conditions of demand; substitute good; complementary good

STARTING POINT

Use these questions in a class-wide plenary introductory session to demand. Write their responses on the whiteboard. A variation of this would be to ask them to write lists of: (a) five things they would like to buy and can afford; (b) five things they would like their parents to buy them that their parents could afford; and (c) five things which are more of a dream. This could prepare the way to an understanding of willingness and ability to pay.

EXPLORING

- People might have an increase in income and so they can afford more expensive fruit or buy more fruit and vegetables. The price of alternatives to fruit and vegetables, such as convenience foods, might have fallen and so people switch away from fresh fruit and vegetables. There might have been a health campaign to persuade people to eat more fresh fruit and vegetables.
- It depends on whether meat is a close substitute to fish. If it is, then as the price of fish increases people would buy less fish and buy more meat.
- There could be a variety of responses. Some students might say that as income rises then more vegetables would be bought, others might say that there could be little impact if they already have enough vegetables. Others might consider that some people would switch the type of vegetables they buy to more expensive items they could now afford.

DEVELOPING**Teaching tips**

- Question and test your students often. The theory of demand and supply is a building block that underpins a lot of the students' study in the course.
- Students need to practise drawing demand curves and the changing conditions which would shift a curve.
- Some good Mathematics or Science students might want an explanation of why economists deviate from mathematical and scientific conventions by putting price on the vertical axis. There is a more complete explanation but the easiest way to explain this is that it is a historical convention.

Suggested answer in-text question 1:

As the price of a good rises, consumers buy less as they switch to other items that are not rising in price so much. This is called the substitution effect. Rising prices also cause consumers to buy less because they cannot afford to buy as much. This is the income effect.

When the price falls, the substitution and income effects will cause demand to rise. Consumers will substitute cheaper products for the more expensive ones. They will also buy more because of the income effects, as they can afford to buy more at the cheaper price.

Application task: The market for coffee

This asks students to plot a demand curve of coffee from data provided (see Figure TG 2.3.1 below). Ensure that students use the correct axes. Students should explain that as the price of coffee falls, the quantity demanded increases.

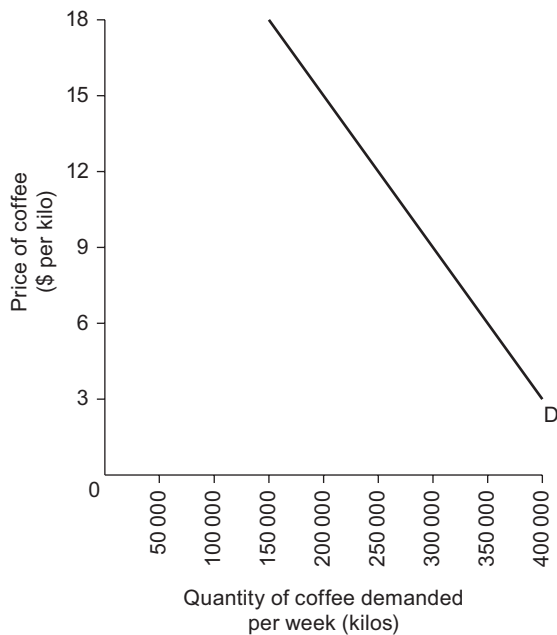


Figure TG 2.3.1

Suggested answer in-text question 2

The question is based on a conditions of demand table. Students are asked to come up with their own examples. This task could be set as individual work or as plenary discussion. Further examples are shown below.

Factor	Example and effect
Real disposable income	Income tax rises, leading to less money available to spend and there will be a decrease in demand for most goods, such as a decrease in demand for holidays
Tastes and preferences (fashion)	Publicity/photo shoot for the clothes a celebrity wears leads to an increase in demand for the fashion brand
Population	An ageing population leads to increase in demand for hearing aids
Prices of substitute products	Price of pasta falls leading to a decrease in demand for rice
Prices of complementary products	Increase in price of knives leads to reduced demand for forks

Additional activity

Auction to illustrate demand

This activity introduces students to demand and supply in an engaging way.

Equipment required:

- A block or bar of chocolate (or several) or some other healthier item of value that students may like to buy
- Whiteboard
- Counters to be used as money. Each counter represents 50 cents

Write a list of prices on the board, usually starting from a low price – such as 50c, and ending with a very high price, such as \$4. (Usually at least 8 different price options is best: 50c, \$1, \$1.50, \$2.50, \$3.00, \$3.50, \$4.00 \$4.50). Distribute the money in sealed envelopes. Not everyone will get the same amount. For example, if the class size is 28, distribute as follows:

\$4.50 0 envelope

\$4.00 1 envelope

\$3.50 2 envelopes

\$3.00 3 envelopes

\$2.50 4 envelopes

\$2.00 5 envelopes

\$1.50 6 envelopes

\$1.00 7 envelopes

Tell the students that the supply of items is fixed. Once the items are sold they are gone.

Hold up the chocolate bar/s or other item/s and asks the class 'Who is willing and able to buy this X for ... (the price)?'.

Write the quantity demanded next to the price, and proceeds to do this for each of the possible prices listed.

You need to impress upon students that they are indicating their willingness and their ability to purchase the chocolate at that price. Explain that what the class has created together is called a 'demand schedule'.

Work with the students to unpack the ideas behind demand for a product including:

- that demand indicates a willingness and an ability to purchase
- that the demand schedule represents all the quantities demanded at all possible prices
- that this demand schedule can be used to create a demand curve/graph.

You can then ask a student to come up to the whiteboard and plot the graph, having shown that the price is plotted on the y (vertical) axis and quantity demanded on the x (horizontal) axis.

The results can be used as a basis for discussion of how and why the demand curve is downward sloping, and also the utility and benefit gained from purchases. It can also be used to discuss factors affecting demand.

Extension question

Can you think of any products where an increase in price might lead to an increase in demand?

This extension question is partly about Giffen goods. A Giffen good is typically an inferior product for which, when there is a rise in price, demand rises. Robert Jensen and Nolan Miller, two Harvard professors, have shown that poor Chinese consumers purchase more rice or noodles (their staple foods) as prices go up.

People need a certain amount of calories to survive. People can either get that by consuming rice and perhaps some vegetables alone, or by eating rice, vegetables and a few pieces of meat. As the price of rice goes up, they cannot afford to supplement the rice with meat and end up buying more rice.

Another example is the status or rare goods where high-priced items are sought after purely because of the status attached to them. In 2015, for example, Rolls Royce reported increased sales despite price rises and a recession.

There are other explanations including an increase in income inequalities and the growth in average incomes in particular parts of the world such as South East Asia.

Application task

Students have to put a tick in the box to show whether the change will lead to either a contraction or extension in demand (a movement along the demand curve) or an increase or decrease in demand (a movement of the whole curve). The correct answers are shown in the table below.

Change	Extension in demand	Contraction in demand	Increase in demand	Decrease in demand
Price of oranges increases		x		
Orange juice drinks become more popular			x	
A popular new film has been released – how will the cinema market be affected?			x	
Price of jeans decreases	x			
How does a decrease in income tax affect the demand for holidays?			x	
There is an increase in the number of babies born. How is the demand for nappies affected?			x	

Case study

Coffee

One way to prepare students to discuss demand factors is to start with another example. Ask what determines the demand for going to watch a film at a cinema. What would cause more people to go to the cinema? What would happen to the demand for ice cream and drinks if more people went to a cinema?

Suggested answers

1. The question is based on coffee. Initially the students are asked to plot a demand curve on the diagram they drew in the application task.
2. The second question asks for three factors that have led to more people visiting coffee shops and so to an increase in demand for coffee. Examples answers are: coffee shops offer a wide range of drinks which appeal to people's tastes; coffee shops are comfortable meeting places where people can talk; people can use the internet without extra charge in coffee shops for work and leisure purposes.
3. The third question asks whether increased demand for coffee might affect demand for tea and hot chocolate. This will depend on whether they are close substitutes and also what is happening to their prices. Some students might say that as coffee shops such as Starbucks sell coffees, teas and hot chocolate then more people going to these outlets might mean the demand for other drinks such as tea and hot chocolate might also increase.

APPLYING

Project work

The project work asks the students to investigate using airline flights to four other countries. They will find out price variations during the year. It would be useful to undertake some preparation investigating a variety of airline websites as well as online agencies. It might be useful to suggest a number of countries or names of airports. Travel websites sometimes request inputting the names of airports rather than countries. Prices might also vary from airline to airline.

Students might observe that buying a long time in advance will mean that flights will be cheaper. Friday flights are often more expensive as business customers often return home on Fridays. Tickets vary in price depending on the type of ticket. There is a hierarchy of prices from the cheaper Economy to the more expensive Business Class and First Class. Holiday seasons will tend to lead to higher prices. Flights around Chinese New Year from London to Beijing, for example, are very expensive compared to other times of year.

Expected outcomes

- Presentation of research of price of flights to four countries including price variations at different times of the year such as school holidays
- Explanation of price variations

Knowledge check questions

Ask students to complete the knowledge check questions at the end of Unit 2.3 in the Student's Book.

Checking progress

Ask students to complete the Check your progress section in the Student's Book.

Learning outcomes

By the end of this unit, students should be able to:

- define supply
- draw a supply curve and illustrate movements along the curve
- understand the link between an individual's supply and market supply
- explain what causes a shift in the supply curve and show this on a diagram.

Key terms

Supply; supply schedule; law of supply; supply curve; extension in supply; contraction in supply; increase in supply; decrease in supply; conditions of supply; indirect tax

STARTING POINT

Place the students in pairs and ask them to discuss the starting point questions. Get pairs to present their choices to the rest of the class noting down on the whiteboard the most popular choices. Lead a discussion on the top three choices as to why these were chosen. They might mention that they chose on the basis of trying to make as much money as possible for the charitable event and so chose items that they know they would be able to sell. Others might say they chose low-priced items as they would be more likely to sell these.

EXPLORING

Place the students in pairs and then invite comments in plenary session. Students could refer to profitability, the demand for products and prices.

DEVELOPING**Teaching tips**

- Students often have a greater problem understanding supply than demand as they are not used to looking at the world from a producer's point of view. Students can think that a determinant of supply is demand as no one would produce anything if it was not wanted. It is important that students quickly realise that price is the independent variable and quantity supplied is the dependent variable. It might be necessary to relate this to the issue of causality.
- It is useful to relate the positive slope of the supply curve to the positive relationship in the law of supply.

Suggested answer to in-text question 1:

Wanting to supply is not the same as supply. This is because it is possible to want to supply a particular good but the price is not sufficient to make a profit and so a particular seller might decide it is not worthwhile. Other things being equal, the supply provided by producers will rise if the price rises because all firms look to maximize their profits.

Application task: The market for coffee

Students will draw a supply curve from the data supplied and indicate that as price rises suppliers will want to offer more coffee beans to the market place.

Take the opportunity to deal with possible confusion of students at this point. They see that as price rises producers supply more. Some students think that the price going up will reduce demand resulting in a surplus in the market. They need to understand that the supply curve just shows the relationship between price and quantity supplied. It becomes easier to understand when they examine equilibrium.

In addition, some students forget that what is driving an upward sloping supply curve is the law of increasing costs. This is the same phenomenon that causes the PPC to be bowed outwards. If they imagine some producers having lower costs than others (for example, because their land is more fertile, their oil is nearer the surface or their workers are more productive) then students begin to understand why the S curve slopes upwards.

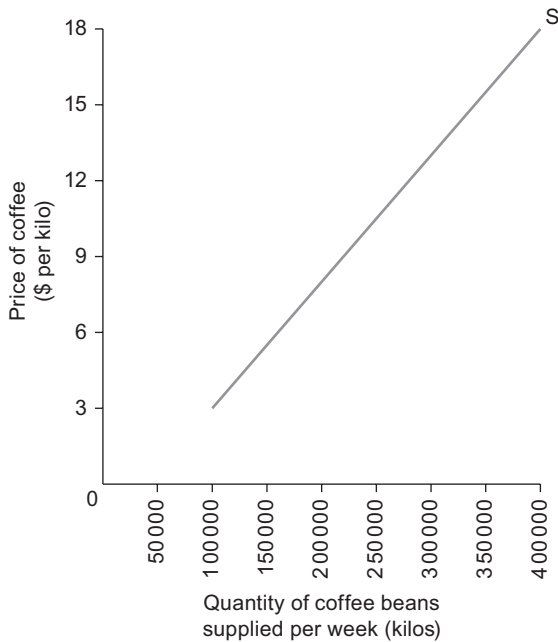


Figure TG 2.4.1

Suggested answer to in-text question 2:

The supply curve would shift to the left.

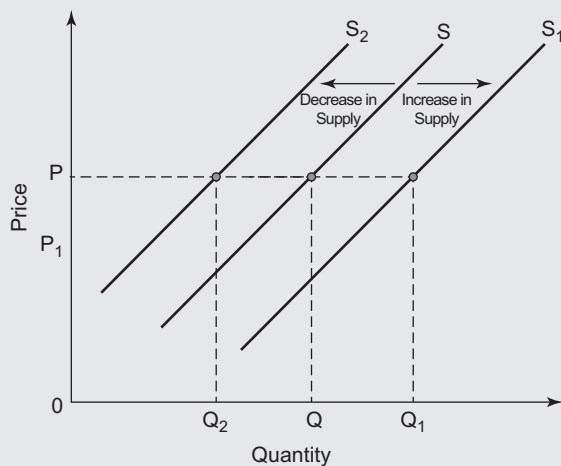


Figure TG 2.4.2

Suggested answer to in-text question 3:

The answer is below the question in the Student's Book

Application task

Students need to put a tick in the box to show whether the change will lead to either a contraction or extension in supply (a movement along the supply curve) or an increase or decrease in supply (a movement of the whole curve). Students should only tick *one* of the four options. The correct answers are shown in the table below.

Change	Extension in supply	Contraction in supply	Increase in supply	Decrease in supply
Price of tea increases	x			
Wages of tea pickers increases				x
A more efficient machine is developed to process tea leaves			x	
Very hot weather causes a poor harvest				x
Government increases a subsidy on tea				x
An increase in the number of growers harvesting tea	x			

Additional activity

Market stall

Use Activity sheet 2.4.

- This activity is based on running a market stall in a busy market. Students are stall holders selling fresh fruit and vegetables. Hand out the instructions to this activity which provides a number of scenarios which the market stall holder has to respond to.
- This activity can be an individual piece of work or students can work in pairs.
- After the activity, run a plenary session and compare answers.

Case study

The global supply of sugar in 2017

- Introduce the case study by asking if there was a bad harvest for an agricultural product what would happen to the supply curve. Ask about impacts on price and quantity supplied.
- Ask what would happen to a supply curve if a government gave farmers subsidies. Ask about impacts on price and quantity supplied.

Suggested answers:

Students will have to decide what they think will happen to the world production of sugar. The only data they have is that the Mauritian output will fall by 7% due to poor weather conditions. However, no figure is given as to the impact this would have on the global supply of sugar. The case study said that Brazil is the largest producer and has a good harvest, as has Russia. Whether incentives have come in time to impact on Indonesian output for 2017 is not known. If students feel that the positives outweigh the negatives then global supply of sugar would increase and they could reflect this on a supply curve shifting to the right. If they feel that the Mauritian impact outweighs the others then they will have a supply curve shifting to the left. Some students might point out that there is insufficient data to state what impact there would be on the global supply of sugar as no relative figures are given. If they argue this case they would be unable to draw a diagram.

APPLYING

Project work

Students will need to be directed to appropriate websites to obtain this information. Students need to be aware that oil supply figures are often given in barrels. A barrel of oil is equal to 159 litres, 42 US gallons or 35 imperial gallons. Statistics tend to be for crude oil. Crude oil is refined to make a number of products including petrol and this is the focus of the extension question.

Out of every 42 gallon barrel of crude oil:

- 20 gallons is distilled to make petrol
- 11 gallons is distilled to become diesel or heating oil.

Students could cover factors such as the policies of OPEC, the demand for fuel from China, political factors such as wars and civil unrest in oil producing countries, some oil fields running out, or new fields being found.

Expected outcomes

- Research notes on the supply of oil
- Presentation of factors that influence the world supply of crude oil with up to date information
- Data on the world supply of oil in the last five years
- Newspaper article on changes in the world supply of oil

Extension question

When crude oil is distilled, a variety of products are produced, including gasoline/petrol, naphtha for making chemicals, kerosene for aircraft fuel, diesel oil for cars, lorries and buses and bitumen for roads and roofs.

What problems would it cause crude oil suppliers and refiners if the demand for bitumen for roads and roofs increased dramatically? How would this impact on the supply of the other crude oil products? Are there any solutions to the impact?

Students could point out that if there was an increase in demand for one product, such as bitumen, this could lead to an increase in price and more being supplied. However this means that more crude oil would have to be produced which would mean the supply of all the other products would increase. Solutions might include new technology and improvements in the cracking process or storing the extra supply of the other products rather than putting them on the market.

Knowledge check questions

Ask students to complete the knowledge check questions at the end of Unit 2.4 of the Student's Book.

Checking progress

Ask students to complete the Check your progress section in the Student's Book.

Learning outcomes

By the end of this unit, students should be able to:

- define what is meant by market equilibrium
- draw demand and supply schedules and curves and identify the equilibrium price and sales in a market
- draw demand and supply schedules and curves to identify disequilibrium prices, shortages and surpluses in a market

Key terms

Surplus or excess supply; shortage or excess demand

STARTING POINT

Students could discuss this question in pairs and you could invite some pairs to go through their responses. Alternatively, you could lead a discussion. Students might refer to using online sites for selling used products where potential customers bid for items. This would also be a source of information on prices. Students might have looked in local newspapers where people advertised similar products to gauge the prices.

EXPLORING

- The exploring questions build on the additional activity in Unit 2.4 of the Teacher's Guide. Firstly, a fruit and vegetable seller can choose any price they wish to charge for their products but it is the consumer who will decide whether they are prepared to pay that price. If no or few products are being sold then it implies that they are pricing too high. Their price will be influenced by the amount they paid wholesalers as well as the prices that other fruit and vegetable sellers are charging for similar products.
- It is likely that they will see customers switch to other sellers and so revenue will fall. It will depend if all their prices are higher or just on some selected items. Also they might sell better quality produce than their competitors.
- It is likely that customers will switch to that seller depending on the price differentials and other variables such as quality.

DEVELOPING**Teaching tips**

- Demand and supply is at the heart of the subject and understanding how prices are determined gives a good grounding for the rest of the course in areas such as wage determination, in product markets and exchange rate determination in currency markets.
- Understanding price determination is an example of logical thinking. It might be useful to undertake some logical thinking exercises before looking at theory.
- It is important to embed theory in real life examples. This will make it easier to grasp the importance and relevance of key concepts.

Application task: The market for coffee**Suggested answers:**

- Students will complete the demand and supply schedule using the information given in Unit 2.3 and Unit 2.4.
- Students will draw a demand and supply curve based on the schedule they have completed. Ensure that the diagram is correctly labelled.

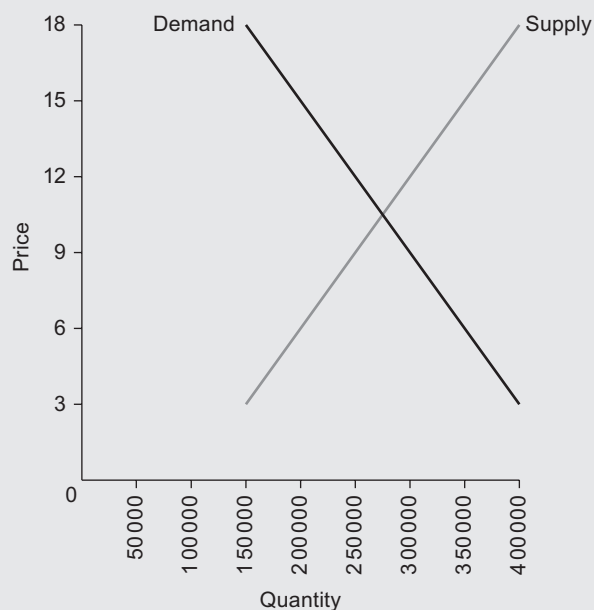


Figure TG 2.5.1

- The diagram shows that there is one price where the amount consumers are able and willing to buy is the same as the amount suppliers are willing and able to offer.
- At \$18, 150,000 kilos would be demanded and 400,000 kilos would be supplied. Price is likely to fall as there is excess supply.
- At \$6, 350,000 kilos would be demanded and 150,000 kilos supplied. Price would rise because of excess demand.

Suggested answer to in-text question 1:

The diagrams and explanation are provided underneath the question in the Student's Book

Additional activity

Use Activity sheet 2.5a

Price survey

- This activity could be set as a homework or you could organise a short field trip. If a field trip is organised then the institution's policy regarding the trip needs to be followed. As this is a survey of prices charged for items in shops, alerting your local shops would be prudent and timing the trip to times when the shops are less busy will be a good idea. On the activity sheet there are some suggestions for products that are to be surveyed but you could change these. Also, extra lines have been provided to add appropriate items.
- The field trip would be appropriate for pairs work. Ask the pairs to present their information in a brief report. Presentations could use tables and diagrams.
- Run a plenary to go over the main issues raised by the survey. One of the issues is that students faced with a demand and supply diagram view it as a static model rather than a dynamic model (they do not need to know these terms). Prices are constantly changing as markets are always on the move.

Support question

This support question is to enable you to identify whether some students have understood work on demand and supply to date.

You work at the weekend at a store selling computer games. There is another video games store opposite. Your manager is trying to decide what price to charge for a new video game that has had good reviews.

She is worried that if she priced it too high then she would not sell all the stock she has bought. The shop's customers are mainly in the 18–25 age range. Recently a factory where many of them work has announced that they have to reduce the hours of their workers.

- Why might the manager at the video games store be worried?
- What information might help her to make her decision?
- What do you think she should do?

The students could say that she is worried her competitor might charge a lower price so they pick up all the sales. If she priced low, then she would make less profit. She needs to know what prices people are prepared to pay for the game, whether the game is as good as the initial reviews have stated and that her customers who are mainly in the 18–25 age group might face a fall in income.

Case study

Food price controls in India, China and Venezuela

- It would be useful to check that students know how to show both minimum and maximum prices on a demand and supply diagram.
- Discuss the reasons why food price controls might be used. They are usually implemented as a means of direct economic intervention to manage the affordability of certain goods.

Suggested answers

1. Students will draw a diagram similar to that used in the Student's Book.

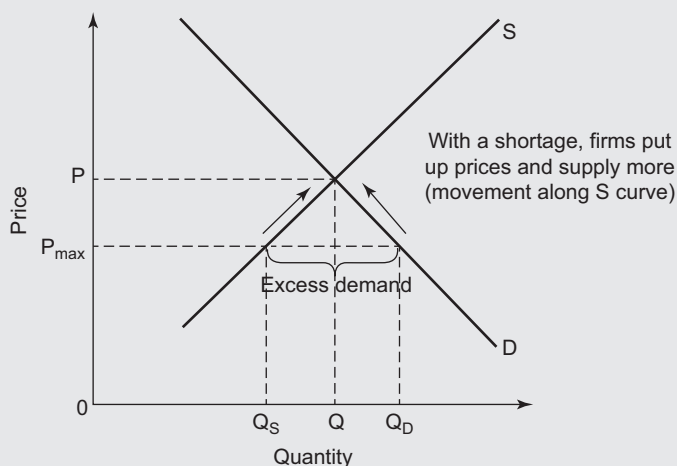


Figure TG 2.5.2

Government sets the price at P_{max} . At this price quantity demanded is at Q_D but the amount that suppliers are willing to sell is Q_S . This means there would be excess demand.

2. Producers might seek other markets for their products such as a nearby country which does not have price controls or switch to produce that does not have price controls. They would not sell price controlled items to supermarkets as profits and shelves would be empty of these items. Consumers would have to queue at shops or resort to buying on the black market. Some consumers would go without.

APPLYING

Project work

The project requires students to find examples of what happens when popular sporting events are sold out quickly and why the equilibrium price cannot be reached. Review source information before setting this project. Students are likely to comment that stadium capacity will limit tickets. Research might show that the consequences of this are that stadiums will set prices to ensure that all are sold. Popular football clubs can charge prices significantly above the average price for others in their league. For some events, a black market emerges (through ticket touts) where high prices are charged. Organisers try to prevent resale to

stop this activity. Some students in their research might find reference to the supply curve becoming perfectly inelastic at capacity.

The extension question refers to ticket touts who buy tickets and then resell them at much higher prices. They can do this because for major sporting events demand exceeds supply. Many sporting events now prohibit the resale of tickets and refuse to let people in who are not the original buyers. This is to prevent this activity taking place.

Expected outcomes

- Examples of sporting events where tickets are sold out quickly
- Consequences in terms of prices that can be charged
- Existence of secondary black markets

Knowledge check questions

Ask students to complete the knowledge check questions at the end of Unit 2.5 in the Student's Book.

Checking progress

Ask students to complete the Check your progress section in the Student's Book.

Learning outcomes

By the end of this unit, students should be able to:

- explain what causes the equilibrium price to change
- draw demand and supply diagrams to illustrate these changes in market conditions
- analyse the consequences of these changes in market conditions for the equilibrium price and sales.

STARTING POINT

Place the students into pairs and set the questions. Ask them to identify their three products. They might choose seasonal products such as fruit where price falls when there is plenty of fruit in the shops. Out of season prices might rise as the fruit would have to be imported. Students could refer to petrol prices which fluctuate when oil producers use cutting production to raise price.

EXPLORING

- This builds on the questions in Unit 2.5. When there is a popular sports event, as there is a set capacity for the event, demand outstrips available tickets. Popular football clubs, for example, can charge substantially more for tickets than less popular clubs.
- This is because households with children are limited to when their children are on holiday. This then creates a surge in demand for holidays when schools are closed. Prices are lower at other times to attract households which are not restricted by school holidays.
- If there has been good weather which results in a good harvest then more mangoes will be available. It is likely that if other things do not change prices will fall.
- It is likely that if a press report said mangoes contribute to a healthy diet and they are available demand would increase and price would rise.

DEVELOPING**Teaching tips**

- Students need to practise diagrams as much as possible. One technique at the start or end of lessons is for you to suggest changes in conditions and to get students to come to the board and draw diagrams for those changes.
- When answering the questions in this unit, it is a good idea to ask the students to close their Student's Book.
- Encourage logical thinking by a step-by-step approach to changes in demand and supply curves.
- Use the 'What will happen?' additional activity as a discussion forum where rational ideas and consequences can be explored.

Additional activity: Shifts in supply and demand**Use Activity sheets 2.6a and 2.6b**

This activity can be used in small groups, using Activity sheets 2.6a and 2.6b, or as a whole-class activity. For a whole-class activity, draw four supply and demand diagrams on the board each illustrating a different scenario (rightward shift in supply, leftward shift in demand etc). Each diagram is drawn using a different colour. Students each have four small coloured cards matching the four diagram colours. Read out a range of different scenarios (for example, impact of a rise in incomes on the market for luxury cars). For each scenario students hold up the coloured card matching the correct diagram.

Application task: The market for coffee

Students would draw the demand and supply curve from the data and then draw the new demand curve. Demand has shifted to the right. This means that equilibrium price has risen and more has been bought and sold.

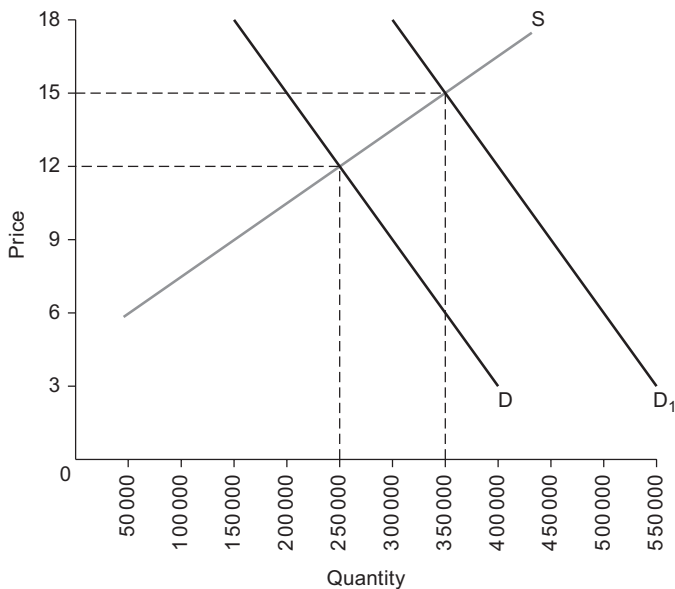


Figure TG 2.6.1

Suggested answers to in-text questions 1 and 2:

These questions come after an explanation for both the increase in supply and the decrease in supply. It would be useful to get the students to draw these diagrams without looking at their books. In their explanation, it could help them if they write it in numbered points or as a flow diagram such as: Step 1 Decrease in costs of production; Step 2 Supply curve shifts to the right so that more can be supplied at every price; Step 3 There would be excess supply at the previous price; Step 4 Price would fall and there would be a movement along the demand curve until a new equilibrium is reached. The same approach can be taken with the decrease in supply.

Application task: The market for coffee

After the increase in demand, the price rises from \$12 to \$15 and sales rise from 250,000 kilos per week to 350,000 kilos per week.

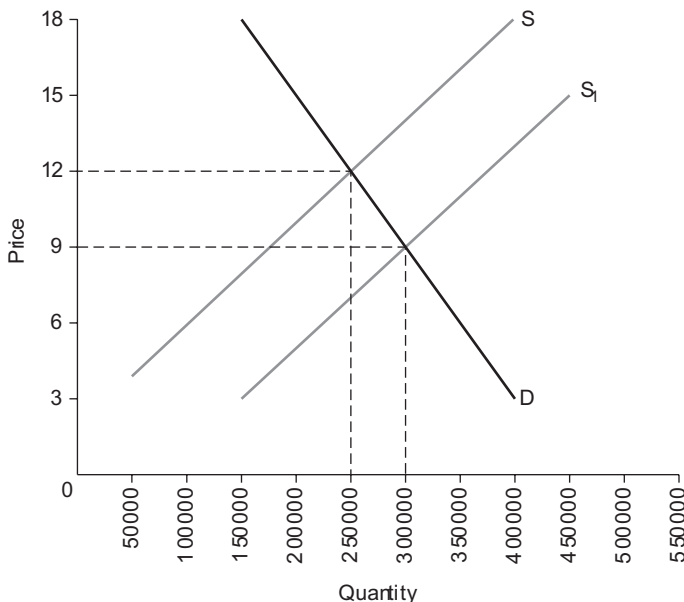


Figure TG 2.6.2

Suggested answer to in-text question 3:

The diagrams that the student needs to use are above the question in the Student's Book. You could provide some scenarios that students could use to provide a focus for their diagrams. For example the scenario could be that there is an advertising campaign for new trainers and the use of new technology brings down the cost of making trainers.

Case study

The price of rice

- Discuss why the supply and price of rice is important in many countries.
- Go over the relationship between good harvests and prices of agricultural products.

Suggested answers:

1. The world supply of rice is expected to increase because of good weather conditions. The supply curve would shift to the right.
2. Demand is expected to increase caused by an increase in population and a rise in incomes in developing countries. The demand curve would shift to the right.
3. The students would draw a diagram showing a shift to the right in the demand curve and a shift to the right in the supply curve.
4. The article suggests that prices are rising so this means that the shift in demand creating upward pressure on price is greater than the change in supply caused by good weather. Their diagram could show this. If price in their diagram falls, it means their diagram shows that the impact on supply is greater than the impact on demand.

Additional activity: What will happen?

Use Activity sheet 2.6c

This activity can be completed towards the end of the unit. The activity should be set as an individual piece of work. Explain that they need to look at each statement on the activity sheet and explain what is likely to happen. They have a list of possible things that could happen but some of the examples are designed to generate discussion.

The responses will be useful for you to see students' use of logic and also common sense. They will also aid you in terms of checking understanding.

Suggested answers:

These are a range of possible responses. It is important to use the students' responses as a basis for discussion.

Statement	What will happen?
A shop selling sweets decides to drop the price of all its chocolate bars.	<i>More people would buy chocolate bars or are attracted in for the first time by the price drop – movement down a demand curve; people switch from other confectionary at the shop so there might not be a gain.</i>
There has been a very wet winter and the strawberry harvest is very poor.	<i>Supply is limited; the supply curve shifts to the left and, so other things being equal, price would rise; low quality strawberries might cause people to switch to other fruits.</i>
Incomes of 18-25 year olds have risen over the past year. What would this mean for the demand for salt?	<i>Salt is a cheap product and people's spending patterns of salt might not be influenced by a rise in income. There is only a limited amount of salt that people require.</i>
A new type of chip for use in mobile phones has reduced the costs of manufacture.	<i>A change in technology causing a fall in production costs would cause the supply curve to shift to the right. This would mean that price would fall. However, if demand for phones was also changing as a result of, for example, a rise in income then this could impact on prices.</i>

Incomes of people over 60 have risen.	<i>Demand for products consumed by over 60s would shift because of the rise in incomes. However, if they decide to save more, the impact on prices might be more limited.</i>
In the town, there are two fast food restaurants. One of these has distributed 20% off meals vouchers.	<i>A 20% voucher is an example of promotion (advertising); this should shift the demand curve to the right. However, there might be brand loyalty and people prefer the other restaurant or there might be quality issues. It also depends on whether the people who receive the vouchers want to use them.</i>
The government increases the tax on petrol.	<i>An increase in tax on petrol would shift the supply curve to the left and so prices might rise and less petrol might be bought and sold. However people might need to use their cars so there might not be a significant fall in demand.</i>
A fall in the birth rate means that the number of children under 12 has fallen substantially.	<i>The decline in the number of children under 12 would mean that there is a fall in population. Demand curves of products bought for children would fall. Prices should fall.</i>
As a result of increased paper costs, all newspapers produced in a country have faced an increase in their costs by 10%.	<i>The supply curve would shift to the left and so prices would rise; some newspapers might decide to absorb the price increase so as not to lose customers. For many newspapers, their circulation is important because of the advertising they are seeking to attract.</i>
Coffee shops are having to pay more for top quality coffee because of a world shortage of quality beans.	<i>An increase in the cost of quality beans would affect the coffee shops' costs and the supply curve would shift to the left and so prices would rise; however the shops could use lower quality beans instead.</i>

APPLYING

Project work

In this project, provide appropriate sources of information, especially regarding historical data. Initially, students need to define what is meant by price. Is it the price some mobile phone providers charge for a phone? For many contracts the phones are 'free'. Is the price of a phone not part of a contract? Also students might observe that the same model is available at different prices from retailers. Students might explain that when a new phone model is introduced, price is initially high but this comes down over time. Others might point out that mobile phone manufacturers might discount models before a new model is introduced. Students should also use demand and supply analysis discussing the status symbols of some models or the impact of advertising on demand (tastes), or the impact on supply of new technology causing costs of production to fall. Some students might combine an increase in demand with an increase in supply and show that despite an increase in demand there is still a fall in price. Students should be encouraged to use diagrams in their explanations and present all the information in a report. Discuss the attributes of a news report and the differences between a news report and an essay. Remind students that it is important to write with the audience in mind. Consider making this a joint project with the English department.

Expected outcomes

- Comparisons of prices of different models
- Historical data of model prices over the last two years
- Analysis of changes in price using demand and supply analysis and empirical evidence
- Script of a news report

Knowledge check questions

Ask students to complete the knowledge check questions at the end of Unit 2.6 in the Student's Book.

Checking progress

Ask students to complete the Check your progress section in the Student's Book.

Learning outcomes

By the end of this unit, students should be able to:

- define price elasticity of demand (PED)
- calculate PED using the formula and interpret the significance of the result
- draw and interpret demand curve diagrams to illustrate different PED
- explain the key influences on whether demand is elastic or inelastic
- explain the relationship between PED and total revenue, both in a diagram and as a calculation
- analyse the significance of PED for decision making by consumers, producers and the government.

Key terms

Price elasticity of demand; price elastic demand; price inelastic demand; unit elasticity of demand

STARTING POINT

These starting point questions lead the way to the discussion of price elasticity of demand. They start with an approach of helping the students to grasp the concept before they know the terminology.

After allowing time to discuss the questions, invite pairs to offer their responses and note key points on the whiteboard.

Suggested answers

1. Pairs are likely to suggest that if all prices increased by 10%, they might stop buying the drinks. If there were no other choices, such as free water, then they might have to pay the extra 10%. Some pairs might suggest that they would bring drinks from home or buy drinks at a lower price from a shop outside school. Some might say that it would have no influence as they do not buy drinks at school. This is a valid response as students will give a response based on their own personal experience. This would be an opportunity to ask those students to put themselves in the position of someone who did buy drinks at school.
2. Pairs might say that they might switch to a drink other than Pepsi or it depends on how much they prefer Pepsi to other drinks. Some might say they are not allowed to buy carbonated drinks anyway.
3. Pairs could state in the first question the price impacts on all drinks so you do not have much choice, but for the second the price impacts on only one. Others could comment that it might be influenced by how much they like Pepsi compared to other drinks, whether the other drinks on offer are appealing or whether they buy drinks in the first place.

EXPLORING

The exploring questions invite pairs to discuss the responsiveness of demand to changes in price for goods and services. It is important to run a plenary session to make sure that there is a good grounding before the concept of price elasticity of demand is investigated further.

- Pairs might suggest holidays, luxury foods such as expensive cakes or lobster, products such as televisions, music systems.
- Pairs might suggest 'essentials' such as basic foods, fuel for the home or car, childcare, rent for their homes.
- In the plenary, use students' responses to lead to a discussion. The starting point could be that basic foods are essential and that people **need** to eat, they **need** to get to work, they **need** to ensure their children are looked after to enable them to go to work. Holidays, although welcome, are not essential: they are a luxury.

DEVELOPING

Teaching tips

- Try to give students as much practice as possible in working out price elasticity of demand.
- You might have to revise how to calculate percentages.

Suggested answer to in-text question 1:

If a business discovers that consumers are not sensitive to changes in the price, they should increase the price as demand is price inelastic. The change in demand is proportionately smaller than the change in price and so revenue will rise.

Suggested answers to Worked Example questions:

- Worked example 1: PED is -0.5 , which means that the percentage fall in demand is smaller than the percentage increase in price. This shows that consumers are not sensitive to price change. This firm should increase its price as revenue would increase.
- Worked example 2: PED is -2.5 , which means that the percentage fall in demand is greater than the percentage increase in price. This shows that consumers are sensitive to price changes. This firm should decrease its price as revenue would increase.
- Worked example 3: PED is -1 , which means that the percentage decrease in demand is the same as the percentage increase in price. There is no point in changing price.

Suggested answers to in-text questions 2–6:

2. Price increases by 50% in the first example and by 0.1% in the second example. Quantity decreased by 33.3% in the first example and by 10% in the second example.
3. Revenue has increased so much because, with the PED of oil being only -0.2 , the demand for oil is not very sensitive to price changes, in other words demand is very inelastic.
4. You would raise price because this would result in an increase in revenue.
5. The revenue would remain the same because the percentage change in price is matched by an equal and opposite change in quantity demanded.
6. Knowing the price elasticity of demand shows what happens to revenue when price changes. This is vital to a firm to help them with their decision making as well as understanding the possible impact of decisions.

Application task

The application task asks the students to calculate price elasticity of demand for coffee, tea and iced coffee. It is useful to provide opportunity for students to practise calculations. Practise calculation of percentages and ensure that everyone is able to do so before answering these questions. Remind students that it is good practice to show their workings when undertaking calculations. If students have practised these calculations, you could set these questions under test conditions.

Students should start with the formula they are going to use for the calculations:

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

$$\frac{\text{change in quantity demanded}}{\text{original demand}} \times 100 \quad \text{and} \quad \frac{\text{change in price}}{\text{original price}} \times 100$$

Question 1:

Coffee:

$$\frac{50}{1000} \times 100 \quad \text{and} \quad \frac{0.22}{2.20} \times 100$$

5% fall in demand, 10% increase in price. PED for coffee = **-0.5 (price inelastic)**

Using the same technique, the students would calculate:

Tea: There is a fall in demand of 12.5% and **PED = -1.25 (price elastic)**

Iced Coffee: There is a fall in demand of 10% and so **PED = -1 (unity)**

Question 2:

The question looks at the effect of a price decrease:

Coffee: There is a 5% increase in demand so **PED for coffee = -0.5 (price inelastic)**

Tea: There is a 25% increase in demand so **PED for tea = -2.5 (price elastic)**

Iced Coffee: There is a 5% increase in demand so **PED = -0.5 (price inelastic)**

Question 3:

Students would state that if they want to increase revenue they should **raise** the price of coffee as it is price inelastic. Revenue would rise from **\$2200 to \$2299**.

They should **lower** the price of tea as it is price elastic and revenue would rise from **\$1600 to \$1800**.

They should leave the price of iced coffee **unchanged**. When price increases, price elasticity of demand is unity and so the price increase will have no impact on revenue. If they lowered the price it becomes price inelastic so that revenue would fall if they lowered price.

Total revenue before price changes is **\$5050**. Total revenue after price changes is **\$5349**.

Suggested answer to in-text question 7:

Students could mention services where there are few alternatives such as commuting to work or the provision of water services when there is just one provider. Students would then consider products they might buy even if prices increase. These could include going to a music event or sports event, for example.

Additional activity: Charlie's

Use Activity sheet 2.7.

This activity looks at Charlie's, a petrol station and café.

- Before looking at the data, **Question 1** asks the student to give advice. They could say that as there are no other petrol stations, people might have to fill up and so he might be able to increase petrol prices. Some might say that petrol is an inelastic product so that he will see an increase in revenue if people have no choice. They might say that the café faces competition from a fast food restaurant and so customers might be more price sensitive and so if prices are elastic then he should not increase price.
- **Question 2** requires the student to work out at least the percentage changes. For petrol, there is a 32% increase in price and a 25% fall in demand, so demand is price inelastic and revenue would increase if price increased. For pizzas, there is just over a 9% fall in price and a 50% increase in demand. Demand is price elastic and so a fall in price will lead to an increase in revenue.

Extension question

Charlie is thinking of offering loyalty vouchers. He is considering offering a 50c voucher for people who buy petrol to be used in the café or a 50c voucher to be used for petrol if people buy a pizza. What should he do?

Support question

Charlie also sells ice creams.

These ice creams sell for \$1 and he sells 100 a day. As a trial, he reduced price to 50c and sells 300.

- a) Has this price change been worthwhile?
- b) Is the demand for ice cream price elastic or price inelastic?
 - With the **Extension question** students could say that it would be better to offer a 50c voucher for pizzas as they are price elastic. Using the voucher the other way round is not recommended as the demand is price inelastic.
 - With the **Support question** a simple example is used. Students could point out that ice cream sales have gone up from \$100 to \$150 so it is worthwhile. The student does not need to work out the PED but to recognise that as revenue has risen after a price fall demand is price elastic for ice creams.

Case study:

Chocolate

- This case study asks the student to suggest what the price elasticity of demand for chocolate is. Make sure students know how changes in price impact on revenue when demand is price elastic or price inelastic. A review of the determinants of price elasticity would be useful.

Suggested answers:

1. The article states that the demand for chocolate has grown due to the worldwide popularity of chocolate and the perceived health benefits of chocolate. It suggests that chocolate consumers are price insensitive which indicates that chocolate is price inelastic despite consumers thinking it is a luxury item.
2. If chocolate is price inelastic then raising price would increase revenue as the percentage increase in price is greater than the percentage fall in demand.
3. This will depend on the respective PED for the different chocolate bars rather than chocolate as a whole and whether the bars are close substitutes. If the PED for the bars produced by the firm is identical to all the other firms then it would be worth increasing price. Should one firm put up its prices for chocolate bars while the rest of the firms in the market leave their prices unchanged?
4. This is unlikely. Chocolate bars vary – some are luxury high premium brands while others are economy brands. Brand loyalty could be a factor. Firms try to differentiate their chocolate bars through adding flavours or fruit and nuts. It is likely that firms will face different PED.

APPLYING

Project work

The project work asks for students to advise the school on pricing decisions for sales of food and drink. Suggest a research method and also work out how they can interact with their classmates. Although designed as an individual piece of work, this could be adapted for pair or group work. Students should be encouraged to use key terms in their presentation.

Expected outcomes

- Research data which contains food and drink, price information and responses
- Summary of research
- Recommendations for price changes with justifications
- Use of economic terminology
- Presentation of findings and recommendations to the class and explanation of impact on revenue.

Knowledge check questions

Ask students to complete the knowledge check questions at the end of Unit 2.7 in the Student's Book.

Checking progress

Ask students to complete the Check your progress section in the Student's Book.

Learning outcomes

By the end of this unit, students should be able to:

- define price elasticity of supply (PES)
- calculate PES using the formula and interpret the significance of the result
- draw and interpret supply curve diagrams to illustrate different PES
- explain the key influences on whether supply is elastic or inelastic
- analyse the significance of PES for decision making by consumers, producers and the government.

Key terms

Price elasticity of supply; price elastic supply; price inelastic supply; unit elastic supply; short term; long term; mobility of factors of production

STARTING POINT

The starting point questions could be answered in pairs. Alternatively, if you think it more appropriate, use the questions to lead a class discussion. Write key points on the whiteboard. If pair work is used, invite selected pairs to respond and write key points on the whiteboard. Follow this up with a class discussion.

For these questions, the expected response is that the school has given facilities and a given number of teachers so they might be unable to accept more students. Be prepared for responses such as it depends on how many. If it is a few then the students could be accommodated. If your school has a selection test for entry, students might comment that these students who want to come to the school must meet the academic requirements. These comments are of course valid and should be encouraged. In the discussion, emphasise that time is a factor. Some resources, such as teachers, can be recruited more easily in the short term but new classrooms would take longer to resource. This introduces students to the concept of **short and long term**.

EXPLORING

The exploring questions develop understanding of short term and long term. Invite selected pairs to come to the board and present their answers. One can talk while the other writes on the whiteboard. Invite comments from the class and add any points to the whiteboard.

The comments below are an approach to get students to think of logical consequences but also to think creatively. For the question about the bicycle factory, it will depend on spare capacity. If they are not using all their productive capacity in the factory, they could make more bicycles. They could offer existing workers overtime while they try to recruit more workers. Their ability to recruit more workers will be influenced by the level of employment in the area. The other determinant would be whether they can access materials to make the bicycles quickly.

The farmer has a greater problem as farmers are limited by the harvest of yams. They would have to make the decision months in advance to increase their production. The restaurant has a set amount of tables so this limits their ability to serve more customers. They could take short-term measures such as increasing opening hours or start a delivery service. Some restaurants change their layout and make small changes so that they can add more tables. One long-term possibility is to build an extension. Some restaurants respond to their popularity by opening more restaurants.

DEVELOPING**Teaching tips**

- Students need to practise calculations and drawing of diagrams as much as possible.
- Provide as many real world examples as possible.
- Farming is a useful start for students to understand elasticity of supply before moving on.
- Encourage students to use economic terminology in all their answers.

Suggested answer to in-text question 1:

The value for price elasticity of supply is positive while price elasticity of demand is negative. This is because changes in price and quantity supplied go in the same direction which means that an increase in price will lead to an increase in supply or a decrease in price will lead to a fall in quantity supplied. It also means that if price increases, revenue will increase, and if price falls, revenue falls.

Suggested answers to worked example questions:

Worked Example 1: The PES is inelastic because it is less than 1 and so the firm cannot easily or quickly increase the supply of paint.

Worked Example 2: The PES is elastic because it is greater than 1 and so the firm can easily or quickly decrease supply.

Worked Example 3: The PES is unit elastic and so a 20% increase in the price of bread would lead to a 20% increase in quantity supplied.

Suggested answers to application questions:

1. Price change is 33%. Supply change is 20%. PES = 0.6 inelastic
2. Identical price and supply changes. PES = 1
3. PES = 0 perfectly inelastic
4. PES = 3 elastic

Application task:

The application task asks students to write a report on how quickly the supply of coffee in the Philippines could be increased to respond to increases in world prices. It is important that students can access information about coffee and any relevant information about the Philippines coffee industry. The key facts about coffee are that the coffee tree will grow fruits after three to five years, and will produce for about 50 to 60 years (although up to 100 years is possible). The fruit takes about nine months to ripen. Their report should discuss the consequences of the length of time it takes for trees to bear fruit and the length of time current crops take to ripen.

Suggested answer to in-text question 2:

Increasing the supply of copper will depend on whether more can be obtained from existing mines by working longer hours. It will depend on whether there are easily accessible copper ores that have not yet been exploited. Further shafts might need to be created which could take several months. If new mines have to be established, this would take a considerable time.

- The supply of wooden furniture would be influenced by availability of wood. Most manufacturers of wood can easily source more wood. This means that timeframes to increase supply are quite short. Other influences on how quickly supply can be increased include the availability of spare capacity in the furniture factory and having the skilled workers needed.
- Building yachts takes a long time. A large luxury yacht can take up to three years to build so it is not easy or quick to increase supply.

Application task:

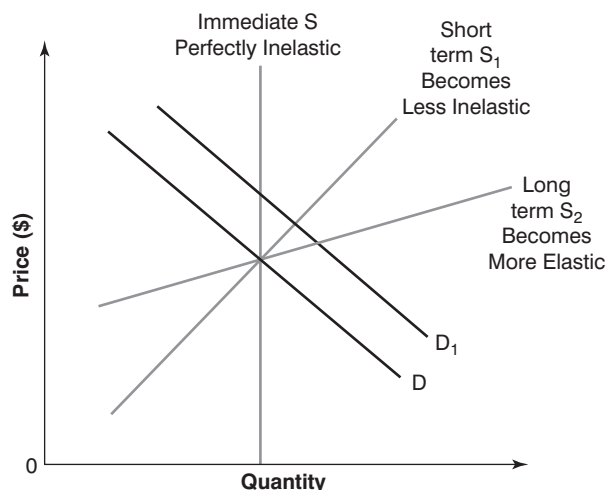


Figure TG 2.8.1

Case study: High demand for Google's Pixel smartphone

- This case study is based on the launch of the Pixel smartphone. It might be useful to provide some background information on the smartphone industry and Google's interest in this market. Some terminology might need to be explained such as configuration as well as explaining the company Verizon. Verizon are also known as Verizon Communications, Inc, an American multinational telecommunications conglomerate and the largest US wireless communications service provider.

Suggested answers:

1. The case study suggests that elasticity of supply is inelastic.
2. This is because stocks are low or have run out at both Google and Verizon outlets and it is taking time for shipments to be made.
3. Factors that could affect the PES are as follows.
 - The amount of stock (inventories) or ability to store the stock (inventory). This is low for the phone which implies PES is inelastic.
 - Level of spare capacity. If all the machines are being used and the factory has no space left to add more machines or workers then supply will be inelastic. This is because the firm is at full capacity and cannot quickly increase supply of the products.
4. It means that they cannot meet consumer demand for phones which will frustrate their customers who might switch to competitors' products.
5. They should have built up greater stocks before releasing to the market or invited pre-orders so that they could see the level of demand and change their production plans accordingly.

Additional activity

This activity should be undertaken at the end of work on elasticity of supply. It is a group activity with each group taking a scenario and then presenting the question in the scenario to the class. Students need to refer to elasticity of supply but should also be encouraged to use their knowledge of supply and demand theory.

Suggest to groups that they can use appropriate presentation techniques. Explain that they can make controversial points and that there is not necessarily a right answer. The important thing is the arguments they use to support their views.

Encourage students to use economic terminology including: demand, supply, changes in demand and supply, price elasticity of demand, price elasticity of supply, price inelastic, price elastic, mobility of factors of production, spare capacity, spare stocks.

Scenario 1

Incomes are rising in your country. This has led to a significant increase in demand for products and a rise in prices. Unemployment is at an all-time low. Would you rather own a factory producing ice creams or own a factory producing bricks for construction work?

Scenario 2

There has been a succession of bad harvests due to bad weather. Would you rather own a factory processing food (a company that uses meat and vegetables to make convenience food and tinned goods) or own a farm?

Scenario 3

There has been a large rise in tourism both within the country and from visitors from other countries. Would you rather own a group of hotels or own a business which sells high quality meals from its fleet of mobile kitchen diners?

Extension question

If there was a series of bad harvests do you think the government should intervene? What could they do?

Support question

An ice cream maker in a small shop sells 300 ice creams a day at \$2 per ice cream. Demand increases and so the ice cream maker raises the price. However, the ice cream maker owns one machine that makes exactly 300 ice creams a day. Is the supply of ice cream from this shop elastic or inelastic? What could the owner do to supply more ice cream?

APPLYING

Project work

It is important to explain to students what you expect them to research. Prepare some sources of information to provide assistance, especially for those who find this kind of research difficult. Employment data such as job vacancies figures as well as unemployment figures should be available. However, some of these data sources can be quite technical. There is one key issue that needs to be explained: you can have unemployment and unfilled vacancies at the same time because the skills of those who are looking for jobs might not be the skills that firms are looking for. Articles in newspapers and magazines on skills shortages could be a good source of information.

Expected outcomes

- Presentation of research data on job vacancies in a country
- Explanation of problems for firms, such as they cannot meet customer demand and could lose out to competitors
- Explanation of problems for government, including that the economy might not be as competitive as other countries. There might be a need to invest in education and focus on filling the skills gaps but this takes time

Knowledge check questions

Ask students to complete the knowledge check questions at the end of Unit 2.8 in the Student's Book.

Checking progress

Ask students to complete the Check your progress section in the Student's Book.

Learning objectives

By the end of this unit, students should be able to:

- define market economic system
- identify the difference between private and public sectors
- explain the advantages and disadvantages of the market economic system
- explain how market economic systems work in a variety of different countries

Key terms

Market economic system; private sector; public sector

STARTING POINT

The starting point questions provide the basis of examining the market economic system. Remind the students of the work they have done previously on public and merit goods. After allowing time for the pairs to answer the questions, run a plenary session discussing in particular those products and services provided only by the government and those provided by both government and businesses.

In Question 1, students are likely to mention products and services such as consumer durables, food, financial services and hairdressers. In Question 2, students might mention law and order and defence, education and health services. In Question 3, they might identify police, fire services and street lighting while in Question 4, the list could include health, education and broadcasting services.

EXPLORING

These exploring questions could be set as individual or pair work or could be used as the basis for class discussion. Question 3 would form a good class discussion. Use local examples to show that when there is direct competition firms have to think of the implications of charging a higher price than competitors. This is why, even when products are very similar, firms use marketing to create a brand image or try to differentiate in other ways such as better customer service.

DEVELOPING**Teaching tips**

- It is important in topics such as economic systems that students focus on the economic dimension to these topics and not on other aspects such as politics. It is important that students understand the economic dimension to this topic. Try to ensure that all discussion on this topic focuses on economic issues relevant to the syllabus.
- However, at the same time encourage students to come to their own personal opinions that they can justify with use of economic arguments and respond to the criticisms of other students.
- These topics are useful for class discussions and the additional activity tries to encourage this.
- It would be useful to remind students how to interpret and devise pie charts.

Suggested answers to in-text questions:

1. This question looks at some of the advantages and disadvantages of the market economy and how it can reward enterprise and innovation. The rewards for the founders of Amazon, Apple, Facebook and Microsoft have been great. However, those who work for a firm and become unemployed because of falling sales or who care for children, sick relatives or the elderly will struggle to make ends meet. Inequalities can be significant as a result.

2. Students might state that if firms are left to themselves they are only interested in private costs. They do not have to consider the social costs of polluting a river. However, their action might affect the private costs of firms lower down the river who need to use the water from the river for their products and services.
3. This question is useful as a basis for class discussion. Governments vary in the balance they want between private and public sectors. French governments in the past have tended to intervene in the economy to be a catalyst for economic growth. Countries like Finland have a tradition of a more equitable system with generous pension provision and social care programmes. In countries like the USA and Japan, we see a balance towards the private sector to encourage innovation and growth with fewer restrictions on the business community.

Additional activity: Group discussion using T-charts

Use Activity sheet 2.9

This activity is a group discussion on private and public sectors using T-charts. It builds on the issues covered in the unit as well as encouraging use of existing economic knowledge.

Display four sheets of flip chart paper around the room, prepared as T-charts and labelled with the following headings:

- The public sector should provide most products and services in an economy.
- The private sector should provide most products and services in an economy.
- Private sector firms can be trusted to act fairly and do not need supervising.
- Large inequalities do not matter.

The two sides of the T should be labelled “we agree because” and “we disagree because” (see Activity sheet 2.9 as an example).

Divide students into four groups and ask each group to visit one of the flip chart sheets. Ask the group to spend five minutes discussing how they might deal with the issues shown on the flip chart, considering both the left and right side of the T-Chart. Ask the group to write their ideas on the flip chart.

After the five minutes, ask the groups to move on to the next flip chart. Each group should look through the ideas that the previous group has identified, then add their own **NEW** ideas to the chart (students should not just repeat ideas that the previous group identified for that chart). Repeat this process twice more so that all groups have visited each flip chart.

At the end of the activity, lead a discussion with the whole group.

An alternative would be to provide Activity sheet 2.9 to the students to complete independently.

Extension question

Choose one of the countries in Table 2.9.1 in the Student’s Book. You are not allowed to choose your own country. Write a short profile of the country and analyse the level of government spending.

Students might need support in identifying sources of information.

Support question

Do you think that a government should provide health care? Explain your answer.

If the student answers yes, they could point out that this would help people who could not afford to pay for healthcare and that it ensures a healthy workforce. If the student answers no, they could point out that people could take out health insurance and that the private sector in many countries delivers high quality healthcare.

Case study

Hong Kong – the world's freest economy

It would be useful to provide some background about the Heritage Foundation, including who they are and what their index is based on. This will encourage students to always check the data they are using. Discuss what 'freest' means in this context as well as other interpretations.

Suggested answers:

1. The case study evidence is the favourable business environment, free trade, simple and low taxes, law and order and a government that believes in close economic cooperation with major trading partners.
2. Advantages could include low taxes that encourage enterprise, innovation and investment. Encourage students to consider advantages not used in the data such as less 'red tape' which encourages firms to set up or expand.
3. Policies to promote a free economy could include lowering taxes or encouraging free trade by the development of free trade parks. Reducing government restrictions on things like planning permission could also be considered.

APPLYING

Project work

The project work asks students to research the goods and services produced by the private and public sector in their country and to use this information to draw a pie chart. Students need to decide where on the spectrum their country is. Are they closer to countries like Singapore or closer to countries such as Finland? Students might need help to identify sources of information and how to structure their answer to the question as to what extent their country can be considered a market economy.

Expected outcomes

- Data on public and private sector provision
- A pie chart illustrating this data
- An answer that analyses this data to see what the balance is between the public and private sector

Knowledge check questions

Ask students to complete the knowledge check questions at the end of Unit 2.9 in the Student's Book.

Checking progress

Ask students to complete the Check your progress section in the Student's Book.

Learning objectives

By the end of this unit, students should be able to:

- define market failure
- define the following terms associated with market failure: public good, merit good, demerit good, social benefits, external benefits, private benefits, social costs, external costs, private costs
- explain how market failure can arise from public goods; merit and demerit goods; external costs and external benefits; the abuse of monopoly power; and factor immobility
- analyse the consequences of market failure with the overconsumption of demerit goods and goods with external costs
- analyse the consequences of market failure with the underconsumption of merit goods and those with external benefits
- analyse the implications of market failure on the misallocation of resources with either too many or too few factors of production being allocated by entrepreneurs to the production of these goods.

Key terms

Market failure; social optimum quality; merit goods; demerit goods; public goods (or services); private goods (or services); non-excludability; non-rivalry; external costs; private costs; spillover effects; social costs; external benefits; private benefits; social benefits; monopoly power; factor immobility

STARTING POINT

The starting point questions begin the process of considering interventions because without these interventions there could be harm. Either place students in pairs or run the starting point questions as a class discussion. Write the points that the students say on the whiteboard. Students might think of products such as eating vegetables and healthy foods. Some might mention services such as going to the dentist. Students might state that their parents want them to be healthy so they would encourage them to eat well. Students might consider products such as tobacco and junk food as being harmful.

EXPLORING

These questions could be set as individual, pair or group work. Using visuals of a road accident or a traffic jam caused by a road accident might act as a catalyst for students to consider the implications of a road accident such as injuries to people and damage to vehicles, the provision of emergency services and the cost of delays to individuals and firms.

1. Students could consider the cost of buying a car. The person might have borrowed money to buy the car which means a cost is the interest paid. Other costs would include car insurance, petrol, car servicing and road tax. Some might use their economic knowledge and refer to opportunity cost.
2. Students could refer to road congestion which could cause delays. This might have consequences such as being late for work, missing important appointments, or increased costs for haulage companies caught up in delays. Others might refer to pollution, global warming and health impacts caused by poor air quality due to the traffic.
3. Students could refer to those who have been injured or died in an accident. (Be sensitive in getting feedback on this question in class as students might have been affected themselves.) They would have the emotional costs of such traumas. Families could lose a breadwinner which could cause financial problems. Injured victims could face loss of income. There are the costs of emergency services dealing with the accident as well as the impact if long-term healthcare is needed. The effects for those caught up in delays caused by the accident could range from frustration to increased costs for haulage companies and those firms waiting for vital supplies.

4. This question focuses on why some of the effects are measured in money and others are not. This is because some are easy to measure. Some of the effects cost money, such as the cost of the emergency services and lost incomes due to increased costs for the haulage industry. Other costs such as trauma and bereavement are not money costs (although some economists do try to put a money value on them).

DEVELOPING

Teaching tips

- This unit covers a number of important concepts. It is important to check on understanding regularly as sub-topics are covered.
- The extension activity requires students to draw demand and supply diagrams which have not been practised. Either provide sources of information or show the diagrams to the students who are given the extension activity. The Extension activity is not suitable for students who struggle with the concept of demand and supply.

Additional activity – Types of market failure

Use Activity sheets 2.10a and 2.10b

This activity is designed to help students understand different types of market failure and ways the government can correct them.

Place the students in groups of three. Provide each group with a copy of Activity sheet 2.10a and Activity sheet 2.10b. Instruct students to categorise cards under the headings on the grid.

The first column on Activity sheet 2.10b contains the **explanations**, the second column the **examples** and the third column the **ways government can correct the market failure**. As this is group work, it would be useful to prepare by cutting up the activity sheets into cards. Make sure they have explanation on the back of the cards, an example and ways government can correct the market failure. Use large flip chart type paper for Activity sheet 2.10a. Students can then place the correct cards on the grid but also change them easily.

After allowing enough time for the groups to complete the activity, run a plenary session going through all the explanations and inviting groups to contribute. Each time ask if everyone agrees and respond to any misunderstanding.

Suggested answers to in-text questions

1. Students might explain market failure through examples to show the need for the country to provide merit goods such as healthcare to ensure that those who cannot afford healthcare can receive it. If people had to pay for healthcare, they might choose not to go to the doctor or inoculate their child. They may not understand the full benefits of inoculating their child nor the implication for society in terms of dangers of disease outbreaks. Others might refer to education: if left to the market, consumers might choose not to educate their children and this might lead to having an uneducated workforce.
2. Students could make reference to the fact it is not possible to know exactly when external benefits will arise. Inoculation against a contagious disease clearly provides protection to individuals and yields a private benefit. There is also an external benefit to other individuals who are protected from catching the disease from those who are inoculated. Students could state that individuals and families on low incomes are not likely to pay the full market price of merit goods and would under-consume.
3. Students could refer to:
 - public libraries and community spaces such as parks
 - state-financed museums and art galleries
 - subsidised bicycle programmes
 - free school meals
 - health services such as inoculations for children.
4. Students could consider demerit goods that could be over-consumed if left to market forces. Examples include tobacco and junk food.

Extension activity

1.

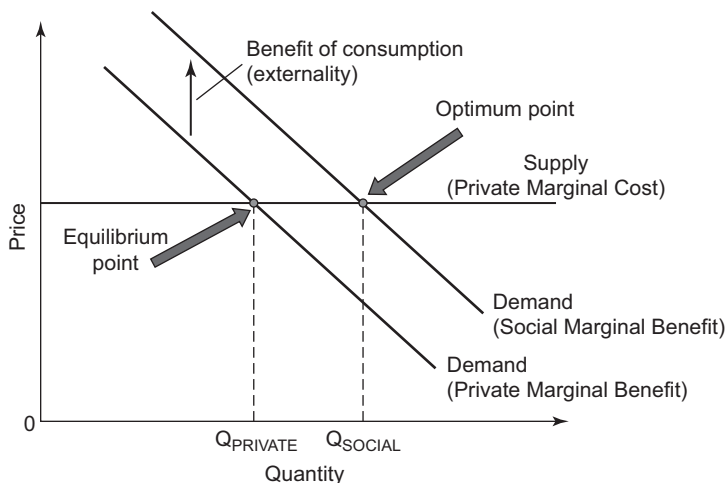


Figure TG 2.10.1

- (a) The new demand curve is at a higher level than the original demand curve.
- (b) The original equilibrium is at Q_{private} and increases to Q_{social} .
The output is at a higher level.
- (c) There is under-consumption of the merit good as it is not known how beneficial it is to consume these goods and services so consumers demand them at the 'wrong' level. This is the wrong quantity because if consumers had all the information available then they would have a higher demand.

2. Demand and supply for a demerit good

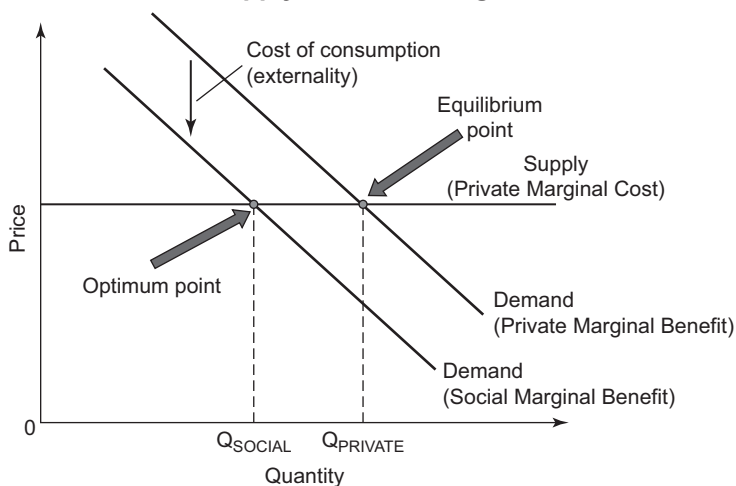


Figure TG 2.10.2

- (a) The new demand curve is at a lower level compared to the original level.
- (b) The original equilibrium is at point Q_{market} and the social optimum is at Q_{optimum} .
The output is lower than the original equilibrium output.
- (c) There is over-consumption of the demerit good as it is not known how harmful it is to consume these goods and services so consumers demand them at the 'wrong' level. This is the wrong quantity because if consumers had all the information available then they would have a lower demand and the equilibrium price and quantity at the social optimum would be at lower sales in the market.

Suggested answers to in-text questions:

5. (a) Yes, because the shopkeeper will not allow someone to take away the jacket without paying.
(b) It will depend. A private beach could exclude people if the owners control access. If access to a beach is not controlled, then anyone can consume the benefits of the beach.
(c) If the film has been downloaded by someone else who has paid for it, you cannot be prevented from watching the film.
(d) The ferry company could prevent someone from boarding the ferry without a ticket.
6. (a) If the hospital is considered a private good then consumers who have not paid will not be able to enjoy consuming the good or service. If the hospital bed is provided free, this would not arise as neither individuals would have paid. Access to the bed would be determined by the hospital.
(b) Crime prevention by the police in your local area is an example of a public good and demonstrates non-excludability. If crime prevention was provided through the market, the people who have not paid towards it cannot be excluded from benefitting.
(c) and (d) A book and a bicycle are examples of a private good. Consumers who have not paid will not be able to enjoy consuming the good or service. (Unless it is a library book available to everyone)
7. Defence is an example of a public good because it is non-rival and non-excludable. This means that individuals cannot be excluded from benefiting from defence. The services of a bodyguard are a private good. Individuals can be excluded if they have not paid.

Additional activity

This activity is a research activity which would be useful as a joint project with the science department or those who are responsible for health education in your school. This would mean that you could draw on the experience of staff who are used to talking about health issues with students and are aware of the sensitivities. If this is the case the other teacher concerned might want to add some additional health-related questions. Students could work in groups and present their findings.

If appropriate in your school, ask students to research the cigarette market in your country.

- (i) How much does it cost to buy a packet of cigarettes in your country? If a consumer smoked 20 cigarettes a day, how much would they spend in one year?
(ii) What is the value of the total cigarette sales in your country?
(iii) How much does it cost the health service to treat smoking-related illnesses?
(iv) Analyse why the social costs of smoking are greater than the private costs.
(v) Who should pay for these external costs of smoking?

Students will need to be helped in accessing sources of information for the research into the cigarette market in your country to obtain information for (iii). With regards to (iv) the student could refer to the health costs for treating smoking related illnesses as well as the impact of passive smoking on non-smokers who cannot avoid breathing in cigarette smoke. (v) is more open-ended however students are likely to discuss that smokers should pay in higher tobacco taxes for the cost of healthcare.

Application task

1. The private costs include costs of construction such as materials, labour and capital equipment. The private benefits are the profits for the construction companies and the wages of their employees.
2. The external costs of the motorway would include impact on the environment such as loss of countryside, destruction of rare plants and animal habitats. There could be costs in terms of loss of income for shops in a town which is now bypassed. The external benefits include less congestion and the saving of financial costs. An area could benefit during the construction phase because of the spending of construction workers. Local people could be employed in the construction which would have positive knock-on effects in the area.

3. With this question, it would be useful to use pairs to consider whether the social benefits (private benefits and external benefits) are greater than the social costs (the private and external costs) and whether the building of the motorway will go ahead. There is not a right or wrong answer but there is a right or wrong problem-solving method. The right approach is to consider the costs and benefits then evaluate each one (for example, attempt to quantify and monetise their significance) then select on the basis of the balance between social costs and benefits.
4. *Extension:* You might need to help students identify sources of information for this question. Estimates for the costs of road use have been calculated. External costs of motorways are costs not borne by the road user. Costs can be estimated for the impact on noise pollution on people who live near motorways. Construction companies are often required to create banking to reduce noise. These will have a monetary value. Other costs such as a loss of a view are impossible to quantify. External benefits such as saving of time for the haulage industry can be quantifiable.
5. *Extension:* Cost benefit analysis (CBA) is used to decide whether a motorway is built. All costs and benefits are identified and a monetary value is assigned to each cost and benefit.

Private costs are direct (private) monetary costs.

External costs could be monetary, such as a new motorway may mean less money for train companies and non-monetary such as pollution, landscape and noise.

Direct benefits are the revenues for the construction company. Time saved for the new road could be given a value.

CBA suggests that if total benefits exceed total costs then the motorway should be built.

Case study

Soda and water usage

You could provide background information about the two companies and check students have a good understanding of private and external costs.

1. Fizzy drinks are produced because consumers demand the products and by selling them PepsiCo and Coca Cola can increase their profits.
2. Consumers, retailers, drinks companies, suppliers to the fizzy drink industry, employees of companies producing the drinks and people employed in the production and retail chain.
3. Indian trade associations, those whose water supply has been affected such as farmers, residents and firms that need water (such as the textile industry).
4. The private costs are the costs of producing the drink such as the factory and bottling, marketing costs etc. External costs are costs imposed on farmers who face drought conditions and might have to pay to bring in water for their crops and cattle.
5. Students need to come to their own conclusion but must back this up by using economic concepts.

APPLYING

Project work

You need to discuss sources of information. Global warming is a potential political debate and you need to be sensitive to all viewpoints. There may be students and families who will dispute whether the threat of global warming is as serious as some scientists suggest.

The advantage of an individual piece of work is that it allows the student to express their views backed up by evidence. Remind students they are economists and should think of this view with the experience of their knowledge of economics. An economist attempts to judge the evidence and arrive at a balanced conclusion.

Expected outcomes

- An explanation of what is meant by global warming
- An analysis of the causes of global warming

- Evidence of who the producers of global warming are (some students might say that all people in the developed world are producers of global warming, through their purchasing decisions)
- Analysis of the impact of global warming using economic analysis

The Extension question asks whether global warming can be stopped or reversed. There are a variety of approaches which could look at scientific suggestions, united actions by governments to encourage clean energy and a move away from fossil fuels.

Additional activity: The Debates!

Use Activity sheet 2.10c.

This activity takes the form of two debates. First, divide the class into two: Group A and Group B.

Subdivide Group A into two teams and subdivide Group B into two teams.

Provide the teams with the scenarios in Activity sheet 2.10c.

The teams within each group will prepare for a debate taking opposite sides. Each team needs to prepare to put forward their arguments using their knowledge of economics. Each team has a maximum of 10 minutes to argue their case. As well as putting forward their case, the teams need to appoint someone to introduce their case and someone to sum up at the end.

For the Group A scenario, Team 1 will argue for the building of the airport and Team 2 will argue against. Members of Group B will listen to the debate and ask questions, then vote for or against.

For the Group B scenario, Team 3 will argue for the ban and Team 4 will argue against. Members of Group A will listen to the debate and ask questions, then vote for or against.

Knowledge check questions

Ask students to complete the knowledge check questions at the end of Unit 2.10 in the Student's Book.

Checking progress

Ask students to complete the Check your progress section in the Student's Book.

Learning objectives

By the end of this unit, students should be able to:

- define a mixed market economic system
- explain the effects of imposing maximum and minimum prices on markets in various contexts, such as product, labour and foreign exchange markets
- define minimum and maximum prices
- draw and interpret diagrams showing the effects of indirect taxation, subsidies, and minimum and maximum prices in product and labour markets
- define government microeconomic policy measures of regulation, privatisation and nationalisation, and the direct provision of goods
- discuss the effectiveness of government intervention in overcoming the drawbacks of a mixed economic system.

Key terms

Mixed market system; maximum price control; minimum price control; fixed exchange rate system; indirect tax; subsidy; regulation; privatisation; nationalisation

STARTING POINT AND EXPLORING QUESTIONS

These questions are a good opener to the unit and you can use them as a question and answer session.

Examples of questions:

- When you came to school today, what did you use to walk, cycle or travel in?
- Who provides the road signs?
- Who provides the street lights?
- Who says you can't drive a car when you are eleven years old?
- What do you have to do before you are allowed to drive by yourself?
- Who decides this and why do they make that decision?
- Write the students' contributions on the whiteboard.

DEVELOPING**Teaching tips**

- Students need to be comfortable with drawing demand and supply diagrams and showing changes caused by shifts in demand and supply diagrams.
- It would be useful to check on understanding of price elasticity of demand before starting this unit.
- There are many issues covered in this unit that are suitable for class discussion. Students need to use their economics in these discussions rather than giving an opinion.
- It would be useful to collect articles from newspapers and magazines that illustrate these issues, which can be used in your teaching and would also give a local context.

Teacher guidance for the in-text questions in this unit

Many of the in-text questions require students to use diagrams. To ensure students have access to accurate diagrams these are drawn underneath the in-text questions with an explanation. When this is the case there will be a reference to the Student's Book. One approach would be first to go through the diagrams and the

explanations in their teaching of the topics and ask the students to practise the diagrams and explain them verbally. The in-text questions could then be set under test conditions.

1. The diagram and explanation on setting the maximum price below the equilibrium price is shown in the Student's Book.
2. The explanation is shown after the question in the Student's Book.
3. The explanation is shown after the question in the Student's Book.
4. The Student's Book suggests one response to this question. It comments that a government may want to stop very low wages being paid and therefore introduce a minimum wage to make all employers pay at least this decent wage rate to workers. This is explained in Figure 2.11.2. Students could consider other examples such as setting minimum prices for food to increase the income of farmers producing food. The EU had a Common Agricultural Policy which increased the income of farmers by setting minimum prices. As a demand and supply diagram shows, this would lead to oversupply and was criticised for being inefficient, led to higher prices for consumers and the imposition of tariffs on imports to keep food prices artificially high.
5. The student would need to refer to Figure 2.11.2 and the explanation in the Student's Book.
6. Although an explanation is provided in the Student's Book after the question, this is more suited to an in-class discussion question where students could mention unemployment. It would be useful for you to consider consequences in other markets such as using minimum prices for food.
7. This question could be used to check on understanding of elasticity. One method would be to get students to work in pairs on this question or get students to come to the whiteboard to draw the diagrams needed to answer this question. These diagrams can be found in Figure 2.11.5 in the Student's Book.
8. Students would need to recall their work on elasticity of demand. They need to mention that when PED is inelastic the percentage fall in demand is less than the percentage increase in price while when PED is elastic the percentage fall in demand is greater than the percentage increase in price. This means that by imposing a tax on a product which has an inelastic demand government would maximise revenue.
9. The standard answer would be that increasing an indirect tax on cigarettes would lead to an increase in tax revenues because it has an inelastic demand. Chocolate is perceived as having an elastic demand and so raising indirect taxes on chocolate would lead to tax revenue falling. However, some students might come to a different conclusion by pointing to evidence that demand for cigarettes at higher prices could become elastic. If governments wanted to stop people smoking they could increase indirect taxes to the point that demand becomes elastic. They could also increase taxes on chocolate or sugary drinks to reduce consumption. The analysis would then lead to a question about the purpose of the tax. Is the government using taxes to cut demand or raise revenue? It could be useful to have a class discussion on these issues. This would prepare the students for the next section in the unit.
10. An explanation is provided in the Student's Book after the question.
11. This could be used as a class discussion before looking at the section on Government microeconomic policy measures in Unit 2.11 in the Student's Book.
12. This could be part of the discussion referred to in in-text question 11. Suggestions are given in the Student's Book after the question.

Case study: Challenges in waste management for India

Students often do not appreciate the organisational issues behind rubbish collection. They tend to think of waste as something that is removed from the household. It might be useful to discuss the issue of waste management before setting the case study.

Suggested answers to questions:

1. Garbage is a problem for local governments as they have to deal with the increasing amounts of rubbish at the same time as keeping cities clean. As a result, local governments dump waste outside the city in landfill sites.
2. Consuming a demerit good creates negative spillover effects. The waste produced by individuals in a city will reduce the benefits to others in the form of rubbish outside people's homes, which is unsightly and unhealthy. This means that the local government has to remove and treat the waste which leads to residents paying for the service through their taxes.

3. The government is encouraging recycling which means that rubbish has to be sorted before it reaches the landfill site. The case study suggests that 80% of waste could be recycled.
4. Experience in some countries suggests that encouraging recycling does reduce the impact on landfill. However, recycling must be made easy to do for households and firms through the provision of different containers for household items such as paper, glass and plastics. Other countries encourage consumers to return their glass and plastic bottles to the shops where they bought them and they pay a bottle deposit which is returned when the consumer returns the bottle. Other countries fine households if they include recyclable items in their general waste. Without adopting similar schemes, it is unlikely to be effective.

Additional activity

Mixed market economy quiz

Students need to devise ten quiz questions with answers based on this unit. They must make sure their questions cover key topics. Divide the class into two groups.

Issue each student with ten blank cards. Each student should number the cards and write their name on one side. They then need to devise a two-part question for each card about a key topic relating to a mixed economic system. The first part of the question should ask for a fact. The second part should ask for an explanation or an example. On the reverse of the card, they should write an appropriate two-part answer to their question. An explanation should be short and concise. If examples are requested, the student must provide two or three alternative examples.

Example questions are:

- What are maximum price controls?
- What would be the effect of a maximum price on food?

It would be useful to divide up the learning outcome bullets amongst the students so that there is a spread of topics.

For the quiz, arrange students in two equal teams. Ask one student to keep score using a suitable score-card. Player 1 for Team A asks one of their questions to Player 1 of Team B, who needs to answer **both parts of** the question. Discuss the answer with the group and ask the group to determine if the answer is correct. If either part of the answer is not correct, the question passes to all players in Team B to answer.

Player 1 of Team A then confirms the answer they had devised. (Correct answers if the student's answer was not wholly correct.)

Under the appropriate team's score column, the scorekeeper records two marks for each correct part of the answer given by the original player answering the question. If play passes to the whole team, only one mark is recorded for each part of the question.

Play then passes to Player 1 of Team B, who asks their question to Player 1 of Team A, and so on.

Total the scores at the end of the quiz to see which team won.

After the quiz, collect students' question/answer cards and check that answers provided were correct. Return any incorrect answers to students and ask them to change their answer to the correct one.

APPLYING

Project work

The project work is based on investigating how countries such as China and Mexico deal with the problem of road congestion. You will need to help provide sources of information.

In China, after the famous 2010 gridlock, Beijing announced a series of drastic measures to tackle the city's traffic jams, including limiting the number of new plates issued to passenger cars to 20,000 a month and barring cars of non-Beijing plates from entering areas within the Fifth Ring Road during rush hours. In mega-cities like Mexico City, one of the world's most congested cities, more cars on the road bring greater traffic

congestion, pollution and road safety challenges. Road traffic incidents were responsible for 954 deaths in Mexico City in 2012, while motorized vehicles are responsible for 49 percent of greenhouse gases emitted in the area. These problems are set to worsen as the city's vehicle ownership grows at 4.2 percent annually.

These problems are well-documented, but new research highlights another issue with Mexico City's car congestion: it creates economic costs to businesses and their employees.

Expected outcomes

- Analysis of road traffic congestion in China and Mexico
- Solutions to road traffic congestion in China and Mexico
- Analysis of effectiveness of solutions
- Commentary of applicability of solutions within your country
- Presentation of findings to the class

Knowledge check questions

Ask students to complete the Knowledge check questions at the end of Unit 2.11 in the Student's Book.

Checking progress

Ask students to complete the Check your progress section in the Student's Book.

Chapter review

Ask students to complete the Chapter review questions at the end of Chapter 2 in the Student's Book.