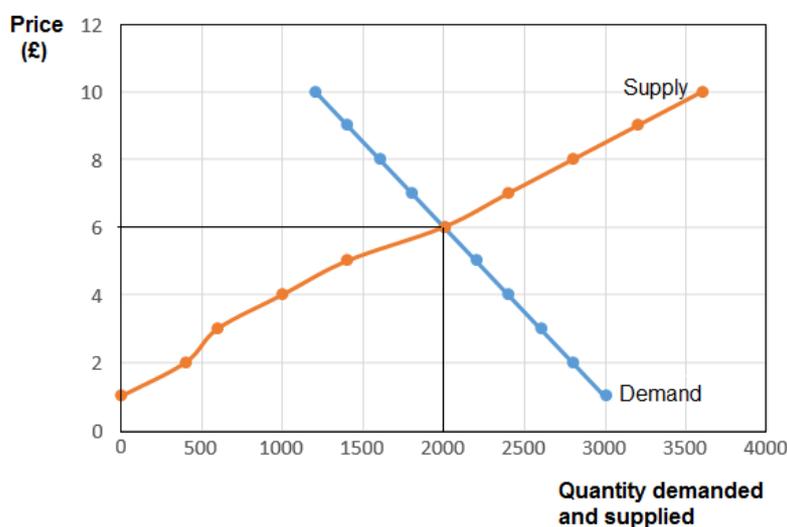


4 Competitive and concentrated markets — answers

Test yourself

Test yourself 4.1

In the diagram below we have plotted from the given data the market demand and supply curves in the highly competitive market. The graph shows that the equilibrium price, determined where the demand and supply curves intersect, is £6. (You could have read this from the data without the need to plot the data on a graph.) Because the market is highly competitive, each of the many firms within the market passively accepts the ruling market price (equilibrium price) determined in the market as a whole. The ruling market price (£6) is the average revenue earned by each of the firms, however much each firm produces.



Test yourself 4.2

To make the calculation, we use the formula:

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

To calculate the price elasticity of demand over a range of the demand curve (this is known as ‘arc’ elasticity of demand), we must measure the elasticity with respect to a price fall over the range, followed by a price increase over the range, then add up the resulting two statistics, before dividing by two. The resulting elasticity statistic is the ‘arc’ elasticity of demand over the range between the two prices.

- (a) When the good’s price falls from £3.20 to £3.00, the proportionate change in price is 6.25%. Quantity demanded increases in response to the price fall from 100 to 200 units, which is a 100% increase in demand. The price elasticity of demand with respect to the price *fall* is +100% divided by –6.25%, which is –16.00.

By contrast, when the good’s price rises from £3.00 to £3.20, the proportionate change in price is 6.67%. The proportionate fall in demand is now 50%. The price elasticity of demand with respect to a price *increase* is –50% divided by +6.67%, which is –7.5. Ignoring the minus sign, and adding 15.99 to 7.5 and then dividing by 2, the ‘arc’ price

elasticity of demand over the range covered by the two prices is approximately 11.75. Again, by ignoring the minus sign, which results from the fact that there is a negative or inverse relationship between price and quantity demanded (depicted by a downward-sloping demand curve), the demand for the good is highly price elastic on this part of the demand curve.

- (b) When the good's price falls from £1.20 to £1.00, the proportionate change in price is -16.67% . Demand increases in response to the price fall from 600 to 700 units, which is a 16.67% increase in demand. The price elasticity of demand with respect to the price *fall* is $+16.67\%$ divided by -16.67% , which is -1 . By contrast, when the good's price rises from £1.00 to £1.20, the proportionate change in price is 20% . The proportionate fall in demand is now $\approx -14.29\%$. The price elasticity of demand with respect to a price *increase* is $\approx -14.29\%$ divided by $+20\%$, which is ≈ -0.71 . Ignoring the minus sign, and adding 1 to ≈ 0.71 and then dividing by 2, the 'arc' price elasticity of demand over the range covered by the two prices is approximately 0.86. The demand for the good is price inelastic on this part of the demand curve.

The answers to the two questions show that moving down a downward-sloping linear (straight-line) demand curve, price elasticity of demand falls, moving from point to point along the curve. Demand is elastic in the 'top half' of the curve, and inelastic in the 'bottom half' of the curve.

Case studies

Case study 4.1

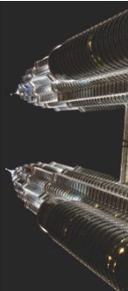
- 1 Lack of competition in a market enables incumbent firms to make significant profits. They may use part or all of these profits to finance research and development (R&D) and to invest in new capital goods. These in turn may facilitate the introduction of new products and the attainment of economies of scale, which lower average costs of production. Both of these may benefit consumers.
- 2 The pursuit of self-interest may lead to firms and individuals producing undesirable goods (which as Chapter 5 explains are called demerit goods) which, in the case of narcotic drugs, harm the people who consume them and/or, via negative externalities being emitted in the course of consumption, harm other people.

Case study 4.2

- 1 For a market to function well, both buyers and sellers must possess accurate information about what is happening in the market. As the case study explains, lack of accurate information can lead to small, separate markets emerging in a fishing region, which causes oversupply and low prices in fishing villages where good catches have been made, but scarcity and high prices in villages where fishermen have not enjoyed good catches. Economic waste occurs when perfectly good, but dead, fish are thrown back into the sea in the villages where the oversupply has occurred.
- 2 The UK betting market has become more competitive because the use of mobile phones enables gamblers to find out quickly about the best odds on a horse or a football match. Likewise, by using mobile phones and/or the internet, holiday makers can quickly find out the best prices for flights and for car hire when abroad.

Case study 4.3

- 1 Kodak's traditional businesses were the manufacture of film-using cameras and of film and photographic paper, which are in joint demand (a complementary good demand relationship) with film-using cameras. Protected by barriers to entry, Kodak did not feel the need, until it was too late, to invest in the alternative technology of digital cameras. Kodak was bypassed



by changing technology. While the sale of digital cameras soared, the demand for film-using cameras and the associated complementary goods went into rapid decline.

2 Other previously dominant firms include:

- *International Business Machines (IBM)*, whose main business used to be the manufacture of mainframe computers. These went into decline when they were replaced by personal computers (PCs) — even though IBM had been one of the first manufacturers of PCs. The company treated PCs as a ‘toy’ rather than as a product with a major future ahead of it. Eventually IBM sold its not very successful PC manufacturing division to the Chinese company Lenovo.
- *Sega games consoles*. In the 1990s, Sega shared the games console market on almost equal terms with Nintendo. However, for games consoles to be attractive to consumers, their manufacturers must make sure a large number of state-of-the-art computer games are also available, manufactured either by themselves or by separate games developing companies. Sega failed to do this, and eventually ceased manufacturing games consoles because consumers would not buy them.
- *Brother*. Sales of traditional typewriters manufactured by Brother went into steep decline when people started using PCs together with word processor applications such as Microsoft Word. Some typewriter manufacturers diversified into PC production, but Brother failed to do this. Brother still exists as a computer peripheral manufacturer, but it is no longer a major player in the electronic goods market.

Case study 4.4

- 1** The passage indicates that the computer software company built up a considerable degree of monopoly power in the manufacture and sale of word processor and spreadsheet applications (Word and Excel). These were bought by PC and Apple users, who downloaded them on to the hard disks of their computers. But technology has moved on. Instead of accessing applications stored in hard drives, which use up a large amount of disk space, more and more people now buy lightweight computers and tablets which bypass the use of applications stored in their computers, by using cloud technology to temporarily download the application the computer owner wishes to use at that point of time. Sales of applications such as Word have fallen as a result.
- 2** Microsoft is arguably an ‘ailing giant’ because sales of its traditional products have fallen and the company has not been very successful in developing and marketing new products and replacement products. A good example is Windows 8, the operating system Microsoft developed to replace Windows 7. Because of various difficulties in using Windows 8, many PC users reverted to Windows 7, with some even abandoning PCs by replacing their machines with Macs. Nevertheless, Microsoft is still highly profitable and the company is trying to learn from its mistakes and to improve its innovative record. This means it may not be an ‘ailing giant’. Apple, by contrast, is certainly not at this point of time an ‘ailing giant’. In terms of its market value, Apple is currently the world’s most successful company. Nevertheless, Apple could go into relative decline if it fails to develop completely new ‘must-have’ products that consumers want. And there is always the possibility that a new ‘sunrise’ company that no one has yet heard of will grow to take Apple’s place in high-tech markets.

Case study 4.5

- 1** In so far as drug companies such as GlaxoSmithKline and Pfizer exploit consumers by using their monopoly power to charge high prices and make very high profits, pharmaceutical drug prices should be lower in rich countries as well as in poor countries. However, the drug companies argue that high prices are needed to finance the research into developing new drugs. This research would not be possible if drug prices were lower. High prices can be

charged because the drug companies enjoy patent law protection. By acting as an artificial barrier to market entry, patents add to the monopoly power possessed by the drug companies.

Nevertheless, for ethical and redistributive reasons, there is a case for only allowing high prices to be charged in rich developed countries. Profits made from sales in rich countries could cross-subsidise low prices in poor countries. Arguably the high R&D costs have already been paid for by the prices charged in rich countries, meaning that it is much cheaper to supply the drugs to poorer people in the developing world. However, there could then be the unintended consequence of racketeers buying the drugs in, say, Mozambique and then selling them back on the black market to people living in countries such as the UK and USA, while still undercutting the prices charged in these countries by manufacturers such as GlaxoSmithKline and Pfizer.

- 2 For several decades, the main way in which people listened to recorded music was by buying vinyl disks, tapes and more recently CDs in music shops at prices largely set by the record companies. The music publishers were largely successful in protecting their intellectual property rights by threatening to sue anybody they suspected of illegally copying music. Nevertheless, the amount of illegal copying grew, particularly after the introduction of CDs, which were very easy to copy.

With the development of the internet this has changed. More and more people, particularly the young, have ceased to purchase CDs or DVDs, moving instead to digitally download music from the internet. To a significant extent this is perfectly legal and the music publishers and recording artists are fairly paid for their music, via internet-based sites such as iTunes. Music bought on iTunes is cheaper than music bought on a CD. However, this largely reflects the fact that the customer is not paying for the manufacture of disks, for their distribution, or for their sale by record shops. The music publishers and the musicians still get paid a fair price for the service they are providing.

Initially, peer to peer (P2P) file-sharing internet services were party to considerable illegal pirating of music, provided encoded in MP3 format. Pirated music completely breached the publishers' and the musicians' intellectual property rights. Peer to peer illegal pirating still exists, but it lacks the convenience of commercial sites such as iTunes. In summary, the growth of downloaded music, whether legal or pirated, has led to the decline of CDs and record shops, and the recording industry has suffered continually sinking profits, which they see as primarily derived from increasing incidents of piracy. Copyright infringement has therefore caused damage to the music industry.

Case study 4.6

- 1 Competition in the book market, especially the competition provided by Amazon, has driven down the prices that consumers have to pay for the books they buy. A disadvantage for book readers could be fewer specialist books being commissioned by publishers who might restrict their commissioning to what they think are going to be mass-selling 'blockbusters'.
- 2 According to the 'This is money' website:

Online bookseller Amazon has been accused of shooting first and asking questions later in a spiralling row with publishers over how to share the takings from the fast-growing ebook market.

The bitter row with French publisher Hachette has drawn in Harry Potter's creator J.K. Rowling and Ian Rankin, author of the popular Inspector Rebus titles, with Amazon stopping customers reserving copies ahead of publication and not offering the usual discounts. In a hard-nosed statement Amazon said it was 'not optimistic that this will be resolved soon'.

The publishing and book-selling trade has reacted with alarm. James Daunt, chief executive of Waterstones, said the US internet retail giant was using its dominance of the market to play hardball. He said: 'I am surprised it hasn't been more subtle about it. You have a retailer flexing

monopolistic power in a very overt way. From the outside it looks like Amazon is saying “let’s hit them hard on the nose then we can start really negotiating”.

And literary agents and publishers are already voicing fears that Amazon’s power means it will eventually win the battle. The Amazon group, already notorious for its aggressive tax-avoidance plans, has stopped customers reserving copies of Rowling’s latest novel, *The Silkworm*, published by Hachette under her pseudonym of Robert Galbraith.

Amazon, which controls more than half the US market and three-quarters of the UK market, has also withdrawn discounts from a host of Hachette publications, including Rankin’s Rebus novels. Given Amazon’s dominance, such actions are likely to scupper any book’s chance of reaching best-seller status.

www.thisismoney.co.uk

Case study 4.7

- 1 *Predatory pricing* focuses on getting rid of existing competitors. The predator firm lowers its prices below its average costs in order to drive out the firms it is trying to get rid of. Once the ‘prey’ firm has left the market, the predator firm can raise its prices back to or higher than where they were before the predatory pricing was put in place.

Firms with monopoly power use *limit pricing* to deter entry into the market by new firms. The incumbent firm sets a price that is below the monopoly level. By doing this, the potential profits in the market are limited. The incumbent firm may also increase production to the point that a new entrant will not be able to make any profits. If there are any costs associated with entry, even slight costs, the entrant will choose not to enter since there will be no profits.

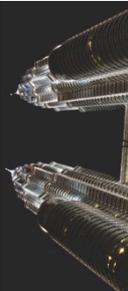
- 2 If Rupert Murdoch was indulging in predatory pricing, his price cuts were anti-competitive and against the public interest or common good. Readers of *The Times* and the *Sun* certainly benefited from lower prices, as did the readers of other newspapers such as the *Daily Telegraph* which responded to Murdoch’s strategy by also cutting prices. None of Murdoch’s competitors went out of business, so on balance the price cuts may have been in the public interest.

Questions

- 1 In the UK alone there are a very large number of tomato growers and also a very large number of shops, including big supermarket store groups that buy tomatoes from the growers. Domestic supply is also supplemented by overseas growers, located in the Netherlands and in Mediterranean countries, selling their tomatoes in the UK. Barriers to market entry and exit are also very low, and most of the participants in the market possess good information about what is happening in the market.

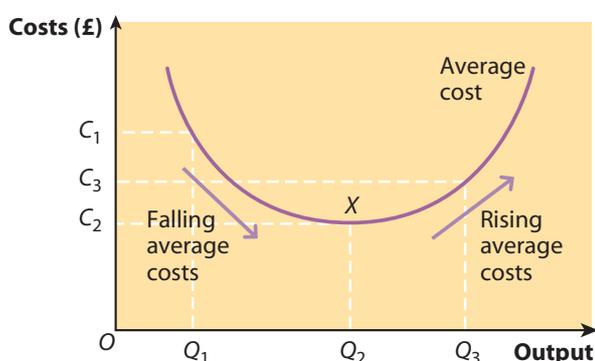
In contrast to the tomato market, tap water is provided by utility companies which are natural monopolies. There is usually room in a particular part of the country for only one water supplier benefiting to the full from economies of scale. A natural monopoly occurs when there are very high fixed costs of distribution and when large-scale infrastructure is required to ensure supply.

- 2 Mixed economies can be defined in two ways: first, as economies containing both large public sectors and large private sectors; and second, as economies containing both large market sectors and large non-market sectors. The price mechanism allocates scarce resources between competing uses in the market sector, whereas in the non-market sector government agencies provide services such as national defence and state education ‘free’ at the point of use to consumers, financing the provision out of tax revenues. Since about 1979, through a process known as marketisation or commercialisation, the market sector of the UK mixed economy has grown at the expense of the non-market sector. Even when goods and services are provided by the state, prices are now charged to many people — as in the case of eye



tests and medical prescriptions. The marketisation of goods and services has occurred partly because of the ideological pro-free market views of successive governments, and partly because of the growing burden on taxpayers of continuing to provide services free at the point of use.

- 3 Monopoly may occur when:
 - a natural resource in the earth's crust occurs only in one place on the planet
 - very high barriers to entry can be erected, such as those provided by patent legislation
 - governments promote monopoly by making it illegal for other firms to compete
 - economies of scale mean that there is room in the market for only one productively efficient firm
- 4 Productive efficiency means producing the level of output at which average costs of production are at their lowest. In the diagram below a monopoly is productively efficient if it produces output Q_2 located below point X , at which average costs are C_2 . However, if the monopoly produces output Q_1 or output Q_3 , at which average costs are respectively C_1 and C_3 , it is productively inefficient.



- 5 *Price competition* is the form of competition we usually refer to when discussing how markets and firms are competitive. Price competition usually involves firms cutting their selling prices in order to gain customers and to increase their market share. Two other forms of competition are *quality competition* and *after-sales service competition*, both of which are forms of non-price competition. As the name implies, quality competition means attracting customers because of the good quality, good design and reliability of the goods being sold. Likewise, after-sales service competition, which can be thought of as a form of quality competition, involves such factors as the provision of long guarantees which are always honoured by the firm selling the good, a returns policy through which the firms always refund the price of the good, and, in the case of cars, a free breakdown service.
- 6 Perfect competition, although it does not actually exist in real-world markets, provides a yardstick or benchmark against which the properties of imperfectly competitive real-world markets can be judged. If perfect competition did exist, perfectly competitive markets would be productively and allocatively efficient, and on the welfare front, consumer surplus would be maximised. Real-world imperfectly competitive markets can be judged by the extent to which they are *relatively* productively and allocatively efficient, and by the extent to which consumer surplus is maximised.

Detractors of perfect competition argue that these judgements largely side-step the fact that when real-world considerations of economies of scale and the achievement of dynamic efficiency through investing monopoly profits are taken into account, the benefits of perfect competition may not be realised. In their view, the word 'perfect' in the label 'perfect competition' implies that perfect competition cannot be bettered, and likewise that 'imperfect' competition is somehow second rate, inferior or shoddy. Economists should focus on the world as it actually is, rather than on a make-believe utopian world.