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For A-level Year 1 and AS

1

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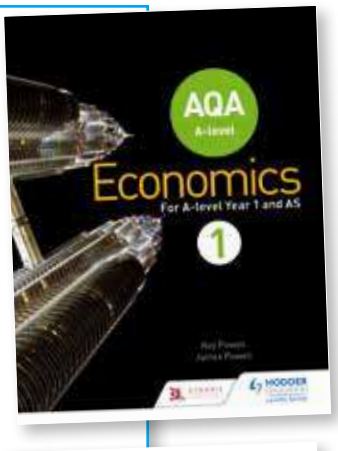

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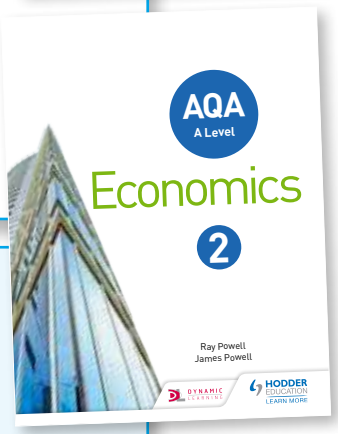

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Price determination in a competitive market

Chapter 1 introduced you to one of the fundamental economic problems: how to allocate scarce resources between competing uses in conditions in which there are limited resources and unlimited wants. In a market economy, resource allocation is undertaken by the price mechanism operating in the system of markets that make up the economy. This is true also in the 'market sector' of a 'mixed economy'. However, in a mixed economy there is also a 'non-market sector' in which goods and services such as roads and police are produced and delivered to final users 'outside the market'. The UK is often said to be a 'mixed economy' though in recent decades the nature of the 'mix' has been shifting toward a pure market economy and away from non-market provision.

This chapter focuses on markets and the price mechanism, and looks only at **competitive markets**. Many of the markets in the UK economy are uncompetitive markets, but these are investigated in Chapter 4.

KEY TERM

competitive market a market in which the large number of buyers and sellers possess good market information and can easily enter or leave the market.

LEARNING OBJECTIVES

This chapter will:

- explain the nature of demand and supply in a competitive market
- differentiate between a movement along a demand or a supply curve and a shift of a demand or a supply curve
- introduce the concept of elasticity and explain the different elasticities you need to know
- bring demand and supply curves together in a supply and demand diagram
- distinguish between market equilibrium and disequilibrium in a supply and demand diagram
- investigate different ways in which markets are interrelated
- examine a number of real-world markets

What is a market?

A market is a voluntary meeting of buyers and sellers. Both buyer and seller have to be willing partners to the exchange. If, for example, a buyer uses violence or the threat of violence to 'persuade' a seller to supply goods at a price unfavourable to the seller, this is a forced transaction and not a market transaction.

Markets do not have to exist in a particular geographical location. Whenever a good or service is voluntarily bought and sold, a market transaction takes place. Over history, market transactions shifted away from open-air street markets to take place in shops. Shops have higher overhead costs, but they offer a permanent site of exchange and a continuing relationship between sellers and buyers. In recent years, the growth of the internet has allowed 24/7 e-commerce. As a result many markets, especially those in commodities, raw materials and financial services, have become truly global.

Competitive markets

A market is highly competitive when there are a large number of buyers and sellers all passively accepting the ruling market price that is set, not by individual decisions, but by the interaction of all those taking part in the market. The ruling market price (or **equilibrium price**) is set by **supply** and **demand** in the market as a whole. Highly competitive markets lack entry and exit barriers. This means that new buyers and sellers can easily enter the market without incurring costs. In the same way buyers and sellers can leave the market if they wish to. Competitive markets also exhibit a high degree of transparency — buyers and sellers can quickly find out what everyone else in the market is doing.

KEY TERMS

equilibrium price the price at which planned demand for a good or service exactly equals planned supply.

supply the quantity of a good or service that firms are willing and able to sell at given prices in a given period of time.

demand the quantity of a good or service that consumers are willing and able to buy at given prices in a given period of time. For economists, demand is always effective demand.

effective demand the desire for a good or service backed by an ability to pay.

2.1 The determinants of demand for goods and services

Households and firms operate simultaneously in two sets of markets. The first of these contains the goods markets in which households demand and buy consumer goods and services produced and supplied by firms. But for household demand in the goods market to be an **effective demand** — that is, demand backed up by an ability to pay — households must first sell their labour, or possibly the services of any capital or land they own, in the markets for factors of production. These were briefly mentioned in Chapter 1. Households' roles are therefore reversed in goods markets and factor markets. In this chapter, we ignore factor markets and focus solely on the determinants of demand for consumer goods and services.

Market demand and individual demand

Normally when economists refer to demand, they mean **market demand**. This is the quantity of a good or service that all the consumers in the market wish to, and are able to, buy at different prices. By contrast, individual demand is the quantity that a particular individual, such as yourself, would like to buy. The relationship between market and individual demand is simple. Market demand is just the sum of the demand of all the consumers in the market.

KEY TERM

market demand the quantity of a good or service that all the consumers in a market are willing and able to buy at different market prices.

The 'law' of demand

The 'law' of demand states that as a good's price falls, more is demanded. There is thus an inverse relationship between price and quantity demanded. Note that the word 'law' is in inverted commas. This is because a law in economics is not as strong or watertight as a law in a natural science subject such as physics. Whereas a law in physics will always hold, a social science law always has 'ifs' and 'buts' attached. More of a good is *usually* demanded as its price falls, but there are exceptions, which are explained later in the book.

The market demand curve

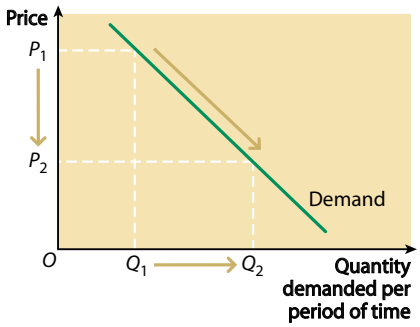


Figure 2.1 A market demand curve

The market demand curve in Figure 2.1 illustrates the 'law' of demand. If the price starts off high, for example at P_1, household demand is Q_1. But if the price falls to P_2, demand increases to Q_2.

Demand for a good varies according to the time period being considered. For example, weekly demand is different from daily, monthly and annual demand. For this reason, the horizontal axis in Figure 2.1 is labelled 'Quantity demanded per period of time'. It is normal practice to use the label 'Quantity' on the horizontal axis of a demand curve diagram, as we do in the rest of this book, but this is an abbreviation. It always refers to a period of time.

SYNOPTIC LINK

Microeconomic demand curves look very similar to aggregate demand curves which are explained in Chapter 7. It is vital that you don't confuse the two. Likewise, don't confuse demand with consumption, which is a component of aggregate demand, also explained in Chapter 7.

ACTIVITY

Construct a questionnaire containing the following question: 'How many litre bottles of cola would you buy each week if the price was £2, £1.50, £1.00, 50 pence, 25 pence?' Ask a sample of your friends to answer the question and analyse their answers. What are the problems with estimating demand curves in this way?

Movement along a demand curve and shifts of a demand curve

Students often confuse a movement *along* a demand curve and a *shift* of a demand curve. A *movement along a demand curve* takes place only when the good's price changes. Provided the demand curve slopes downwards, a *fall* in price results in *more* of the good being demanded. This is sometimes called an extension of demand. Likewise, a contraction of demand occurs when a *rise* in price leads to *less* being demanded.

When we draw a market demand curve to show how much of the good or service households plan to demand at various possible prices, we assume that all the other variables that may also influence demand are held unchanged or constant. This is the ceteris paribus assumption, which means 'other things being equal'. Among the variables whose values are held constant or

STUDY TIP

You must understand the difference between a movement along a demand or supply curve and a shift of the curve.

unchanged when we draw a demand curve are disposable income and tastes or fashion. Collectively, the variables (other than the good's own price) whose values determine planned demand are often called the **conditions of demand**. A change in a condition of demand shifts the demand curve to a new position.

KEY TERMS

condition of demand a determinant of demand, other than the good's own price, that fixes the position of the demand curve.

increase in demand a rightward shift of the demand curve.

decrease in demand a leftward shift of the demand curve

The conditions of demand

The main conditions of demand are:

- the prices of **substitute goods** or goods in competing demand (see section 2.6)
- the prices of goods in joint demand or **complementary goods** (see section 2.6)
- personal income (or more strictly personal disposable income, after tax and receipt of benefits)
- tastes and preferences
- population size, which influences total market size

If any of the conditions of demand change, the position of the demand curve changes, shifting either rightward or leftward. Figure 2.2 illustrates a rightward shift of the demand curve, which is also called an **increase in demand**, and means more of the good is demanded at all prices. For example, at a price of P_1, the quantity demanded increases from Q_1 to Q_2. Conversely, a leftward shift of demand (known as a **decrease in demand**) causes the quantity demanded to fall at all prices.

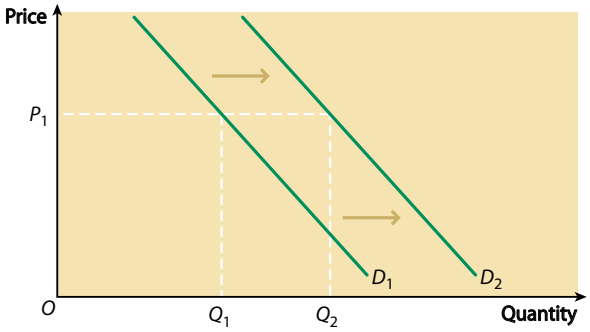


Figure 2.2 The effect of a rightward shift of demand

Events that might cause a rightward shift of a demand curve include;

- an increase in the price of a substitute good or good in competing demand (see the section on the interrelationship between markets)
- a fall in the price of a complementary good or good in joint demand
- an increase in personal disposable income (but see the following section on normal goods and inferior goods)
- a successful advertising campaign making people think more favourably about the good
- an increase in population size

KEY TERMS

normal good a good for which demand increases as income rises and demand decreases as income falls.

inferior good a good for which demand decreases as income rises and demand increases as income falls.

Normal goods and inferior goods

When disposable income increases, a demand curve shifts rightward, but only if the good is a **normal good**, for which demand increases as income increases. However, some goods are **inferior goods**, for which demand decreases as income increases, and an increase in income shifts the demand curve leftward.

To take an example, private car transport and bus travel are not just substitutes for each other. As people's incomes rise, demand for cars generally increases, while, at the same time, demand for bus travel usually falls. If people respond in this way to changes in income then private transport is a normal good, but certain forms of public transport are inferior goods. For an individual, whether a good is normal or inferior depends on personal income, tastes and, possibly, age. For young children, junk food such as sweets is usually a normal good. When parents increase small children's pocket money, they generally buy more sweets. But as children get older, tastes change, and sweets may very well become an inferior good.

EXTENSION MATERIAL

Are there any exceptions to the 'law' of demand?

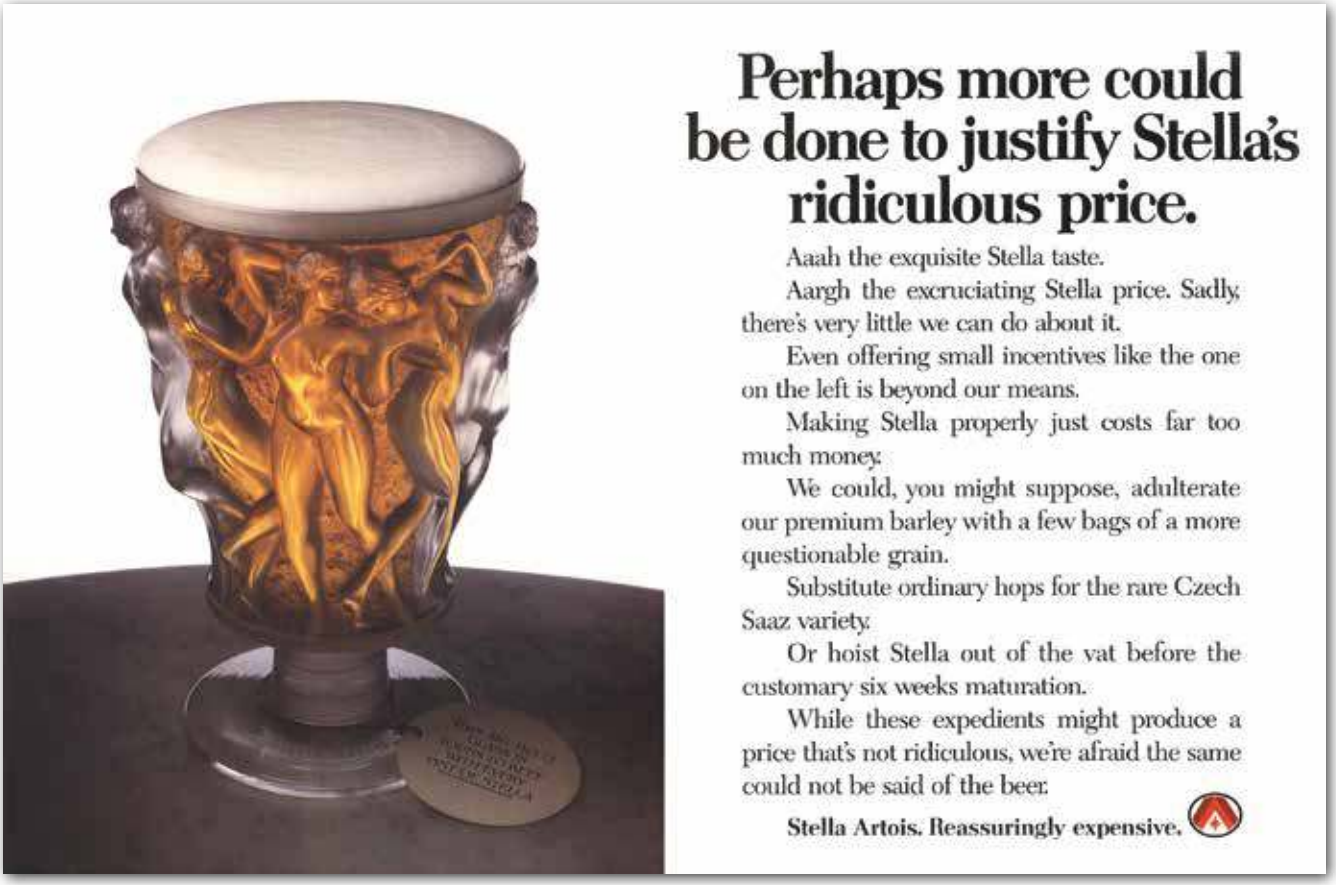
Demand curves don't have to slope downwards, though they usually do. However, there are circumstances in which a demand curve may be horizontal or vertical, or indeed slope upward, showing that more is demanded as the good's price increases.

There are a number of possible explanations for upward-sloping demand curves. These include the following:

1 **Speculative demand** If the price of a good such as housing, shares or a foreign currency starts to rise, people may speculate that in the near future the price will rise even further. In this situation, demand is likely to increase. In the case of rising house prices, young people who wish to become first-time buyers may scramble to buy houses, fearing that it they wait, they may never be able to afford to buy a house.

2 **Good for which consumers use price as an indicator of quality** Consumers may lack accurate information about the quality of some goods they want to buy, such as second-hand cars and computers. In this situation, a potential buyer may demand more as a good's price rises, believing that a high price means high quality.

3 **Veblen goods** Some companies try to sell their goods based on the fact that they cost more than those of their competitors. Veblen goods, named after the Norwegian economist Thornstein Veblen, are goods of exclusive or ostentatious consumption, or 'snob' goods. They are sometimes called positional goods, though strictly a positional good is so scarce that few people can ever acquire it. Some people wish to consume Veblen goods, such as Ferrari cars, as a signal of their wealth. The 'reassuringly expensive' advertising campaign for Stella Artois beer is a good example. A few years ago, Interbrew, the Belgian company (now called Inbev) that then owned the Stella brand, decided to sell its beer as a premium brand. Interbrew hoped that high prices would attract more customers.



Veblen goods are those that have high price as a selling point

KEY CONCEPT

Demand, a summary

When studying how markets operate, it is important to understand the nature of demand. Usually when we talk of demand, we mean market demand which is the demand for a good or service of all the consumers in the market. Market demand curves almost always slope downward, showing that consumers demand more of a good as its price falls.

2.2 Price, income and cross elasticities of demand

The meaning of elasticity

KEY TERM

elasticity the proportionate responsiveness of a second variable to an initial change in the first variable.

Whenever a change in one variable (such as a good's price) causes a change to occur in a second variable (such as the quantity of the good that households are prepared to demand), an **elasticity** can be calculated. The elasticity measures the proportionate responsiveness of the second variable to the change in the first variable. For example, if a 5% increase in price were to cause households to reduce their demand by more than 5%, demand would be elastic. In this example, a change in price induces a more than proportionate response by consumers. But if the response were less than a reduction of 5%, demand would be inelastic. And if the change in price were to induce exactly the same proportionate change in demand, demand would be neither elastic nor inelastic — this is called unit elasticity of demand.

Elasticity is a useful descriptive statistic of the relationship between two variables because it is independent of the units, such as price and quantity units, in which the variables are measured.

Although, in principle, economists could calculate a great many elasticities for all the economic relationships in which they are interested, the three demand elasticities you must know are:

- price elasticity of demand
- income elasticity of demand
- cross-elasticity of demand

The following formulae are used for calculating these elasticities:

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

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

$$\text{cross-elasticity of demand for good A with respect to the price of B} = \frac{\text{percentage change in quantity of A demanded}}{\text{percentage change in price of B}}$$

Price elasticity of demand

KEY TERM

price elasticity of demand measures the extent to which the demand for a good changes in response to a change in the price of that good.

Price elasticity of demand measures consumers' responsiveness to a change in a good's price. (It is sometimes called an 'own price' elasticity of demand to distinguish it from cross-elasticity of demand, which measures the responsiveness of demand for a particular good to a change in the price of a completely different good.)

STUDY TIP

You should apply elasticity analysis when assessing the effects of a shift of a demand or supply curve. The extent to which the good's price or equilibrium level of output changes depends on the price elasticity of the curve that has not shifted. For example, when the supply curve shifts leftwards, the price elasticity of the demand curve determines the extent to which the good's price and quantity changes.

EXTENSION MATERIAL

Infinite and zero price elasticity of demand

Horizontal and vertical demand curves have constant elasticities at all points on the curve. A horizontal demand curve, such as the demand curve in Figure 2.3 (a), is infinitely elastic or perfectly elastic. At the other extreme, the vertical demand curve in Figure 2.3 (b) is completely inelastic, displaying a zero price elasticity of demand at all points on the curve. When the price falls, for example from P_1 to P_2, the quantity demanded is unchanged.

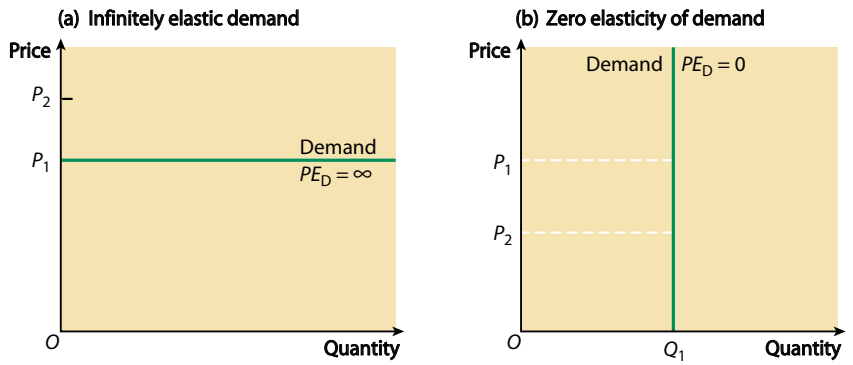


Figure 2.3 Horizontal and vertical demand curves

Figure 2.4 summarises five demand curves you need to know

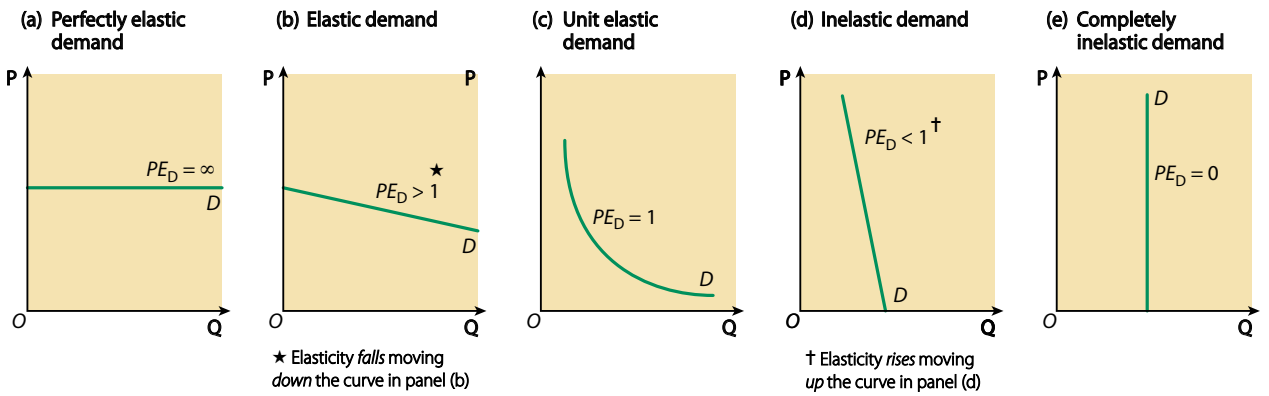


Figure 2.4 Five demand curves you need to know

Factors determining price elasticity of demand

Substitutability

Substitutability, which is explained in section 2.6, is the most important determinant of price elasticity of demand. When a substitute exists for a product, consumers respond to a price rise by switching expenditure away from the good and buying a substitute whose price has not risen. When very close substitutes are available, demand for the product is highly elastic. Conversely, demand is likely to be inelastic when no substitutes or only poor substitutes are available.

Percentage of income

The demand curves for goods or services on which households spend a large proportion of their income tend to be more elastic than those of small items that account for only a small fraction of income. This is because for items on which only a very small fraction of income is spent, particularly for those which are rarely purchased, people hardly notice the effect of a change in price on their income. The same is not true for 'big ticket' items such as a new car or an overseas holiday.

Necessities or luxuries

It is sometimes said that the demand for necessities is price inelastic, whereas demand for luxuries is elastic. This statement should be treated with caution. When no obvious substitute exists, demand for a luxury good may be inelastic, while at the other extreme, demand for particular types of basic foodstuff is likely to be elastic if other staple foods are available as substitutes. It is the existence of substitutes that really determines price elasticity of demand, not the issue of whether the good is a luxury or a necessity.

The 'width' of the market definition

The wider the definition of the market under consideration, the lower the price elasticity of demand. Thus the demand for the bread produced by a particular bakery is likely to be more elastic than the demand for bread produced by all bakeries. This is because the bread baked in other bakeries provides a number of close substitutes for the bread produced in just one bakery. And if we widen the possible market still further, the elasticity of demand for bread produced by all the bakeries will be greater than that for food as a whole.

Time

The time period in question will also affect the price elasticity of demand. For many goods and services, demand is more elastic in the long run than in the short run because it takes time to respond to a price change. For example, if the price of petrol rises relative to the price of diesel, it will take time for motorists to respond because they will be 'locked in' to their existing investment in petrol-engine cars.

In other circumstances, the response might be greater in the short run than in the long run. A sudden rise in the price of petrol might cause motorists to economise in its use for a few weeks before getting used to the price and drifting back to their old motoring habits.

CASE STUDY 2.1

Elasticity and tobacco taxation

Various studies have calculated the price elasticity of demand for cigarettes of different groups in society such as the young and the old, and men and women.

A World Bank review concluded that price rises of about 10% would on average reduce tobacco consumption by about 4% in richer countries. Smokers in poorer nations also tend to be more sensitive to price changes.

Reviewing 86 studies, Gallet and List found a mean price elasticity of –0.48, meaning that, on average, a 10% increase in price will be followed by a decrease in consumption of 4.8%. They also found greater responsiveness among younger people, with an average price elasticity of –1.43 for teenagers, –0.76 for young adults, and –0.32 for adults. They found an average price sensitivity of –0.50 for men and –0.34 for women. Studies have also tended to show greater price sensitivity among low-income groups.

Follow-up questions

1 Most of the elasticity statistics quoted above lie between zero and –1. Discuss the significance of this for governments.
2 Suggest two reasons why adult smokers may be less responsive to a rise in the price of cigarettes than teenage smokers.

QUANTITATIVE SKILLS 2.1

Worked example: performing an elasticity calculation

People's average incomes fall from £1,000 a week to £600 a week. As a result, demand for potatoes increases from 1 million tonnes to 1.2 million tonnes a week. Calculate the income elasticity of demand for potatoes.

The formula for calculating income elasticity of demand is:

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

The proportionate change in demand is + 20%. The proportionate change in income is –40%. Placing these figures into the formula:

$$\text{income elasticity of demand} = +\frac{20\%}{-40\%}$$
$$= -0.5$$

The minus sign indicates that the good is an inferior good. The number 0.5 indicates that demand is inelastic.

A simple rule for detecting whether demand is price elastic or inelastic

As an alternative to using the formula to calculate price elasticity of demand between two points on a demand curve, a simple rule can be used to determine the general nature of the elasticity between the two points:

- if total consumer expenditure increases in response to a price fall, demand is elastic
- if total consumer expenditure decreases in response to a price fall, demand is inelastic
- if total consumer expenditure remains constant in response to a price fall, demand is neither elastic nor inelastic, i.e. elasticity = unity (or since the demand curve slopes downward, the elasticity is minus unity or –1)
- Consider for example Figure 2.5 below, which shows an elastic demand curve D. At price P_1, total; consumer expenditure is shown by the rectangle

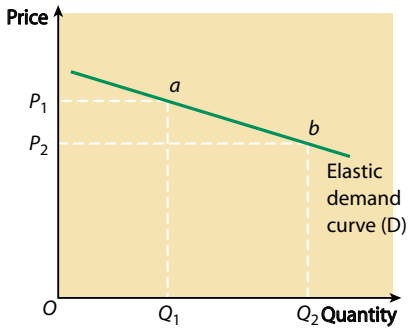


Figure 2.5 The effect of a price fall on total consumer expenditure when demand is elastic

bounded by P_1,a, Q_1 and 0. When the price falls to P_2, the consumer expenditure rectangle changes to the area bounded by P_2, b, Q_3 and 0. Clearly, the second of these rectangles is larger than the first rectangle, so total consumer expenditure increases, following a fall in price, when the demand curve is elastic.

STUDY TIP

Remember that elasticities are calculated by dividing the percentage change in quantity demanded (or supplied) by the percentage change in the variable that caused the change.

Income elasticity of demand

KEY TERM

income elasticity of demand measures the extent to which the demand for a good changes in response to a change in income, it is calculated by dividing the percentage change in quantity demanded by the percentage change in income.

The nature of **income elasticity of demand** — which measures how demand responds to a change in income — depends on whether the good is a normal good or an inferior good. Income elasticity of demand is always negative for an inferior good and positive for a normal good. This is because the quantity demanded of an inferior good falls as income rises, whereas the quantity demanded of a normal good rises with income.

Normal goods can be further divided into superior goods or luxuries, for which the income elasticity of demand is greater than +1, and basic goods, with an income elasticity lying between 0 and +1. Although the quantity demanded of a normal good always rises with income, it rises more than proportionately for a superior good (such as a luxury car). Conversely, demand for a basic good such as shoe polish rises at a slower rate than income.

The size and sign (positive or negative) of income elasticity of demand affects how a good's demand curve shifts following a change in income.

TEST YOURSELF 2.1

The income elasticity of demand for foreign holidays in the UK is +1.6. What does this tell you about UK demand for foreign holidays?

Cross-elasticity of demand

KEY TERM

cross-elasticity of demand measures the extent to which the demand for a good changes in response to a change in the price of another good, it is calculated by dividing the percentage change in quantity demanded by the percentage change in the price of another good.

Cross-elasticity of demand measures how the demand for one good responds to changes in the price of another good. The cross-elasticity of demand between two goods or services indicates the nature of the demand relationship between the goods. There are three possibilities:

- complementary goods (or joint demand)
- substitutes (or competing demand)
- an absence of any discernible demand relationship

Cars and petrol or diesel fuel, for example, are in joint demand. A significant increase in fuel prices will have some effect on the demand for cars, though the effect may not be great. By contrast, private car travel and bus travel are substitute goods. A significant increase in the cost of running a car will cause some motorists to switch to public transport, provided its price does not rise by a similar amount as well.

As with the case with income elasticity of demand, the size and sign (positive or negative) of cross elasticity of demand affects how a good's demand curve shifts following a change in the price of another good. For example, a cross elasticity of demand of + 0.3 for bus travel with respect to the price of running a car indicates that a 10 per cent increase in the cost of private motoring would cause the demand for bus travel to increase by just 3 per cent. For most demand relationships between two goods, cross elasticities of demand are inelastic rather than elastic, both when the goods are in joint demand and when they are substitutes.

KEY CONCEPT

Elasticity, a summary

Elasticity basically means responsiveness. Demand elasticities measure how consumers respond to a change in a good's price, income, or the price of another good. You should know the formulae for each type of elasticity.

TEST YOURSELF 2.2

The price of a gaming console for a particular games provider rises by 30%. In subsequent years the demand for games cartridges for this system falls by 10%. What does this tell you about the cross-elasticity of demand between the two products?

2.3 The determinants of the supply of goods and services

Market supply

Normally when economists refer to **supply**, they mean market supply. **Market supply** is the quantity of a good or service that all the firms or producers in the market plan to sell at different prices. By contrast, supply by a single firm is the quantity that a particular firm within the market would like to sell. As with demand, the relationship between the two is simple. Market supply is just the sum of the supply of all the firms or producers in the market at different market prices.

KEY TERM

market supply the quantity of a good or service that all firms plan to sell at given prices in a given period of time.

The market supply curve

The market supply curve in Figure 2.6 illustrates the 'law' of supply, which states that as a good's price rises, more is supplied. If the price starts off low, for example at P_1, firms are willing to supply Q_1. But if the price rises to P_2, planned supply increases to Q_2.

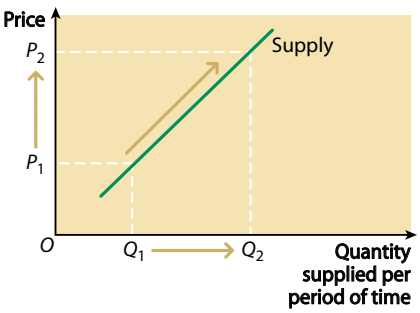


Figure 2.6 A market supply curve

The main reason for upward-sloping supply curves stems from the profit-maximising objective which economists assume firms have. If we assume that a firm always aims to make the biggest possible profit, it follows that a firm will only want to supply more of a good if it is profitable so to do.

KEY TERM

profit the difference between total sales revenue and total costs of production.

For a firm, **profit** is the difference between the sales **revenue** the firm receives when selling the goods or services it produces and the costs of producing the goods. Assuming firms do not change their size or scale, the cost of producing extra units of a good generally increases as firms produce more of the good. As a result, it is unprofitable to produce and sell extra units of a good unless the price rises to compensate for the extra cost of production. Rising prices will also encourage new firms to enter the market. The result is the upward-sloping market supply curve shown in Figure 2.6.

Firms only want to supply more of a good if it is profitable to do so

KEY TERM
revenue the money a firm receives from selling its output, calculated by multiplying the price by the quantity sold.

As with demand, the supply of a good varies according to the time period being considered. Hence the words 'Quantity supplied per period of time' on the horizontal axis in Figure 2.6. In later diagrams, this is shortened to 'Quantity'. But again, as with demand, remember that this is an abbreviation.

TEST YOURSELF 2.3
Having set the price of bread at £3 a loaf, bread shops bake 10 million loaves which they then try to sell. However, 8 million of these loaves remain unsold. What is likely to happen next in the bread market?

SYNOPTIC LINK
Microeconomic supply curves look very similar to aggregate supply curves which are explained in Chapter 7. Don't confuse the two.

Shifts of the supply curve

Earlier in the chapter, we saw that a market demand curve shows how much all the consumers in the market plan to buy at different prices of the good, assuming all the other factors that influence demand remain constant. These 'other factors' were called the conditions of demand and we explained how, if any of them change, the demand curve shifts to a new position.

In exactly the same way, a market supply curve shows the quantities of the good that all the firms in the market plan to supply at different possible prices, assuming the **conditions of supply** remain unchanged. Again, if the ceteris paribus assumption no longer holds, one or more of the conditions of supply change, and the supply curve shifts to a new position.

KEY TERM
conditions of supply determinants of supply, other than the good's own price, that fix the position of the supply curve.

The conditions of supply

The main conditions of supply are:

- costs of production, including
  - wage costs

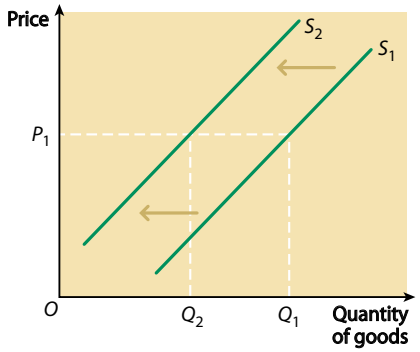


Figure 2.7 A leftward shift of the supply curve

- raw material costs
- energy costs
- costs of borrowing
- technical progress
- taxes imposed on firms, such as VAT, excise duties and the business rate
- subsidies granted by the government to firms

As we have noted, if any of the conditions of supply change, the supply curve shifts to a new position. As with demand, a rightward shift of supply is known as an **increase in supply**, whereas a leftward shift is known as a **decrease in supply**. An increase in wage costs, which for many firms are the most important cost of production, shifts the supply curve leftward (or upward). Firms reduce the quantity of the good they are prepared to supply because production costs have risen. For example, when the price is P_1 in Figure 2.7, a leftward shift of supply from S_1 to S_2 causes the quantity firms are prepared to supply to fall from Q_1 to Q_2.

Supply curves also tend to shift rightwards when technical progress occurs, reducing production costs, or when firms enter the market. Conversely, the supply curve shifts leftward when costs rise or firms leave the market.

KEY TERMS

increase in supply a rightward shift of the supply curve.

decrease in supply a leftward shift of the supply curve.

EXTENSION MATERIAL

How expenditure taxes and subsidies shift supply curves

A supply curve also shifts leftward (or upward) when the government imposes an expenditure tax such as customs and excise duties and VAT on firms. From a firm's point of view, the tax is similar to a rise in production costs. Firms try to pass the tax on to consumers by increasing the price of the good. For this reason, expenditure taxes provide examples of indirect taxes. The higher price charged means consumers indirectly pay the tax, even though the firms and not the consumers pay the tax to the government.

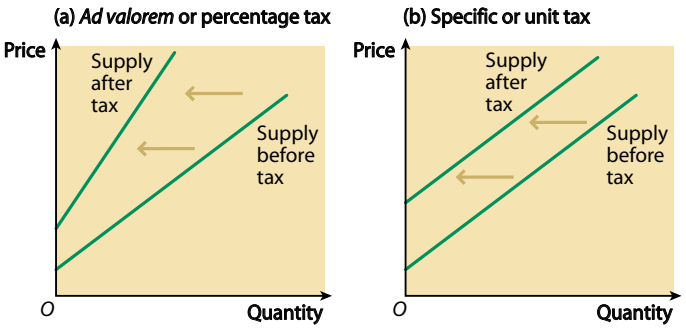


Figure 2.8 An expenditure tax shifting a supply curve

How the supply curve shifts depends on whether the tax firms are forced to pay is an ad valorem tax or a specific tax. In the case of an ad valorem tax such as VAT, which is levied at the same percentage rate (e.g. 20%) on the price, the new supply curve is steeper than the old supply curve. This is shown in Figure 2.8 (a). 20% of the price of a good priced at £1.00 without the tax is 20 pence. However, if the price of good is £2.00, the government collects 40 pence of tax revenue for each unit of the good sold. But in the case of a specific tax or unit tax, such as the excise duty levied on tobacco, alcohol or petrol, the tax levied does not depend on the good's price. Because of this, the new and old supply curves are parallel to each other, separated, as Figure 2.8 (b) illustrates, by the size of the tax levied on each unit of the good. When an indirect tax is imposed on a good the supply curve shifts vertically upwards by the amount of the tax.

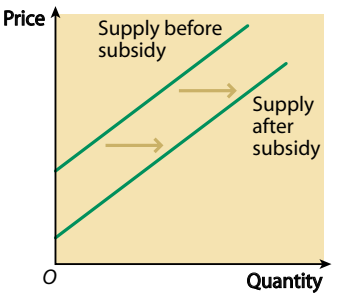


Figure 2.9 A specific or unit subsidy shifting a supply curve

A subsidy given by the government to producers has the opposite effect to an expenditure tax, it shifts the supply curve to the right. In the case of a specific subsidy, which is illustrated in Figure 2.9, the sum of money paid to firms for each unit of the good produced is the same whatever the price of the good and hence the vertical distance between the two supply curves equals the subsidy per unit. By contrast, the size of the subsidy would vary if the subsidy were dependent on the price of the good.

EXTENSION MATERIAL

How the effect of an expenditure tax depends on elasticity of demand

In Figure 2.8 an expenditure tax imposed by the government on firms shifts the good's supply curve leftward. From the point of view of the firms that produce and sell the good, the tax has the same effect as a rise in costs of production such as a rise in wage costs. As is the case with cost increases, by raising the price of the good to cover the tax, firms try to increase the price charged to customers by the full amount of the tax. However, their ability to do this depends on price elasticity of demand.

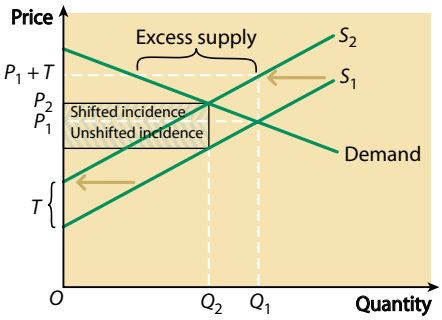


Figure 2.10 Shifting the incidence of a tax when demand is price elastic

Figure 2.10 shows that when demand is relatively elastic, consumer resistance means that some but not all of a tax (in this case a specific tax) is passed on to consumers as a price rise. The tax per unit (labelled T in Figure 2.10) is measured by the vertical distance between S_1 (the supply curve before the tax was imposed) and S_2 (the supply curve after the tax was imposed). Immediately after the tax is imposed, firms may try to raise the price to $P_1 + T$, passing all the tax on to consumers. However, there is excess supply at this price. Via the market mechanism, the price falls to P_2, thereby eliminating the excess supply. In the new equilibrium, part, but not all, of the tax has been passed onto consumers as a price rise.

The part of the tax passed on to consumers is called the shifted incidence of the tax. The rest of the tax (the unshifted incidence) is borne by firms or producers. In Figure 2.10, the total tax revenue paid by firms to the government is shown by the rectangle bounded by heavy black lines. The part of the tax rectangle above what was the equilibrium price (P_1) before the tax was imposed, shows the shifted incidence of the tax. The part of the tax rectangle below P_1 shows the unshifted incidence.

You should now draw diagrams similar to Figure 2.10, but with perfectly elastic, relatively inelastic and completely inelastic demand curves. The diagrams will show that firms' ability to pass the incidence of a tax on to consumers as a price rise is greatest when demand is completely inelastic, and non-existent when demand is perfectly elastic.

Students often confuse the effect of an increase in an indirect tax imposed on firms with the effect of a direct tax such as income tax imposed on individuals. Whereas a tax imposed on firms shifts the *supply curve* of a good, by reducing consumers' incomes, income tax shifts the *demand curve* for a good. An increase in income tax shifts the demand curve for normal goods leftward, but if the good is an inferior good, the demand curve shifts rightward.

Finally, note that subsidies granted to firms have the opposite effect to taxes imposed them. Subsidies shift the supply curve rightward or downward, showing that firms are prepared to supply more of the good at all prices.

KEY CONCEPT

Supply, a summary

Market supply is the total amount of a good or service that all the firms in the market wish to sell at different possible prices. A market supply curve usually slopes upward, showing that the higher its price, the more of the good firms would like to sell. This is because higher profits can be made at higher prices.

2.4 Price elasticity of supply

KEY TERM
price elasticity of supply
measures the extent to which the supply for a good changes in response to a change in the price of that good.

In contrast to demand elasticities explained earlier in the chapter, there is only one supply elasticity you need to know. This is **price elasticity of supply**, which measures how the supply of a good responds to an initial change in a good's price.

The formula for price elasticity of supply is:

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

Just as with demand curves, you must not confuse the *slope* of a supply curve with its *elasticity*. Upward-sloping **straight-line** (linear) supply curves display the following price elasticities:

- if the supply curve intersects the price axis, the curve is elastic at all points, though elasticity falls towards unity moving from point to point up the curve
- if the supply curve intersects the quantity axis, the curve is inelastic at all points, though elasticity rises towards unity moving from point to point up the curve
- if the supply curve passes through the origin, elasticity equals unity (+1) at all points on the curve

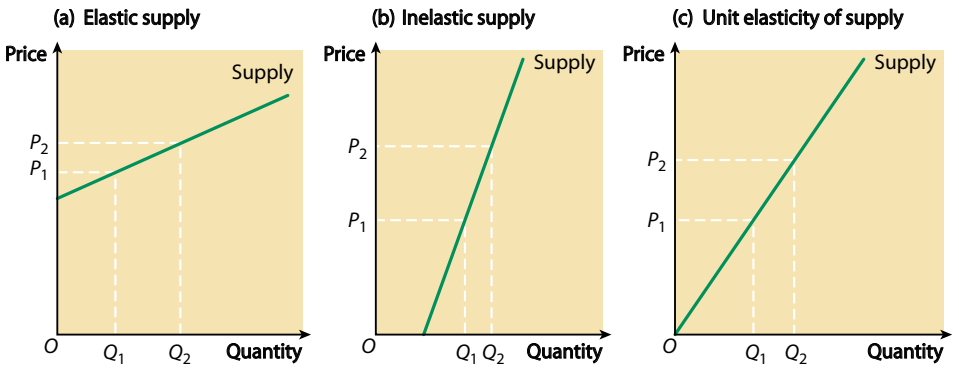


Figure 2.11 Price elasticity of supply and linear supply curves

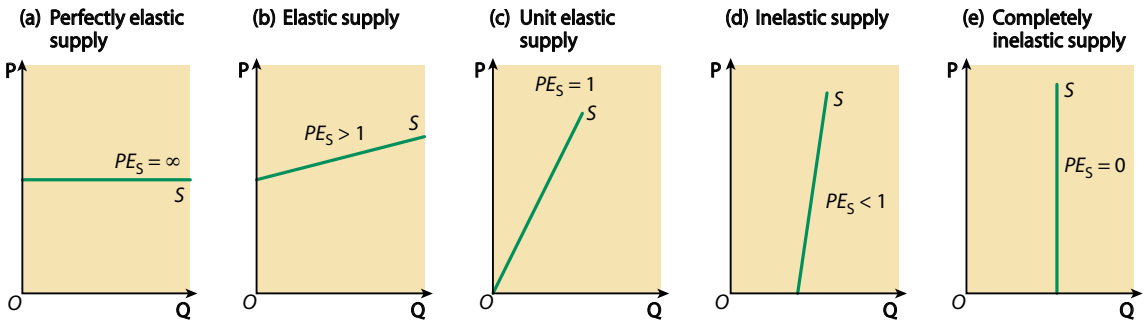


Figure 2.12 The five linear supply curves you should know

STUDY TIP

You should understand why price elasticity of supply is usually positive and why price elasticity of demand is usually negative.

TEST YOURSELF 2.4

If the price of a good with a price elasticity of supply of 2.5 increases by 10%, the quantity supplied will:

A Fall by 25%

B Rise by 25%

C Fall by 40%

D Rise by 0.4%

Which is the correct answer, and why?

The factors determining price elasticity of supply

The length of the production period

If firms can convert raw materials into finished goods very quickly (e.g. in just a few hours or days), supply will tend be more elastic than when several months are involved in production, as with many agricultural goods.

The availability of spare capacity

When a firm possesses spare capacity, and if labour and raw materials are readily available, production can generally be increased quickly in the short run.

The ease of accumulating stocks

When stocks of unsold finished goods are stored at low cost, firms can respond quickly to a sudden increase in demand. Alternatively, firms can respond to a price fall by diverting current production away from sales and into stock accumulation. The ease with which stocks of raw materials or components can be bought from outside suppliers and then stored has a similar effect.

The ease of switching between alternative methods of production

When firms can quickly alter the way they produce goods — for example, by switching between the use of capital and labour — supply tends to be more elastic than when there is little or no choice. In a similar way, if firms produce a range of products and can switch raw materials, labour or machines from one type of production to another, the supply of any one product tends to be elastic.

The number of firms in the market and the ease of entering the market

Generally, the more firms there are in the market, and the greater the ease with which a firm can enter or leave, the greater the elasticity of supply.

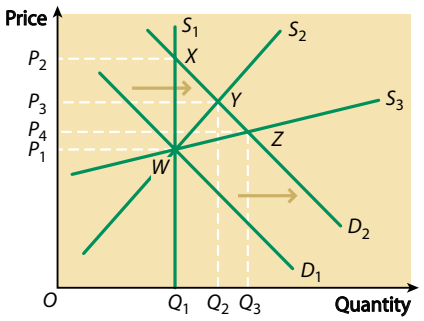


Figure 2.13 The effect of the time period upon price elasticity of supply

Time

I have already noted that demand is more elastic in the long run than in the short run because it takes time to respond to a price change. The same is true for supply. Figure 2.13 shows three supply curves of increasing elasticity, S_1, S_2 and S_3, which illustrate respectively market period supply, short-run supply and long-run supply.

- **Market period supply** The market period supply curve S_1 is shown by a vertical line. S_1 depicts the situation facing firms following a sudden and unexpected rightward shift of demand from D_1 to D_2. When surprised by a sudden increase in demand, firms cannot immediately increase output. In the market period, supply is completely inelastic, and the price rises from P_1 to P_2 to eliminate the excess demand brought about by the rightward shift of the demand curve.
- **Short-run supply** The higher price means that higher profits can be made, creating the incentive for firms to increase output. In the short run, firms increase output by hiring more variable factors of production such as labour. The short-run increase in output is shown by the movement up the short-run supply curve, S_2. The short-run supply curve is more elastic than the market period supply curve, S_1. In the short run, supply increases to Q_2, and the price falls from P_2 to P_3.
- **Long-run supply** If firms believe the increase in demand will be long-lasting, and not just a temporary phenomenon, they may increase the scale of production by employing more capital and other factors of production that are fixed in the short run, but variable in the long run. When this happens, firms move along the long-run supply curve S_3. Output rises to Q_3, and the price falls once again, in this case to P_4.

In a competitive industry with low or non-existent barriers to entry, elasticity of supply is greater in the long run than in the short run, because in the long run firms can enter or leave the market. Short-run supply is less elastic because supply is restricted to the firms already in the industry.

STUDY TIP

You should understand why, for most goods, both the demand curve and the supply curve are more price elastic in the long run than in the short run.

CASE STUDY 2.2

Housing market elasticities in the UK

UK households have an income elasticity of demand for housing that exceeds +1. However, demand for housing is price inelastic. These demand elasticities, combined with a low price elasticity of supply for housing, push the UK's housing market towards long-term rising prices.

New housing would need to have a price elasticity of supply of +10 for supply to equal demand in the long term. But if the price elasticity of supply for new housing remains low, as Table 2.1 shows, house prices will never be stable in the UK when the demand for housing is increasing.

Table 2.1 Price elasticity of supply in the housing market for different countries

Country	Price elasticity of supply
Canada	+1.2
UK	+0.4
USA	+2.0
France	+0.3
USA	+1.4
Ireland	+0.6

Follow-up questions

1 Suggest why the price elasticity of supply of new houses is lower in the UK than in the USA.
2 'New housing would need to have a price elasticity of supply of +10 for supply to equal demand in the long term.' Explain this statement.

EXTENSION MATERIAL

A closer look at perfectly elastic demand and supply

Figure 2.14 shows a perfectly elastic demand curve and a perfectly elastic supply curve. (These can also be labelled infinitely elastic demand and infinitely elastic supply.) Although the two parts of Figure 2.14 appear to be identical (apart from the labels), this is misleading. The apparent similarity disguises a significant difference between perfectly elastic demand and perfectly elastic supply. In Figure 2.14 (a), demand is infinitely elastic at all prices on or *below* the demand curve, though if the price rises *above* the demand curve (for example from P_1 to P_2), the amount demanded immediately falls to zero. This is because perfect substitutes are available when demand is perfectly price elastic. Customers cease to buy the good as soon as the price rises *above* the demand curve, switching spending to the perfect substitutes whose prices have not changed.

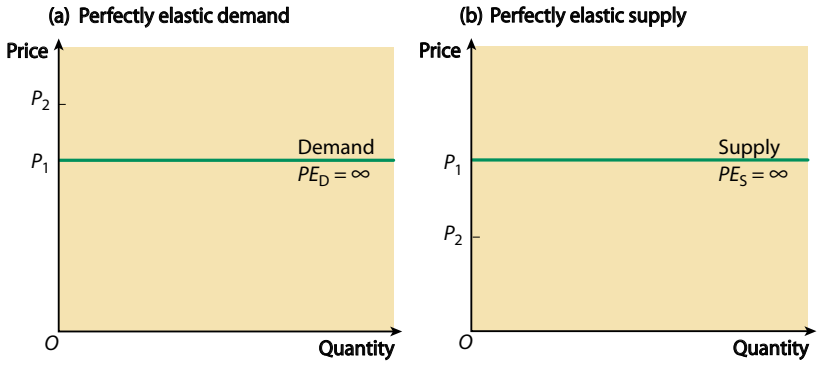


Figure 2.14 Perfectly price elastic demand and supply curves

By contrast, in Figure 2.14 (b), supply is infinitely elastic at *all* prices on or *above* the supply curve, though if the price falls *below* the supply curve (for example from P_1 to P_2), the amount supplied immediately drops to zero. P_1 is the minimum price acceptable to firms. If they are paid this price (or any higher price), firms stay in the market. The incentive to stay in the market disappears at any lower price and firms leave the market, unable to make sufficient profit.

Shifts of and adjustments along, demand and supply curves

As mentioned earlier in this chapter, the extent to which price or the quantity bought and sold changes following a shift of demand or supply depends upon the slope and elasticity of the curve that has not shifted. Figure 2.15 shows a demand curve shifting rightward — along a gently sloping supply curve in (a) and along a much more steeply sloping supply curve in (b). Prior to the shift of demand, equilibrium occurs at point X in both (a) and (b). In each case, the rightward shift of demand induces an adjustment along the supply curve to a new equilibrium at point Z. With the elastic supply curve shown in (a), the quantity adjustment is greater than the price adjustment. The reverse is true in (b), where the supply curve is inelastic.

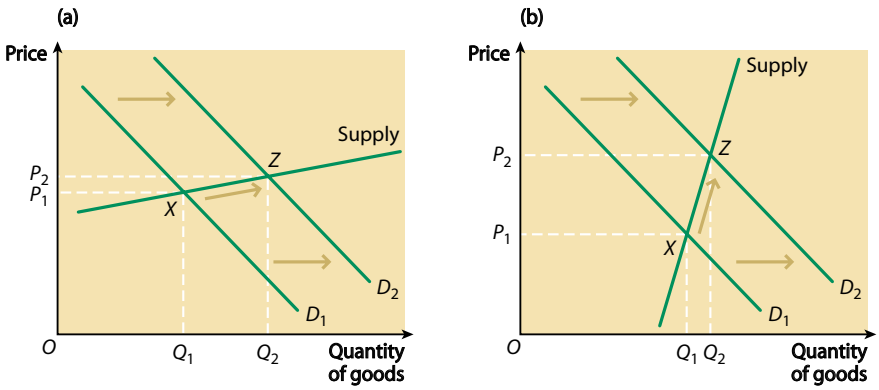


Figure 2.15 The adjustment to a new equilibrium following a shift of demand

STUDY TIP

You should apply elasticity analysis when answering questions on the effects of a shift of a demand or supply curve. The extent to which the good's price or equilibrium level of output changes depends on the price elasticity of the curve that has not shifted. For example, when the supply curve shifts leftwards, the price elasticity of the demand curve determines the extent to which both the good's price and quantity change.

KEY CONCEPT

Shifts of curves vs movements along curves

Whenever a demand curve shifts, an adjustment or movement takes place along the supply curve until a new equilibrium is achieved. Likewise, whenever a supply curve shifts, a movement takes place along the demand curve until a new equilibrium is achieved. It is important to understand that the elasticity of the curve *which has not shifted* determines the extent to which price or quantity changes following the shift of the other curve. Figure 2.15 shows this.

2.5 The determination of equilibrium market prices

Demand and supply curves in a competitive market

We now bring together the market demand and market supply curves explained earlier in the chapter to see how the equilibrium price is achieved in a competitive market within the economy. The market we will look at is the tomato market. Its essential features are shown in Figure 2.16.

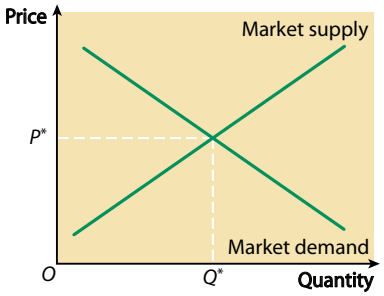


Figure 2.16 Market equilibrium in the tomato market

The market demand curve in Figure 2.16 shows how many tomatoes all the consumers in the market plan to purchase at different prices in a particular period of time. The market supply curve shows how many tomatoes all the farmers and firms in the market wish to supply at different prices in the same time period.

The equilibrium price

The concepts of **equilibrium** and its opposite, **disequilibrium**, are important in economic theory and analysis. You should think of equilibrium as a *state of rest* or a *state of balance between opposing forces*. In a market, the opposing forces are supply and demand. **Market equilibrium**, which is shown in Figure 2.16, occurs where the demand curve and the supply curve cross each other. At price P^*, households *plan* to demand exactly the same quantity of tomatoes that firms *plan* to supply. P^* therefore is the equilibrium price, with Q^* being the equilibrium quantity.

In summary:

A market is in disequilibrium when:
- planned demand < planned supply, in which case the price falls, or when
- planned demand > planned supply, in which case the price rises.

A market is in equilibrium when:
- planned demand = planned supply, in which case the price does not change.

KEY TERMS

equilibrium a state of rest or balance between opposing forces.

disequilibrium a situation in a market when there is excess supply or excess demand.

market equilibrium when planned demand equals planned supply in the market.

STUDY TIP

It is important to understand the concepts of equilibrium and disequilibrium in economics. You will come across many other examples besides market equilibrium and disequilibrium explained in this chapter. In your later studies, look out for macroeconomic equilibrium and balance of payments equilibrium.

Disequilibrium in a market

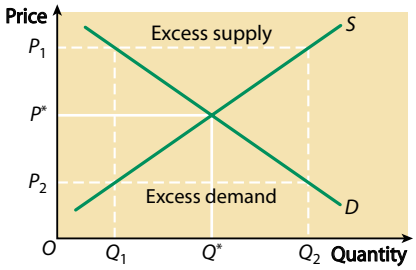


Figure 2.17 Disequilibrium and equilibrium in the tomato market

It is impossible at most prices for both households and firms to simultaneously fulfil their market plans. In Figure 2.17, P_1 is a disequilibrium price for tomatoes because the tomato growers and sellers cannot fulfil their plans at this price. When price is P_1 in Figure 2.17, firms would like to supply Q_2, but households are only willing to purchase Q_1.

To explain this further, it is useful to divide the market into two 'sides' — the short side and the long side. When the price is P_1, households, or the people wishing to buy tomatoes, are on the short side of the market, while tomato producers are on the long side. The economic agents on the short side can always fulfil their market plans, but those on the long side cannot. Thus, when the price is P_1, households can purchase exactly the quantity of tomatoes they wish to, namely Q_1. Farmers and other tomato producers, however, are in a different situation. They would like to sell Q_2, but can only sell Q_1, as long as the price remains at P_1. The difference between Q_2 and Q_1 is **excess supply** or unsold stock.

The market is also in disequilibrium at price P_2, because households are unable to buy as much as they wish to at this price. Households would like to buy Q_2 of tomatoes, but they can't, because at this price tomato producers are only willing to supply Q_1. The situation is now reversed compared to P_1. Tomato buyers are on the long side of the market and farmers and tomato sellers are on the short side. In this case, the difference between Q_2 and Q_1 is **excess demand** or unfulfilled demand. Households end up buying Q_1 of tomatoes because this is the maximum quantity tomato producers are prepared to sell at this price.

KEY TERM

excess supply when firms wish to sell more than consumers wish to buy, with the price above the equilibrium price.

excess demand when consumers wish to buy more than firms wish to sell, with the price below the equilibrium price.

TEST YOURSELF 2.5

The equilibrium price for centre court tickets at Wimbledon to watch the men's tennis final is £5,000. The Lawn Tennis Association sells these tickets for £100. What do think will happen in the second-hand market for tickets to watch the tennis match?

ACTIVITY

Look for a major sports event or a rock concert due to take place in the near future. Research the media to find out whether a 'black market' has emerged for tickets for the event. Analyse your findings.

SYNOPTIC LINK

Two examples of equilibrium and disequilibrium in macroeconomics are macroeconomic equilibrium and balance of payments equilibrium. Look out for these in Chapters 7 and 8.

QUANTITATIVE SKILLS 2.2

Worked example: calculating the equilibrium price of a good

Table 2.2 shows the demand and supply schedules for chocolate bars.

Table 2.2

Price per bar (£)	Quantity of bars demanded per week	Quantity of bars supplied per week
0.75	180	240
0.70	200	200
0.65	220	160
0.60	240	120

As a result of a fall in the price of cocoa beans, the supply of chocolate bars rises by 60 bars at all prices. What is the new equilibrium price of chocolate bars?

According to the table the initial equilibrium price of chocolate bars is 70 pence, at which demand and supply are equal at 200 chocolate bars. If 60 more chocolate bars are supplied at each price, following the fall in the cost of manufacturing the bars, 300 bars are supplied at a price of 75 pence, 260 bars at a price of 70 pence, and 220 bars at a price of 65 pence. This is the new equilibrium price.Demand equals supply at 220 bars at this price. The supply curve has shifted upward by 60 at each price.

EXTENSION MATERIAL

Incentives to change

We shall now introduce an important assumption about economic behaviour which recurs throughout economic theory and analysis. This is the assumption that whenever an economic agent, such as a household or firm, fails to fulfil its market plans, it has an incentive to change its market behaviour. When excess supply exists in the market (as at P_1 in the tomato market, Figure 2.18), the market mechanism or price mechanism swings into action to get rid of unsold stocks. This moves the market towards equilibrium. Economists assume that firms react to stocks of unsold goods by accepting a lower price. Eventually the price falls until the amount that households wish to buy equals exactly the quantity that firms are prepared to supply. In the tomato market, equilibrium is reached at price P^*.

In the case of excess demand, it is useful to divide households into two groups of customers. In the tomato market, the first group, depicted by the distance from O to Q_1, are *lucky* customers who buy the good at price P_1 before the available quantity runs out. By contrast, *unlucky* households, shown by the distance from Q_1 to Q_2, cannot buy the good at P_1, possibly because they turned up too late. However, in order to be able to purchase the good, unlucky consumers bid up the price until, once again, equilibrium is reached at P^*.

The equilibrium price, P^*, is the *only* price which satisfies both households and firms. Consequently, once this price is reached, neither group has reason to change their market plans. At P^*, planned demand equals planned supply and the market clears.

STUDY TIP

Many students never really get to grips with microeconomic analysis because they fail to understand the difference between market plans and market action. Your market plans are what you want to do when you go shopping. Your market action is what you end up doing.

How a shift of supply disturbs market equilibrium

Once supply equals demand in a market, for example at point X in Figure 2.18, the market remains in equilibrium until an external event hits the market and causes either the market supply curve or the market demand curve to shift to a new position.

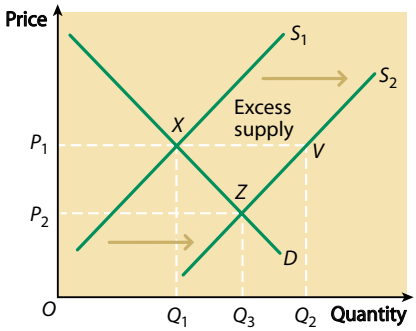


Figure 2.18 The effect of a rightward shift of the market supply curve of tomatoes

Figure 2.18 illustrates what happens in the tomato market when an event such as a bumper harvest causes the supply curve of tomatoes to shift rightward, from S_1 to S_2. Before the shift of the supply curve, P_1 was the equilibrium price of tomatoes. However, once the supply curve shifts, P_1 becomes a disequilibrium price. Too many tomatoes are offered for sale at this price, which means there is excess supply in the market. The excess supply is shown by the distance Q_2 minus Q_1.

To get rid of this unsold stock, tomato producers reduce the price they are prepared to accept. The market price falls from P_1 to P_2, which eliminates the excess supply. In the new equilibrium, planned supply once again equals planned demand, but at the lower equilibrium price of P_2.

STUDY TIP

Make sure you can distinguish between a shift of a supply or demand curve, and the adjustment to a new equilibrium along the curve that does not shift.

How a shift of demand disturbs market equilibrium

Figure 2.19 shows what happens in the market for tomatoes following an increase in consumers' incomes. Tomatoes are usually considered a normal good: that is, a good for which demand increases as income increases. Before the increase in consumers' incomes, the equilibrium price of tomatoes was P_1, determined at the intersection of curves D_1 and S. At this price, planned demand equals planned supply. However, increased incomes shift the market demand curve rightward from D_1 to D_2. Immediately, disequilibrium replaces equilibrium in the market. The rightward shift of demand creates excess demand in the market, as long as the price remains at P_1. Excess demand is shown by Q_2 minus Q_1, or the distance between H and K.

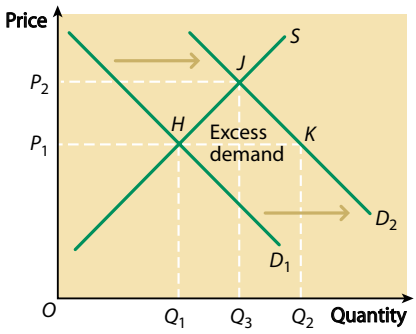


Figure 2.19 The effect of a rightward shift of the market demand curve for tomatoes

The market adjustment mechanism now swings into action to get rid of the excess demand. The price increases to P_2 to eliminate the excess demand, and the quantity of tomatoes bought and sold rises to Q_3. In response to the increase in demand from H to K, there is a movement along the supply curve between H and J (an extension of supply) to establish the new equilibrium.

TEST YOURSELF 2.6

There are 30 million customers and 1 million firms producing the good in a particular market in the UK. Explain why you would classify this market as being competitive or uncompetitive.

KEY CONCEPT

Equilibrium and disequilibrium in a market

A market is in equilibrium when demand equals supply and the demand curve crosses the supply curve. In this situation there is no excess demand or excess supply in the market. Unless some event disturbs the equilibrium, there is no reason for the price to change.

Disequilibrium exists at any price other than the equilibrium price. When the market is in disequilibrium, either excess demand or excess supply exists in the market. Excess demand causes the price to rise until a new equilibrium is established. Conversely, excess supply causes the market price to fall until equilibrium is achieved.

CASE STUDY 2.3

To do with the price of fish

For a market to be competitive, buyers and sellers need accurate information about supply and demand. Before the use of mobile phones, fishermen in southern India lacked information about prices being charged for newly caught fish in other fishing villages along the coast. This lack of information led to small, separated and relatively uncompetitive fish markets.

If a fisherman made a good catch, other fishermen operating out of his home port and fishing in the same area would also catch a lot of fish. So when all the fishing vessels sailed back home, fish prices in the local village fish market would slump because of excess supply.

One possibility was to sail down the coast after the catch was made, in the hope that in other villages fish catches were smaller and prices were therefore better. But, because of high fuel prices and uncertainty about what might be happening elsewhere, fishermen generally chose to return to their own village. This was wasteful because oversupply led to fish being thrown away, even though they might have been sold in more distant fish markets. Another result was there were wide variations in fish prices in different fishing villages.

However, after mobile phones came to southern India, fishermen were able to call markets all along the coast while they were still at sea to find out where prices were highest. They were then more confident about selling their fish further afield, despite the fuel costs. The number of unsold fish thrown back into the sea fell dramatically. Fish prices also fell. The 'law of one price' was operating — there now being a single price along the coast for more or less identical fish. By improving the exchange of information between fishermen, mobile phone technology has therefore contributed to the growth of a larger and much more competitive market.

Follow-up questions

1 Explain how the case study illustrates how better information on the part of buyers or sellers improves the way a market functions.
2 Name two UK markets that have been made more competitive as a result of the growing use of mobile phones.

CASE STUDY 2.4

Auctions

In theory, an auction provides a quick and efficient method of establishing equilibrium in a market. Auctions have been brought into many people's everyday lives through sites such as eBay. But they also have a long history spanning many different domains. For example, the US government uses auctions to sell Treasury bills and timber and oil leases, Christie's and Sotheby's use them to sell art, and Morrell & Co. and the Chicago Wine Company use them to sell wine.

Each bidder has an intrinsic value for the item being auctioned — he or she is willing to purchase the item for a price up to this value, but not for any higher price.

Three types of auction at which a single item is sold are:

1 **Ascending-bid auctions**, also called English auctions. The seller gradually raises the price, bidders drop out until only one bidder remains, and that bidder wins the object at this final price.
2 **Descending-bid auctions**, also called Dutch auctions. The seller gradually lowers the price from a high initial value until the first moment when a bidder accepts and pays the current price. These auctions are called Dutch auctions because flowers have long been sold in the Netherlands using this procedure.
3 **First-price sealed-bid auctions.** In this kind of auction, bidders submit simultaneous 'sealed bids' to the seller. The terminology comes from the original format for such auctions, in which bids were written down and provided in sealed envelopes to the seller, who would open them all together. The highest bidder wins the object and pays the value of her bid.

Follow-up questions

1 eBay is the best-known and the largest internet-based auction. Give your views on the advantages and disadvantages of trading goods on eBay.
2 Explain how the use of the internet has affected the costs consumers incur when searching for goods they want to buy.

TEST YOURSELF 2.7
Describe how auctions on eBay take place.

ACTIVITY
Watch an auction taking place on television, for example a house-price or antiques auction. Write a short report on the events taking place. (You may have to record the programme or do the activity in your holidays, as this type of programme tends to be broadcast during school hours.)

2.6 The interrelationship between markets

So far in this chapter we have looked at how the price mechanism operates in a competitive market. We have seen how shifts of either the demand or supply curve for the good disturb market equilibrium and trigger an adjustment process to establish a new equilibrium.

Shifts of curves are often caused by events taking place in other markets in the economy. They can be caused by a change of price of a good in joint supply, or on the demand side, by a change in price of a good in joint demand, a substitute good, a good in composite demand, or a good in derived demand.

Joint supply and competing supply

KEY TERMS
joint supply when one good is produced, another good is also produced from the same raw materials.

Joint supply occurs when production of one good leads to the supply of a by-product. Suppose, for example, that the demand for beef increases, possibly because of rising incomes in developing countries. The slaughter of more cows to meet this demand leads to production of more cow hides, which increases the supply of leather. The interrelationship between the beef and leather markets is shown in Figure 2.20. Note that the price of beef *rises* following the rightward shift of the *demand* curve for beef, but the price of leather *falls*

following the rightward shift of the *supply* curve of leather. A rise in the price of the first good leads to a shift of the supply curve of the other good in joint supply. In this example, beef is the main product and leather is the by-product, though the relationship could be reversed.

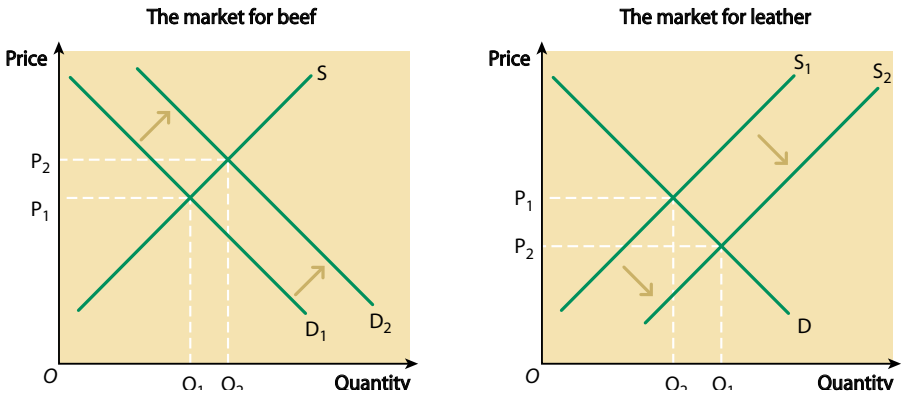


Figure 2.20 The interrelationship between two goods in joint supply

KEY TERM

competing supply when raw materials are used to produce one good they cannot be used to produce another good.

Now consider what happens if two goods are in **competing supply** rather than in joint supply. The relationship between food and biofuel provides a topical example. Increased demand for biofuels such as ethanol has diverted crop growing away from food supply to the supply of fuel for motor vehicles. Because farmers producing crops such as wheat, maize and sugar can earn a higher price by selling their produce to energy companies, the supply curve of crops for food is shifting leftward. We will leave it to you to draw appropriate diagrams to illustrate competing supply, and the four demand relationships between markets explained below.

STUDY TIP

Think how you could use a production possibility curve diagram to illustrate how competing supply involves switching productive resources between different forms of production.

CASE STUDY 2.5

Competing supply: biofuels and food

Record-breaking food prices in 2011 led experts to warn of the danger of a global food crisis. Many factors contributed to the price rise, but the growth in production of biofuels was one of the most important. About 40% of US maize production goes into biofuels. In 2011, 18% of biofuels used in the UK were made from wheat and maize that are staple foods in the developing world. Yet just a year earlier, the UK hardly used either of these for making biofuel.

Increased demand for biofuels inevitably drives food prices higher. And biofuel use is set to grow. Less food is grown as biofuel production increases.

Follow-up questions

1 Explain how diverting crop production to meet the demand for biofuel is affecting world poverty.
2 Explain two causes, other than increased biofuel production, of recent increases in food prices.

Goods in joint demand and substitute goods

KEY TERMS

complementary good a good in joint demand, or a good which is demanded at the same time as the other good.

substitute good a good in competing demand, namely a good which can be used in place of the other good.

An increase in the price of a good in joint demand (or a **complementary good**) has the opposite effect to an increase in the price of a **substitute good** (or a good in competing demand). For example, Sony games consoles and Sony games cartridges are in joint demand, but Sony and Xbox consoles are in competing demand, so are substitute goods. Following a significant rise in the price of Sony consoles, demand for them falls, which in turn reduces the demand for Sony games cartridges. The demand curve for Sony cartridges shifts leftward. But the demand curve for Xbox consoles shifts rightward, assuming that consumers consider an Xbox console to be a good substitute for a Sony console.

Composite demand and derived demand

KEY TERMS

composite demand demand for a good which has more than one use.

derived demand demand for a good which is an input into the production of another good.

Students often confuse competing demand, which occurs in the case of substitutes, with composite demand and derived demand. **Composite demand** is demand for a good which has more than one use. An increase in demand for one use of the good reduces the supply of the good for an alternative use; for example, if more wheat is used for biofuel, less is available for food, unless wheat growing increases. By contrast, **derived demand** for a good occurs when a good is necessary for the production of other goods. The demand for capital goods such as machinery and raw materials is derived from the demand for consumer goods or finished goods. If the demand for cars falls, so does the demand for engines and gear boxes.

CASE STUDY 2.6

Digital downloads replace CDs and DVDs

In 2000, when the first MP3 players were hitting the market, no-one anticipated that sales of music downloads would overtake CD and DVD sales. Even when the iTunes store opened in 2003, Apple was only vying for a small market share.

In 2012 sales of downloaded music overtook CD sales, reaching 55.9% of sales. Download sales went up 9.1% in 2012 while CD sales decreased by 10%, though music sales in general increased 3% after a decade of consistent decline.

What are we giving up by adopting the new technology? Booklets, posters and CDs we can hold in our hands, plus music quality (a CD holds far more information than an MP3 file). What are we gaining? Instant satisfaction, convenience, and mobile purchasing power. The debate is similar to that which accompanied the move from vinyl records to CDs a few decades ago.

As sales have moved online, music retail giants like HMV have closed. Now it seems that CDs could be phased out. How will our ways of consuming music evolve as time goes on?

Follow-up questions

1 Over the last 50 years, demand for recorded music has switched from vinyl records to CDs and then to downloads. Explain two reasons for these changes in demand.
2 How would you describe the demand relationship between CDs and MP3 files?

TEST YOURSELF 2.8

A farmer sells 100 sheep at a price of £20 per sheep. What is the farmer's total revenue and why is this not the same as the farmer's profit?

EXTENSION MATERIAL

Interrelated markets and cross-elasticity of demand

Complementary goods, such as computer games consoles and cartridges, have negative cross-elasticities of demand. A rise in the price of one good leads to a fall in demand for the other good.

By contrast, the cross-elasticity of demand between two goods which are substitutes for each other is positive. A rise in the price of one good causes demand to switch to the substitute good whose price has not risen. Demand for the substitute good increases.

If we select two goods at random — for example, pencils and bicycles — the cross-elasticity of demand between the two goods will be zero. When there is no discernible demand relationship between two goods, a rise in the price of one good will have no measurable effect upon the demand for the other.

2.7 Applications of demand and supply analysis to particular markets

This chapter has explained how a market for a good or service operates and how markets interrelate with each other. We now apply this analysis to a number of real world markets on how a market functions such as: agricultural markets, commodity markets for raw materials and energy, the market for second-hand cars, housing markets and markets for healthcare.

Why prices are often unstable in agricultural markets

In recent history, agricultural markets for foodstuffs and primary products such as rubber have experienced two closely related problems:

- Until recently, there was a long-run trend for agricultural prices to fall relative to those of manufactured goods.
- Prices have fluctuated considerably from year to year.

Agricultural markets are prone to disequilibrium and random shifts of the supply curve from year to year, caused by climatic factors. This leads to unacceptable fluctuations in agricultural prices that, as Chapter 5 explains, may require government intervention to stabilise the price.

The long-run fall in agricultural prices

The long-run downward trend can be explained by shifts of the demand and supply curves for agricultural products over extended periods of time. This is shown in Figure 2.21, where the equilibrium price for an agricultural product in an early historical period is P_1. Over time, both the demand and supply curves have shifted rightward. The shift in the demand curve was caused for

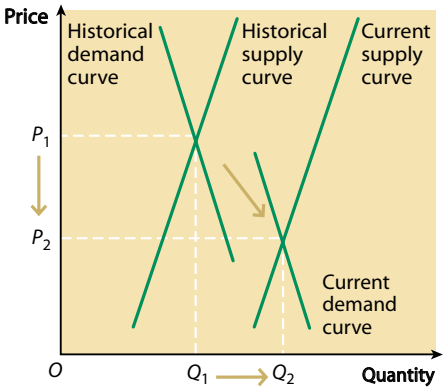


Figure 2.21 The long-run fall in the prices of agricultural products

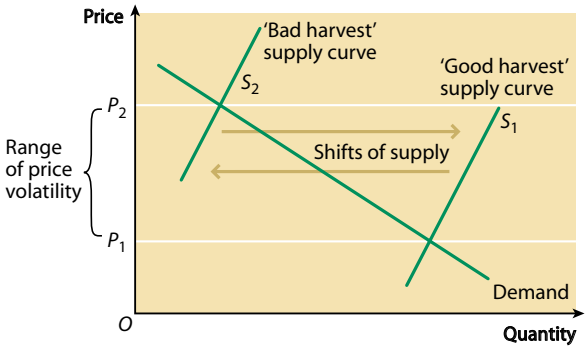


Figure 2.22 Fluctuating agricultural prices caused by shifts of supply

example by rising incomes and population growth, while improved methods of farming increased supply. But for many farm products this shift of supply has greatly exceeded the shift of demand, resulting in a fall to the lower equilibrium price P_2.

Since the global recession ended in 2009, we might be seeing the beginning of a long-run trend for food price rises. Can you think of reasons why this might be happening?

Short-run fluctuations in agricultural prices

STUDY TIP
Make sure you understand the different ways in which governments can intervene in agricultural and commodity markets to try to stabilise prices.

Figure 2.22 provides an explanation of fluctuating farm prices. In the diagram, price volatility is caused by random shifts of the short-run supply curve in response to fluctuations in the harvest. Figure 2.22 shows two short-run supply curves: a 'good harvest' supply curve, S_1, and a 'bad harvest' supply curve, S_2. Weather conditions and other factors outside farmers' control shift the position of the supply curve from year to year between the limits set by S_1 and S_2. As a result, market prices fluctuate from year to year within the range of P_1 to P_2.

Commodity markets

The importance of speculative demand

Farm products are not the only goods whose prices fluctuate from year to year. The same is true for many primary products, especially metals such as copper and nickel. Part of the reason for this stems from the fact that it takes years to open new mines, with the result that sudden increases in demand cannot easily be met from supply.

Another reason is speculation. Many of the organisations that buy and sell commodities such as copper never intend to use the metal, or indeed to take delivery of the product. When speculators think the price of copper is going to rise, probably in conditions of increasing global demand and limited supply, they step into the market and buy copper. If speculative demand is large enough, the speculators themselves force the price up. In these circumstances, higher future prices become self-fulfilling. In a similar way, when speculators start to sell in the belief that copper prices are going to fall, the act of speculative selling forces down the price of copper.

CASE STUDY 2.7

Speculative demand and metal prices

Speculative demand has become increasingly important in driving up or down the prices of commodities such as copper and nickel. Mass buying or selling by international speculators is one of the factors causing commodity prices to be extremely volatile.

In 2011, the House of Commons Select Committee on Science and Technology became concerned by reports of financial institutions entering commodity markets and buying up significant quantities of strategic metals. The committee recommended that the UK government investigate

- whether there are increasing levels of speculation in the metals markets
- the contribution of these to price volatility
- whether markets that allow high levels of speculation, with associated price volatility, are an acceptable way to deliver strategic commodities to end users

Follow up questions

1 What is meant by speculation?
2 Draw a supply and demand diagram to illustrate the effect of speculative demand on the price of a commodity such as copper.

The commodity price cycle

Global commodity prices move in long cycles or super cycles that last typically for 20–30 years. Between 1980 and 2000, there was a declining price trend, which reversed at the turn of the millennium (Figure 2.23). After 2008, there was a significant fall in commodity prices, which all but destroyed the earlier price increases.

The boom in commodity prices between 2004 and 2008 was caused by two factors: declining supply and increasing demand. The declining supply was caused by the earlier fall in commodity prices. Mining companies stopped investing on a large scale, and this put production under heavy pressure. The supply decline became evident when demand for commodities started picking up after 2000, with a huge spike in demand from emerging markets, especially China. At the time, China's economy was growing by more than 12% annually, much faster than the developed world.

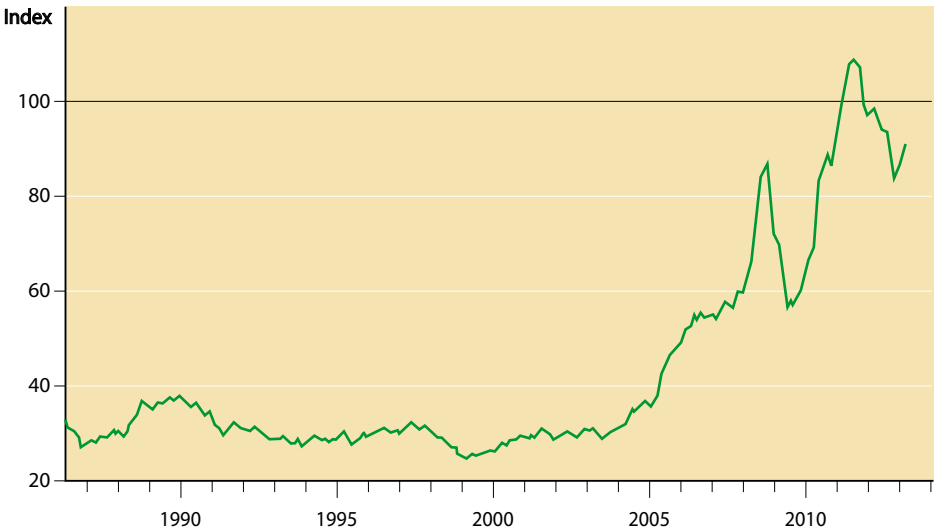


Figure 2.23 The index of world commodity prices, 1985-2013

Although China's growth slowed down immediately after the 2008 global financial crisis, the growth rate remained above 7% at all times – still a

multiple of European and North American growth rates. Commodity prices fell in the aftermath of global recession, but, even at their lowest, prices were still far above the levels recorded at the turn of the century. In 2013 and 2014, with commodity prices once again growing, market analysts were optimistic that a new multi-year price rally had begun. If so, China has once again triggered the rise.

In the boom years of the early 2000s, China's investment in building infrastructure increased the demand for raw materials and energy, and hence their prices. If a second commodity price boom has now begun, the Chinese consumer will be a main contributor. In 2013, a Chinese employee earned close to 25,000 Yuan per year, or about US$ 4,200, compared to 8,500 Yuan per year, or about US$1,400, in 2004. This is still negligible compared to Western wages, but is a fourfold increase of disposable income in less than 10 years. It translates directly into Chinese consumer behaviour. The Chinese are spending like never before on goods which have to be produced using scarce commodities.

CASE STUDY 2.8

OPEC and the price of crude oil

The world price of crude oil has risen rapidly in recent years, though in real terms it is not as high as it was around 1980. Part of the reason for high oil prices lies in the activities of OPEC, the Organization of Petroleum Exporting Countries.

OPEC was created in 1960 to protect the interests of oil-producing countries, in response to the efforts of Western oil companies to drive oil prices down. It allows oil-producing countries to guarantee their income by coordinating policies and prices.

Before recent discoveries of new oil resources, two-thirds of world oil reserves were believed to be located in OPEC countries and OPEC members were responsible for half of the world's oil exports.

OPEC's aim has been to keep crude oil prices within a particular range. OPEC countries attempt to control the amount of crude oil they export and avoid flooding or squeezing the international marketplace. But the oil market is notoriously difficult to balance, as demonstrated by sharp price swings in the years since OPEC was set up. OPEC members do not necessarily have identical interests, and often find it difficult to agree on their price and output strategies:

- Countries such as Saudi Arabia are completely reliant on income from oil. Their long-term interest is to prevent oil prices rising too high, as this would speed up research in industrialised countries for alternative fuels.
- Other producers such as Dubai realise that they must diversify their economies before oil runs out. They are using oil revenues to finance the growth of other industries, particularly financial services and tourism.
- Other OPEC members, such as Nigeria, have a short-term interest in keeping oil prices as high as possible to finance the lifestyle of ruling elites.

In the early 2000s, the price range of crude oil was between about $25 and $30 a barrel, rising to between about $55 and $65 a barrel. The fact that by late 2007, crude oil's price had risen to over $90 a barrel, with occasional spikes to over $100, shows that OPEC has not been completely successful in controlling it.

OPEC's method of controlling the price of crude oil by altering the rate at which its members release or supply oil on to the market is an example of a retention scheme. It operates through shifting the supply curve of a product rather than through purchasing a stockpile of the good.

Follow up questions

1 With the help of a supply and demand diagram, explain why in a free market the price of oil might be highly volatile.
2 Why can't OPEC completely control the world price of oil?

Markets for second-hand cars

A car is a consumer-durable good, delivering a constant stream of consumer services throughout its life. Provided it is properly looked after and escapes a serious crash, a new car typically lasts about 15 years. However, unlike a house, which is the ultimate consumer durable good (with a much longer life than that of a person living in it), almost all new cars lose value or depreciate as soon as they have been driven off the showroom forecourt. This means that the prices of most second-hand cars fall throughout their lives.

At any time, the prices of second-hand cars depend on whether there has been excess supply or excess demand in the market for used cars. When the economy booms, demand for new cars is high, and a constant supply of second-hand cars is released onto the market as new-car owners replace their cars. In these conditions, excess supply may mean that second-hand car prices fall, relative to the prices of new cars. However, this is not inevitable, as a strong economy may also boost the demand for second-hand cars.

Likewise, in a recessionary period, new-car owners may hang on to their cars for longer before they sell them – which decreases the supply of second-hand cars – and/or the demand for second-hand cars may fall because people cannot afford them. There are all sorts of possibilities. Other factors to consider are: is a new car a 'superior good' and a second-hand car an 'inferior good'?; and are some second-hand cars 'superior goods' whereas others are 'inferior goods'?

Akerlof's 'lemons'

Another factor affecting the price of second-hand cars was first identified by George Akerlof, who was awarded the Nobel prize in economics for his research. Akerlof assumed that some second-hand cars have significant defects (he called these cars 'lemons'), whereas others are of high quality. If buyers could tell which cars are lemons and which are not, there would be two separate markets: a market for lemons and a market for high-quality cars. But there is often asymmetric information: buyers cannot tell which cars are lemons, but, of course, sellers know.

Fearing they will be buying lemons, car buyers in general offer lower prices than they would if they were certain they were buying high-quality cars. This lower price for all used cars discourages sellers of high-quality cars. Although some would be willing to sell their cars at the price that buyers of high-quality used cars would be willing to pay, they are not willing to sell at the lower price that reflects the risk that the buyer may end up with a lemon. Thus, exchanges that could benefit both buyer and seller fail to take place and market failure results. (See Chapter 5.)

CASE STUDY 2.9

Second-hand car prices in the recession

In 2009, in the middle of the recession which hit the UK economy, a Rolls-Royce limousine was auctioned in London. The car was only 2 years old, but it looked as good as a new model costing £270,000. Within a minute, it was sold for £140,000. All the cars that followed, including Mercedes and BMWs, also suffered the indignity of a collapse in used-car prices.

In 2009, sales of new luxury cars were significantly lower than in the boom years before the recession. Car manufacturers responded by closing factories, at least for short periods. The lack of readily available finance reduced the demand for luxury cars. Many car buyers traded down to purchase less expensive cars, or kept the cars they already owned. Some manufacturers offered discounts and incentives averaging more than £15,000 a car to attract buyers. With such big discounts available on new models, people expect to pay even less for second-hand ones. Second-hand prices did not improve until the surplus of new and used cars had been eliminated.

Follow up questions

1 How might recovery from recession affect new car prices?
2 'A new Rolls Royce car is a superior good, but a 15-year-old Ford car is an inferior good.' Explain this statement.

The housing market

The long-run rise in prices

There has been a long-run trend for house prices to rise in the UK, ignoring short-run booms and busts. Both the demand for and the supply of housing have increased (or shifted rightward), but unlike the case of agricultural goods described earlier, demand has increased faster.

There has been a long-run trend for house prices to rise in the UK

Supply has increased because the quantity of new houses added to the housing stock each year exceeds the number demolished or converted to other uses. The supply of housing for owner-occupancy increases fastest when landlords withdraw from the rental market and sell their properties. If, as in recent years, housing-market conditions are more favourable for private letting, the reverse happens. The main causes of the long-run rightward shift of demand have been: population growth, growth in the number of households, and real income growth. Also, until quite recently, people were switching to owner-occupancy, which they treat as a superior good (income elasticity of demand > +1) and away from the perceived inferior substitute, rented accommodation. This has now reversed and, as Figure 2.24 shows, rented accommodation has grown and owner-occupancy has fallen.

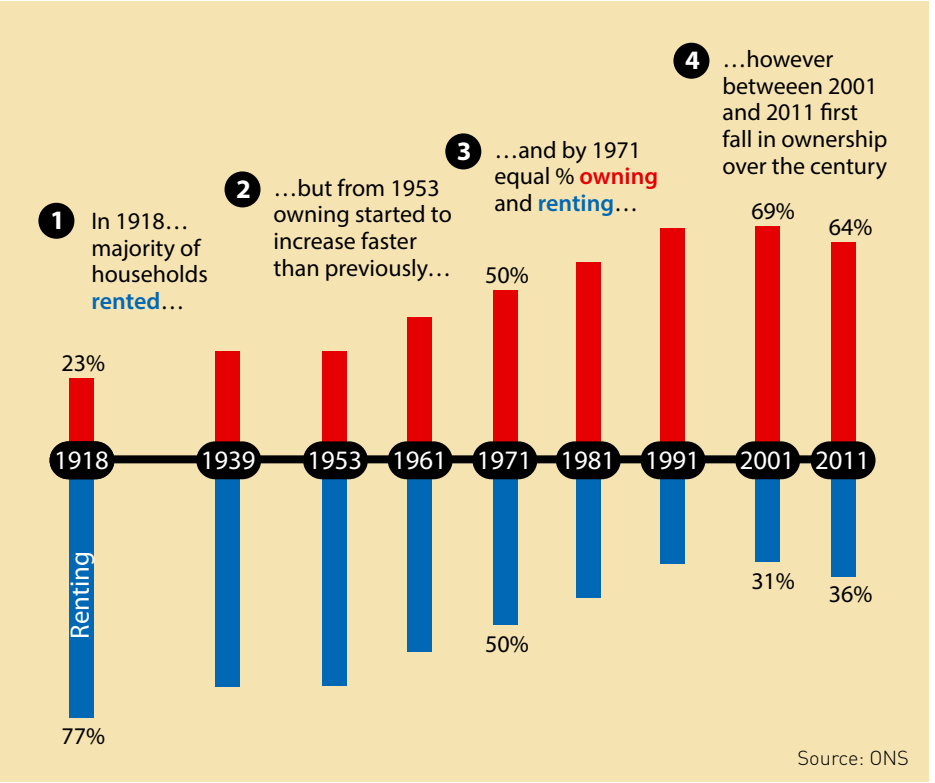


Figure 2.24 Changes in the proportion of UK homes owned or rented by their occupiers, 1918–2011

The level of activity in the national economy also affects the construction industry. Since the 1970s, the house-building industry has become dominated by a small number of 'volume' builders. They buy land and hold it in a 'land bank'. Houses are only built when the company expects to sell them during or shortly after construction. The process tends to be speculative — very few houses are built to meet customers' specific requirements. The construction process itself is sometimes contracted out to smaller builders, who depend on hired equipment and employ casual labour. In recessions or economic slow-downs, there is often a high level of bankruptcy among smaller subcontractors, and many building workers become unemployed.

Short-run fluctuations in house prices

Short-run price fluctuations are explained primarily by the short-run demand curve shifting rightwards or leftwards along the near-vertical short-run supply curve. Figure 2.25 shows the demand curve increasing, shifting rightwards from D_1 to D_2, causing house prices to rise from P_1 to P_2, with a smaller resulting expansion of supply.

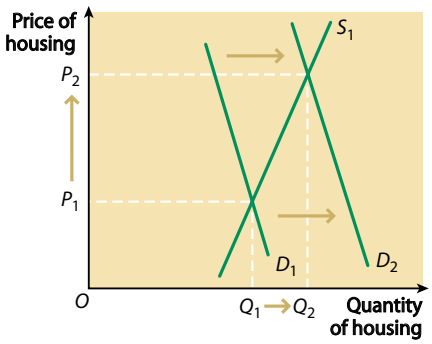


Figure 2.25 Short-run changes in the demand for housing

In the short run, as Figure 2.25 shows, the supply of housing is price inelastic or unresponsive to price changes. The factors that explain this include: the general shortage of land, the effect of planning controls that make it difficult to convert land from other uses, and the length of time taken to build a new house.

The demand for housing

As with all consumer goods, people demand housing for the utility or welfare derived from the consumer services that it provides. All houses provide basic shelter, but they each have a particular combination of other consumer attributes, such as location, view, garden, car parking and rooms suitable for work, leisure and hospitality.

The demand for housing is also affected by a number of special factors. Housing is a consumer durable good, delivering a stream of consumer services over a long period, often a century or more. Unlike most durable goods, such as cars and television sets, which lose value during their lives, most houses — or certainly the land on which they are built —gain value. This means that the demand for housing is determined not only by people's need for shelter, but by the fact it is a form of investment. Housing is an attractive wealth asset — indeed, the main wealth asset owned by many UK residents.

As a result, far from reducing demand, a rise in house prices can trigger a speculative bubble in the housing market. Rising prices drive up demand, causing a further rise in prices, with the process continuing until the bubble bursts. Owner-occupiers already on the 'housing ladder' have a vested interest in further price rises. They become wealthier because the value of their property rises but the value of their mortgages stays the same. They benefit from capital gains — the difference between the price paid for the house and its current higher market value.

In this situation, there is an increase in the number of first-time buyers, as young people, desperate to get on the housing ladder, try to buy houses before they become unaffordable. Existing owner-occupiers put their houses on the market and 'trade up' to buy larger properties or houses in more desirable locations. Both these events shift the demand curve for housing rightwards and fuel a further rise in house prices. During housing-market booms activity soars, with increases in both the number of people trying to sell and the number trying to buy property. However, demand rises faster than supply.

CASE STUDY 2.10

Britain's housing crisis

According to the housing pressure-group Shelter, Britain has been suffering a massive housing crisis. There haven't been enough decent, affordable homes. More than 2 million people have found their rent or mortgage a constant struggle, sometimes falling behind with payments.

Against a background of mounting debt across the country, some people have had their homes repossessed because they couldn't keep up with their mortgage repayments. Second-home ownership has been pricing local people out of rural areas. Over 1.7 million households have been waiting for social housing.

Some homeless households — many with dependent children — have waited for years in temporary accommodation. Families renting privately on low incomes have to put up with poor living conditions and little security.

The number of new households is increasing faster than the number of house builds. And at the sharpest end, many hundreds of people sleep rough on the streets every night. Shelter believes this situation is unacceptable.

According to shelter, around 7.4 million homes in England fail to meet the government's Decent Homes Standard. Bad housing is closely linked to many wider social problems, such as crime and antisocial behaviour.

Shelter believes that the only solution to the current housing crisis is to build more homes. It claims that the government's proposal to build 150,000 affordable homes over 4 years is less than a third of what is needed.

Follow up questions

1 Describe **three** causes of homelessness in the UK.
2 Evaluate **three** policies the government could use to reduce or eliminate the problem of homelessness in the UK.

Healthcare markets

Civitas, which is a pro-free market 'think-tank' with an interest in how healthcare should be provided, has looked at the advantages and disadvantages of markets for delivering healthcare services. Civitas's arguments start from the proposition that healthcare, due to its 'high upfront costs and centrality to humankind', is 'different' from most goods and services provided by markets. As a result, a popular view, particularly in the UK, is that healthcare is best provided outside the market.

Two arguments for providing healthcare through the market

In a market environment people can demonstrate their preferences for different goods and services by exercising choice. This generates precise information about their preferences, so providers are motivated to supply the services people want, improving **allocative efficiency**. Markets also create the incentive for providers to be as efficient as possible in order to undercut competitors. This improves **productive efficiency**.

In markets there is always the opportunity for people to come forward with new ideas to meet a need: a powerful incentive to experiment, innovate and focus squarely on service users.

Two arguments against providing healthcare through the market

Many economists argue that healthcare is a **merit good**, though as Chapter 5 explains, not all economists agree. Assuming healthcare is a merit good, one person's 'consumption' of healthcare may well have beneficial effects for others — particularly where infectious diseases are concerned. Yet if, as markets typically assume, individuals and providers only have regard for themselves, there is likely to be both under-consumption and under-provision of services such as vaccinations.

Because healthcare costs are often high, most choose not to pay, or cannot afford to pay, for expensive services such as operations. Instead, they rely on third-party insurers to pay for operations. If people know more about their need for expensive healthcare services than insurers, insurers will want to raise premiums to all in order to guard against the costs of having unhealthy people on their books. High premiums mean that healthy people may choose not to buy insurance. And if people do choose to buy health insurance, they may choose to live less-healthy lifestyles because they no longer bear the full consequences of their decisions.

KEY TERMS

allocative efficiency occurs when the available economic resources are used to produce the combination of goods and services that best match people's tastes and preferences

productive efficiency occurs when a firm minimises its average cost of producing a good or if, for the economy as a whole, it is not possible to produce more of one good without producing less of another.

merit good a good which when consumed leads to benefits which other people enjoy, or a good for which the long-term benefit of consumption exceeds the short-term benefit enjoyed by the person consuming the merit good.

TEST YOURSELF 2.9

Suppose that vaccination against measles is only available at a market price of £50. Why may this lead to an undesirable economic outcome?

STUDY TIP

Make sure you understand fully the meaning of a merit good and are aware of examples of products that are generally agreed to be merit goods, e.g. healthcare and education.

SUMMARY

- Demand means effective demand, based on ability as well as willingness to pay.
- For most goods, demand curves slope downward.
- A market supply curve shows how much of a good all the firms in the market intend to supply at different prices.
- Supply curves usually slope upwards because higher prices lead to higher profits, encouraging existing firms to produce more and to encourage new firms into the market.
- The conditions of demand fix the position of the demand curve and the conditions of supply fix the position of the supply curve.
- If any of the conditions of demand (or supply) change, the demand curve (or the supply curve) shifts to a new position.
- Movements along a demand curve or a supply curve must not be confused with a shift in the position of the curve.
- There are four important elasticities: price, income and cross elasticity of demand, and also price elasticity of supply.
- The slope of a demand or a supply curve is not the same as price elasticity of demand or supply.
- It is important to understand the determinants of all the elasticities you need to know.
- Market equilibrium occurs at the price at which the demand curve crosses the supply curve, i.e. where demand equals supply.
- Disequilibrium occurs when there is either excess demand or excess supply in the market.
- In a competitive market, changes in the market price eliminate excess demand or excess supply; this is how the price mechanism helps to allocate scarce resources.
- You must practise applying market theory to different real-world markets.

Questions

1 Explain the significance of the ceteris paribus assumption in microeconomic theory.

2 Evaluate the view that a fall in a good's price will inevitably lead to more demand for the good.

3 Explain how price elasticity of demand affects total consumer spending when a good's price changes.

4 Explain three reasons why a supply curve may shift rightward or downward.

5 Explain how the price elasticity of supply of new housing has affected UK house prices in recent decades.

6 With the help of an appropriate diagram, explain the effect of a government subsidy granted to producers of the good on the good's price.

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