SECTION 5.6 SUMMARY

- Monopolistic competition is 'imperfect competition among the many'.
- Monopolistic competition resembles perfect competition in that abnormal profits can be made in the short run but not in the long run.
- In the long run, the entry of new firms competes away abnormal profits.
- Monopolistic competition resembles monopoly in that each firm faces a downward-sloping demand curve (and *AR* curve).
- In the long run, firms in monopolistic competition are allocatively efficient, but not productively efficient.
- However, consumers benefit from the choice offered by a large number of firms selling slightly differentiated products.

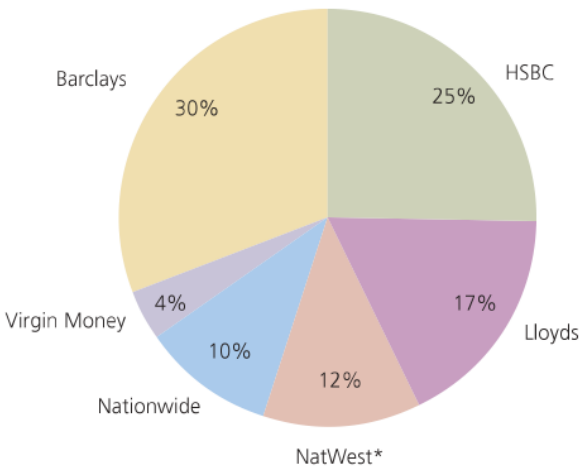
5.7 Oligopoly

The meaning of oligopoly

The prefix 'oligo-' attached to a word is taken from the Greek word *oligos*, meaning few. In a literal sense, therefore, an oligopoly is a market or industry containing a few firms. This is the way oligopoly is defined as a form of market structure. However, there is a problem with this method of definition. How many or how few firms should there be for oligopoly to exist? Do 10 firms make up an oligopoly but 11 firms do not? And what about a market in which there are, say, seven very large firms, but also scores or even hundreds of small firms?

Market structure and concentration ratios

As we have just noted, oligopoly can be defined in terms of market structure and a limited number of firms in a market. We will look at how concentration ratios are used to identify oligopoly in highly concentrated market structures.



*NatWest is a subsidiary of the Royal Bank of Scotland Group.

Note: figures do not total 100% because of rounding.

Source: Statista.com

Figure 5.14 Market shares in the UK banking industry, 2021 (% of total bank assets)

A **concentration ratio** can provide a good indicator of an oligopolistic market structure. For example, a five-firm concentration ratio shows the percentage or share of output in an industry produced by the five largest firms in the industry. Figure 5.14 enables us to calculate the five-firm concentration ratio among the six largest banks in the UK banking industry reported in 2021. The five-firm concentration ratio was 94%, though we should note that many other smaller UK banks such as Metro Bank and the Co-operative Bank are not included in the data.

KEY TERM

concentration ratio measures the market share (percentage of the total market) of the biggest firms in the market. For example, a five-firm concentration ratio measures the aggregate market share of the largest five firms.

APPLICATION OF ECONOMICS IN THE REAL WORLD 5.5

Competition in the UK supermarket industry

Writing in an October 2014 edition of *Management Today*, Alastair Dryburgh explained why, in his view, Tesco cannot compete with Aldi and Lidl. The management expert argued that if Tesco wanted to return to health, it had to give up the idea that it could win by being the cheapest. Tesco was losing out to 'hard discounter' retailers like Aldi and Lidl.

Some commentators were arguing that Tesco should cut prices by more than it had done in the past in order to compete, but Dryburgh believed that this would be an extremely damaging move. Aldi had stated publicly that its intention was to remain at least 15% cheaper than Tesco. Aldi has always been well placed to meet this target: its whole business has been designed to be lower cost than the competition.

In February 2017 Aldi stocked only around 1,500 lines, as against Tesco's 90,000. Around 90% of those lines were reported to be own brands. The package sizes are designed to make optimum use of the shelves, and the goods are delivered in shelf-ready packaging. Dryburgh argued that a company cannot compete on price with other firms which have systematically designed their businesses to be lower cost — it would be like British Airways deciding to compete on price with Ryanair.

Follow-up questions

1 Suggest two forms of non-price competition that Tesco might use to regain market share from 'hard discounter' retailers.
2 Tesco's largest supermarkets have usually been built outside of town and city centres. However, along with other supermarket companies, since 1994 Tesco has invested in convenience stores such as Tesco Express in high-street locations and in suburban shopping parades. Why have supermarket companies such as Tesco chosen to invest in convenience stores?
3 Research the prices charged in Tesco superstores and convenience stores. Are the prices charged similar or different? Suggest one reason for any price differences.
4 Research Tesco's recent business strategy and comment on its success or failure.

QUANTITATIVE SKILLS 5.4

Worked example: calculating a concentration ratio

Table 5.3 shows the usage-based market share of internet web browsers in Europe in July 2022.

Table 5.3 Market share of internet web browsers

Web browser market	Market share (%)
Google Chrome	58.8
Apple Safari	19.9
Mozilla Firefox	6.5
Microsoft Edge	5.9
Samsung Internet	3.5
Others	5.4

Calculate the four-firm concentration ratio for the web browser market in Europe and comment on the nature of the market structure.

We calculate the four-firm concentration ratio by adding up the percentage market shares of the four leading firms. This is 58.8% + 19.9% + 6.5% + 5.9%, which equals 91.1%. The high concentration ratio tells us that the European web browser market is an oligopoly, at least as defined by market structure. The data provide no evidence as to whether or not it is a competitive or collusive oligopoly, though in the absence of evidence discovered by monopoly regulators, such as the Competition and Markets Authority in the UK, it is probably a competitive oligopoly.

TEST YOURSELF 5.13

Distinguish between monopolistic competition and oligopoly.

Oligopoly and market behaviour

KEY TERM
market conduct the pricing and marketing policies pursued by firms. This is also known as market behaviour, but is not to be confused with market performance, which refers to the end results of these policies.

As already mentioned, oligopoly is best defined, not only by market structure or the number of firms in the market, but also by **market conduct**, or the behaviour of the firms within the market. An oligopolistic firm affects its rivals through its price and output decisions, but its own profit can also be affected by how rivals behave and react to the firm's decisions. Suppose, for example, the firm reduces its price in order to increase market share and boost profit. Whether the price reduction increases or reduces the firm's profit depends on the reactions of the other firms.

Interdependence and uncertainty in oligopoly

Competitive oligopoly exists when the rival firms are interdependent in the sense that they must take account of each other's reactions when forming a market strategy, but independent in the sense that they decide their market strategies without cooperation or collusion. As a result, uncertainty is a characteristic of competitive oligopoly; a firm can never be completely certain of how rivals will react to its price, marketing and output strategy. If the firm raises its price, will the rivals follow suit or will they hold their prices steady in the hope of gaining sales and market share?

TEST YOURSELF 5.14
What is the difference between market structure and market conduct?

Non-collusive oligopoly, collusive oligopoly and cartels

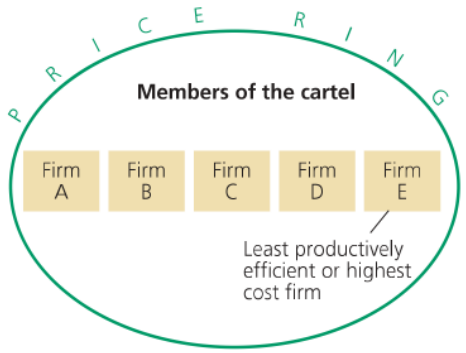


Figure 5.15 A cartel or price ring

As we noted in the previous paragraph, in competitive oligopoly, firms act independently in the sense that they do not form agreements with each other. This is also known as non-collusive oligopoly. The uncertainty facing competitive oligopolists can be reduced and perhaps eliminated by the rival firms colluding together — for example, by forming a **cartel** or price ring. In Figure 5.15, five firms jointly agree to charge a price to keep Firm E, which is the least efficient firm, in the market. In a competitive market, Firm E would have to reduce costs or go out of business. Cartel agreements enable inefficient firms to stay in business, while other more efficient members of the price ring enjoy abnormal profit. By protecting the inefficient and enabling firms to enjoy an easy life protected from competition, cartels display the disadvantages of monopoly (high prices and restriction of choice). However, this is usually without the benefits that monopoly can sometimes bring, namely economies of scale and improvements in dynamic efficiency.

TEST YOURSELF 5.15
Why may firms in highly concentrated markets decide to form a cartel?

KEY TERM
cartel a collusive agreement by firms, usually to fix prices. Sometimes there is also an agreement to restrict output and to deter the entry of new firms.

Collusion versus market cooperation

Although forming a cartel can achieve a better outcome than competitive behaviour for oligopolistic firms, the result is unlikely to be good for consumers. For this reason, cartel agreements are usually illegal and judged by governments as being anti-competitive and against the public interest.

Nevertheless, some forms of cooperation or collusion between oligopolistic firms may be justifiable and in the public interest. These include joint product development (such as the Ford Fiesta and Mazda 2 cars, both built using many shared components between 1974 and 2015), and cooperation to improve health and safety within an industry or to ensure that product and labour standards are maintained. Such examples of industry collaboration, or overt collusion, which is in full public view, are normally deemed to be good, in contrast to price collusion, which is regarded as bad. Price collusion and other market-rigging agreements almost always take place in secret. This is covert collusion. Tacit collusion, by contrast, occurs when there is 'an understanding' without any explicit agreement between the firms.

STUDY TIP

Collusive or cooperative behaviour enables firms to reduce the uncertainty they face in imperfectly competitive markets. However, some forms of collusion — for example, on joint development of products or ensuring industry safety standards — are in the public interest.

TEST YOURSELF 5.16

The chairpersons of firms tendering for a government contract attend a secret meeting and verbally agree with each other to fix a higher price than if there were independent bids. What sort of collusion is this? Justify your answer.

EXTENSION MATERIAL

Joint-profit maximisation in collusive oligopoly

Joint-profit maximisation, which is illustrated in Figure 5.16, occurs when a number of firms decide to act as a single monopolist, yet keep their separate identities. Oligopolistic firms undertake joint-profit maximisation in the belief that it can lead to higher profits for all the firms taking part. The monopoly *MC* curve depicted on the right-hand side of the diagram is the sum of the identical *MC* curves of three firms (one of which is shown on the left of the diagram). The three firms share an output of 750 units, determined on the right of the diagram where the industry *MR* and *MC* curves intersect. Each firm charges a price of £10, which, as the diagram shows, is the maximum price consumers are prepared to pay for 750 units of the good. The monopoly output of 750 units is well below 1,000 units, which would be the output if the industry were perfectly competitive. The shaded area in the right-hand panel shows the efficiency or welfare loss caused by the cartel raising the price to £10 and restricting output to 750 units. In this example, the members of the cartel split the 750 units equally, each firm producing 250 units. The shaded area on the left of the diagram shows the abnormal profit made by each firm.

Although there is an incentive for firms to collude to maximise their joint profits, there is also an incentive for each member of the cartel to cheat on the agreement. The marginal cost of producing the 250th unit of the good is only £4, yet for the firm (but not the whole industry) the marginal revenue received from selling one more unit is £10 (i.e. the price set by the cartel). One member of the cartel can increase its profit at the expense of the other firms by secretly selling an output over and above its quota of 250 units at a price less than £10, but greater than the marginal cost incurred (£4). This is an example of a divergence between individual and collective interest. The firms' collective interest is to maintain the cartel so as to keep total sales down and the price up. But each firm can benefit by cheating on the agreement — as long as all the others do not also cheat.

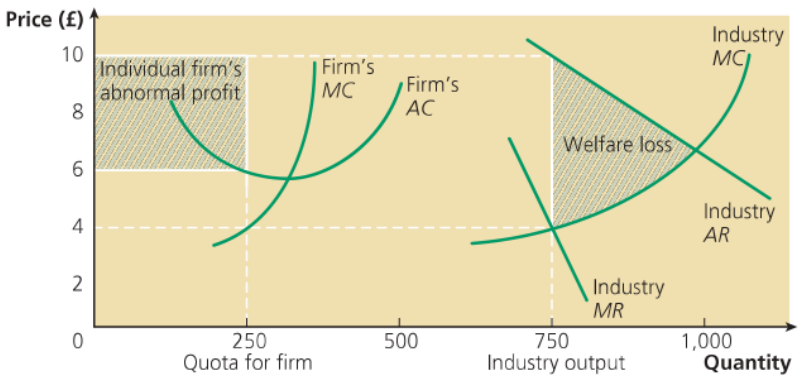


Figure 5.16 Joint-profit maximisation by members of a cartel

SYNOPTIC LINK

Economic welfare is a key measure of how successful a firm or economy is in achieving an efficient allocation of scarce resources. Welfare gains and welfare losses are explained in relation to international trade on page 533.

The kinked demand curve model

The kinked demand curve theory can be used to illustrate how a competitive oligopolist may be affected by rivals' reaction to its price and output decisions. The theory was originally developed to explain alleged price rigidity and an absence of price wars in oligopolistic markets.

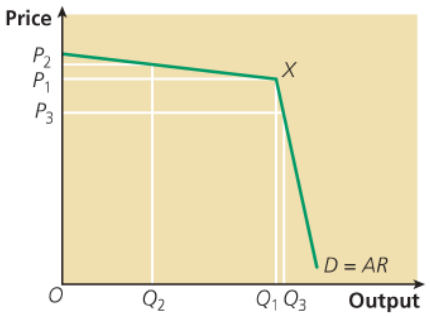


Figure 5.17 The kinked demand curve

Suppose an oligopolist initially produces output Q_1 in Figure 5.17, selling this output at price P_1. In order to anticipate how sales might change following a price change, firms need to know the position and shape of the demand and revenue curves for their products. But in imperfectly competitive markets, firms lack accurate information about these curves, particularly at outputs significantly different from those currently being produced. This means that the demand curve or *AR* curve in Figure 5.17 is not necessarily the correct or *actual* demand curve for the oligopolist's output. Instead, it represents the firm's *estimate* of how demand changes when the firm changes the price it is charging.

When *increasing* price from P_1 to P_2, the oligopolist expects rivals to react by keeping their own prices stable and not following suit. By holding their prices steady, rivals try to gain profit and market share at the firm's expense. This means that the oligopolist expects demand to be *relatively elastic* in response to a price increase. The rise in price from P_1 to P_2 is likely to result in a *more than proportionate fall in demand* from Q_1 to Q_2.

Conversely, when *cutting* its price from P_1 to P_3, the oligopolist expects rivals to react in a very different way, namely by following suit immediately with a matching price cut. In this situation, because the market demand curve for the products of all the firms slopes downwards, each firm will benefit from *some* increase in demand. However, the oligopolist fails to gain sales from rivals *within* the market. This means the oligopolist expects demand to be less elastic, and probably *inelastic*, in response to a price cut. The fall in price from P_1 to P_3 may result in a *less than proportionate increase in demand* from Q_1 to Q_3. The oligopolist therefore expects rivals to react *asymmetrically* when price is raised or lowered.

In Figure 5.17, the oligopolist's initial price and output of P_1 and Q_1 intersect at point *X*, or at the kink at the junction of two demand curves of different elasticity, each reflecting a different assumption about how rivals may react to a change in price. If when price is raised, demand is elastic, and when price is cut, demand is inelastic, any change in price will reduce the oligopolist's total revenue. In this situation, the oligopolist fears that both a price increase and a price cut are likely to reduce total profit. Given this fear, the best policy may be to leave price unchanged.

EXTENSION MATERIAL

Developing the kinked demand curve theory

By developing the theory a little more, we can explain a second reason why prices may tend to be stable in oligopoly. As Figure 5.18 illustrates, a mathematical discontinuity exists along the vertical line drawn above output Q_1. For the demand and average revenue curves, the discontinuity occurs at the 'kink' where the curves intersect. But for the marginal revenue curves, which are twice as steep as the *AR* curves with which they are associated, the discontinuity is the 'gap' between the two *MR* curves, shown by the distance *B* to *C*.

Suppose initially the firm's marginal cost curve is MC_1, intersecting the *MR* curve at point *A*, which is positioned in the middle of the vertical section. The diagram shows that the *MC* curve can rise or fall within the vertical section of the *MR* curve, without altering the profit-maximising output Q_1 or price P_1. But if marginal costs rise above MC_2 at point *B* or fall below MC_3 at point *C*, the profit-maximising output changes. In either of these circumstances, the oligopolist would have to set a different price to maximise profits, provided of course that the *AR* curve accurately measures demand for the firm's product at different prices. Nevertheless, the oligopolist's selling price remains stable at P_1 as long as the marginal cost curve lies between MC_2 and MC_3, despite quite considerable changes in marginal costs.

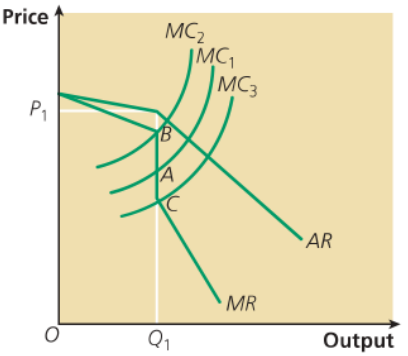


Figure 5.18 Developing the theory of the kinked demand curve

Criticisms of the kinked demand curve theory

There are a number of weaknesses in the theory we have just described. Although at first sight it is attractive as a neat and apparently plausible explanation of price stability in conditions of oligopoly, few economists now accept the kinked demand theory of oligopoly pricing.

First, it is an incomplete theory, since it does not explain how and why a firm chooses in the first place to be at point *X* in Figure 5.17. Second, the evidence provided by the pricing decisions of real-world firms gives little support to the theory. Competitive oligopolists seldom respond to price changes in the manner assumed in the kinked demand curve theory. It is more reasonable to expect a firm to test the market — that is, to raise or lower its selling price to see if rivals react in the manner expected. If rivals do not, then the firm must surely revise its estimate of the shape of the demand curve facing it. Research has shown fairly conclusively that oligopoly prices tend to be stable or sticky when demand conditions change in a predictable or cyclical way, but that oligopolists usually raise or lower prices quickly and by significant amounts, both when production costs change substantially, and when unexpected shifts in demand occur.

STUDY TIP

Students often wrongly believe that the kinked demand curve provides a complete theory of oligopoly. It is actually a very doubtful theory, but it does illustrate how oligopolists are interdependent and affected by uncertainty.

The advantages and disadvantages of oligopoly

The term 'oligopoly' covers a range of more narrowly defined market structures, ranging from pure duopoly (two firms only in a market), to markets which combine quite a large number of firms, a few dominant, but many very

small and without much market power. It also ranges from competitive or non-collusive oligopoly to cartels in which member firms collude together, often to reduce competition. The following list of advantages and disadvantages is not relevant for all oligopoly market structures.

Possible advantages of oligopoly

- Just like a monopoly, firms benefit from economies of scale in oligopoly, which means they can become more dynamically efficient and can pass on cost cuts as low prices to consumers.
- With only a few firms available from which to buy, it will be easy for consumers to compare and choose the best option for their needs. Oher markets may offer too much choice, leading to confusion among consumers. Behavioural economists sometimes make this point.
- Provided that there is a degree of competition, oligopolists continuously innovate and develop new and better products.

Possible disadvantages of oligopoly

- Again, just like a monopoly, oligopolies restrict output and raise prices (and profit), compared to a more competitive market. Firms may satisfice, content with an easy life.
- As we have noted, cartels are a bad form of market structure, combining the disadvantages of monopoly (high prices, productive and allocative inefficiency and lack of choice) with few if any of the benefits.
- Small, competitive and innovative firms may find it difficult to enter the market.
- Ultimately, as in monopoly, the producer rather than the consumer ends up being dominant, with producer sovereignty rather than consumer sovereignty ruling the market.

Price leadership, price agreements and price wars

Price leadership

Because overt collusive agreements to fix the market price, such as cartel agreements, are usually illegal, imperfectly competitive firms often use less formal or tacit ways to coordinate their pricing decisions. An example of covert collusion is **price leadership**, which occurs when one firm becomes the market leader and other firms in the industry follow its pricing example.

KEY TERMS

price leadership the setting of prices in a market, usually by a dominant firm, which is then followed by other firms in the same market.

price agreement an agreement between a firm, similar firms, suppliers or customers regarding the pricing of a good or service.

price war occurs when rival firms continuously lower prices to undercut each other.

Price agreements

We have already seen earlier in the chapter how members of a cartel often fix the prices that all the members of the cartel charge by forming a price ring. **Price agreements** can also be made between firms and their suppliers, and between firms and their customers. In both these cases, a price agreement is usually good for a specified period of time, such as six months.

Price wars

Price wars, which take place both in monopolistic competition and in oligopoly, may be started accidently or may be instigated deliberately to damage competitors. Whereas price leadership usually involves quite friendly relations between the companies involved, price wars — as the name indicates — centre on price cutting aimed at the very least at increasing market share, and in

the extreme at forcing rival firms out of business. Consumers may of course benefit from a price war, at least in the short run, though if firms are driven out of the market, the monopoly power of the surviving firms increases, which is likely to be to the detriment of consumers.

APPLICATION OF ECONOMICS IN THE REAL WORLD 5.6

Discounting in the books market

Ending retail price maintenance in the UK books market resulted in the closure of many small, independent bookshops

Many years ago, UK law allowed manufacturers to decide the prices at which retailers sold their goods. If a shop tried to undercut or discount a set price, the manufacturer could stop supplying the good to the retailer. As a result, price competition between firms selling similar goods hardly existed and manufacturers made excessive profits. This was a restrictive practice known as *retail price maintenance*.

Eventually the law was changed in an effort to promote more competition. However, manufacturers then set recommended retail prices (RRPs), which they hoped shops would abide by.

Selling at recommended retail prices became especially important in book publishing, where very little price discounting took place. Paperback books were generally sold at the prices printed by the publishers on the covers. Small bookshops justified the lack of price competition on the grounds that consumers benefited, both from bookshops surviving in small towns and from a much wider selection of books being on display.

However, the law was eventually changed. Large book chain stores such as Waterstones began to sell books at prices well below the publishers' recommended prices. Small bookshops could not compete and many closed down. However, large stores themselves were now facing increasing competition from the growth of the online retailer, Amazon. Many people now pop into bookshops, not to buy books, but to browse, before going home to order the books they want online.

The picture is different in France. French law fixes book prices with the result that readers pay the same whether they buy online, from a big high-street chain, or from a small bookseller. Extensive discounting is banned, although 5% discounts are allowed. Result: there are between 2,500 and 3,000 independent bookshops in France, compared with fewer than 1,000 in the UK. Most small French towns have at least two bookshops and there is a wide choice of books on display.

The French government says that the banning of discounts of more than 5% has saved its independent bookstores from the free-market capitalism that hit the UK when it abandoned fixed prices. Nevertheless, the owners of French bookshops still argue they cannot compete with Amazon, even with Amazon's discounts limited to 5%, because the online retailer provides free postage and free fast delivery deals on top of the discount. Consumers can also bypass French law by ordering books online in countries such as Belgium.

A French culture minister has said: 'Everyone has had enough of Amazon, which by dumping practices, slashes prices to get a foothold in markets, only to raise them as soon as they have established a virtual monopoly ... the book and reading sector is facing competition from certain sites using every possible means to enter the French and European book market ... it is destroying bookshops.'

Follow-up questions

1 Explain how the changing nature of competition in the book market illustrates the process of creative destruction.
2 Do you agree that the growth of Amazon has been good for consumers? Justify your answer.
3 Conduct some research to find out whether the number of specialist bookshops has declined in the town or area in which you live.
4 Many people are worried about the decline of 'high street' shopping in the UK. Do you agree that this is a problem? What, if anything, can be done to reverse this decline?

SECTION 5.7 SUMMARY

- Oligopoly is imperfect competition 'among the few'.
- High concentration ratios are often used to define oligopoly.
- It is usually more useful to define oligopoly by interdependence and reactive behaviour.
- It is also useful to distinguish between collusive and competitive oligopoly.
- Oligopolists sometimes collude to reduce uncertainty and to increase monopoly profit.
- The theory of the kinked demand curve, which is often used to model competitive oligopoly, illustrates the effects of uncertainty and interdependence in oligopoly, but the theory has a number of weaknesses.
- Just like a monopoly, firms benefit from economies of scale in oligopoly, which means they can become more dynamically efficient and can pass on cost cuts as low prices to consumers.
- Provided that there is a degree of competition, oligopolists continuously innovate and develop new and better products.
- Again, just like a monopoly, oligopolies restrict output and raise prices (and profit), compared to a more competitive market. Firms may satisfice, content with an easy life.
- Collusive oligopoly in the form of a cartel is a bad form of market structure, combining the disadvantages of monopoly (high prices, productive and allocative inefficiency and lack of choice) with few if any of the benefits.

5.8 Price discrimination

The meaning of price discrimination

KEY TERM
price discrimination charging different prices to different customers for the same product or service, with the prices based on different willingness to pay.

Price discrimination involves firms charging different prices to different customers for the same product or service, based on differences in the customers' ability and willingness to pay. Those customers who are prepared to pay more are charged a higher price than those who are only willing to pay a lower price. In the main form of price discrimination, the different prices charged are not based on any differences in costs of production or supply. However, in one form of price discrimination, bulk buying, consumers buying larger quantities are charged lower prices than consumers purchasing smaller quantities of the good.

When this happens, different costs of supply may be involved. Bulk purchases generally have lower average costs of production than smaller purchases.

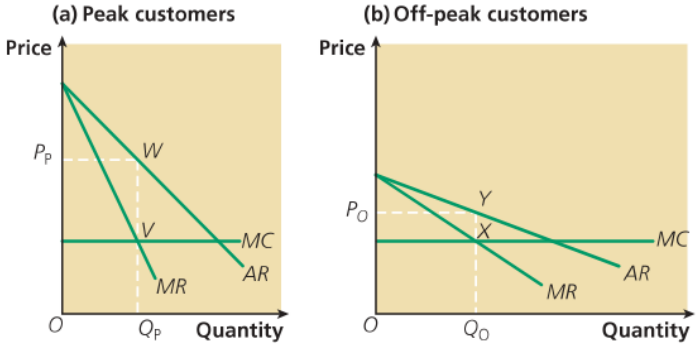


Figure 5.19 Price discrimination when a firm charges different prices to two groups of customers

In Figure 5.19 a rail operating firm divides its market into peak time (busy periods) and off-peak time (less busy periods) customers, each with a different elasticity of demand for travel. For both peak and off-peak customers, the downward-sloping demand curves in Figure 5.19 show average revenue, but not marginal revenue. In each case, the *MR* curve is twice as steep as the *AR* curve. The diagrams also assume that the marginal cost incurred when an extra customer uses the rail service is always the same. This is shown by the horizontal *MC* curve.

To maximise profit, *MR* must equal *MC* in both peak and off-peak sub-markets. As the diagrams show, this means that peak customers pay a higher ticket price than off-peak customers, namely P_P, with off-peak customers paying the lower entry price of P_O. With the different prices being charged,