Chapter 7

Imperfect competition in transport markets

Learning Outcomes:

On reading this chapter, you will learn about:

- The imperfect market structures of monopoly and oligopoly and their high prevalence in transport markets
- The main sources of barriers to entry into transport markets
- The disadvantages and advantages of imperfect markets in the provision of transport services
- The tendency for competitive transport markets to veer towards imperfect market structures through company mergers and acquisitions
- One perspective of the process of competition and how industry structure may change and evolve over time.

INTRODUCTION

In this chapter the examination of competition within transport markets is further developed by introducing the idea of the imperfectly competitive market. A simple but highly accurate definition of such a market is one that breaches one or more of the assumptions of perfect competition. What this results in is a market that may have some form of competition, but that competition tends to be flawed in some respect. Consequently, operators within the market generally do not compete as fiercely as they would do in a situation of perfect competition. When left to the free market, historically most transport industries have tended towards these types of imperfect market structures, thus the two main forms, monopoly and oligopoly, are introduced in this chapter. In the course of the chapter we will also see that competition can take several different forms other than being based solely upon the price charged and/or the service offered, some of which are not always obvious as competitive strategies.

In addition to the impact and effect of externalities, the issue of imperfectly competitive markets is the other major issue facing the organisation and provision of transport services. The consequences reach far beyond the direct issues covered in this chapter and extend to other matters such as the payment of subsidy, the regulation of operations and the question of private

versus public ownership and control of transport services. This chapter will outline the problems as well as the potential advantages of imperfect markets in the provision of transport services. In the final section, the actual process of competition is examined, which attempts to address the question as to why so many transport markets tend towards this structure even where the best intentions of regulatory authorities have been that these markets should remain competitive. There are numerous examples where reforms have been almost wholly unsuccessful in delivering a competitive transport market in the long run. One of the principal reasons for this is that the underlying market structure, and more importantly market conduct, has proved to be far stronger than any government intervention. Understanding the basics of the competitive process is thus an important part in identifying the underlying characteristics that lead to such undesired outcomes.

MONOPOLY

There is a spectrum as regards forms of market structure and levels of competition within transport markets. At the one end is the highly competitive market of perfect competition as roughly approximated by the road haulage industry. There are then a number of increasingly anti-competitive forms before arriving at the other extreme where no competition exists at all, known as a monopoly. Most rail services are a good example of a monopoly, where there exists only a single operator on a given route. There are also countless examples in the bus sector where all services within a given area are provided by one company. In Britain and elsewhere, however, in the case of railways this has almost universally occurred by design rather than as a result of market forces. This is the regulated market, where a monopoly is legally imposed, and thereby controlled, by the regulatory machinery. This topic will be further examined in Chapter 10. In the second example, however, local monopolies in the deregulated British bus markets have occurred as a result of market forces. In this chapter we consider the free market idea of a monopoly in order to first understand this as a concept in its own right and major issue in transport markets, and then to better appreciate the ideas underlying the regulated market considered later.

In theoretical terms, a monopoly in transport services is said to occur where there is only one supplier to the market, in other words a 'pure' monopoly. Note therefore that this can exist both within a single industry such as bus or rail services or across modes within a single area, such as is the case in London and many other major cities. Note also that this definition refers to the theoretical case; however, in practical terms a monopoly situation is generally considered to exist in Britain where one firm controls more than 25 per cent of the market, or in the EU where it breaks a number of turnover thresholds. Any proposed merger within Britain therefore that would create a company with more than 25 per cent of the market would be investigated by the Competition Commission, or referred to the European Commission in the case of a European cross-border merger that breaks the minimum revenue threshold. This is because at that level of dominance the danger is that such a merger may create an anti-competitive market and thus operate against the public interest. For example, in 2006 the proposed joint venture in the provision of Scottish inter-urban bus services between the two incumbents, Scottish Citylink and Stagecoach, was referred to the Competition Commission on the grounds that it would act against the public interest. Despite a large body of evidence to the contrary, the Commission concluded that the joint venture would result in higher fares, reduced services and increased barriers to entry through

network effects. As a result, their preferred remedy was the sale of a number of buses to a rival operator. After two years however the sale had still not happened, highlighting one of the problems with addressing the problems of imperfect markets, in this case finding a company willing to compete in this particular market. The Competition Commission has also investigated the situation of Ferovial owning BAA airports in the South East of England, on the basis that it could be seen as anti-competitive.

Returning to the theory, as there is only one operator supplying the market in a monopoly, then the firm's individual demand and supply curves are the market's demand and supply curves. Unlike perfect competition, therefore, the monopoly profit maximising position is shown on a single graph.

Notice that Figure 7.1 is almost exactly the same as Figure 6.2 in the previous chapter, the only difference being the labelling to identify this as the monopolist's profit maximising position. The monopolist faces a downward sloping demand curve (there is always an alternative to a monopolist's goods or service – go without!) and marginal revenue is less than average revenue at each level of output. Extending the analysis, the firm's profit maximising level of output is found at Q_M, where marginal revenue equals marginal cost. This would produce an average cost of AC_M and at that level of output the price charged would be P_M. Notice that the firm is not producing at the lowest point on the average cost curve, hence this is one reason why monopolies are not as economically efficient as perfect competition.

At the profit maximising level of output Q_M, the monopolist would be making abnormal profits, as shown by the shaded area AC_M, P_M, b, a. In this case, however, unlike perfect competition, abnormal profits would not be competed away in the long run due to the existence of barriers to entry which prevents new firms entering this market. The only change that may occur is in the

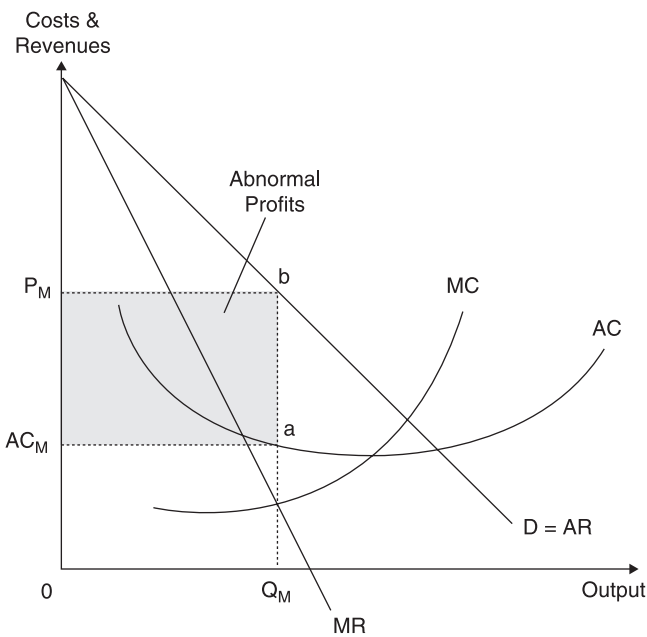

Figure 7.1 *Monopolist profit maximising position*

very long run, as a result of a sustained shift in demand away from the good or service. The monopoly market structure raises a number of important economic issues, the first of which surrounds the key part played by barriers to entry.

Barriers to entry

Barriers to entry are key to sustaining a short-run monopoly into the longer term, as a barrier to entry stops new firms entering the market and competing with the established operator. Often a distinction is made between structural and strategic barriers to entry. The former relates to where there are basic industry conditions that may limit market entry, the latter where organisational barriers are put in place by incumbent firms in order to achieve the same effect.

Structural barriers

Firm size. Firm size as a barrier to entry is directly related to economies of scale. Where there are substantial economies of scale, any potential entrant must be of a size that will enable it to capture all the economies of scale, i.e. operate at the minimum efficiency scale. Any entry at a smaller scale would put the new entrant at a cost disadvantage that could ultimately be exploited should a price war ensue. The sheer investment involved therefore in entering at a large scale of production can be a barrier to entry as only a few firms or organisations will have the ability to undertake the investment. We have already seen in Case study 5.3 that within rail operations, returns to scale tend to be significant due to the high capital requirement in the production of rail services. If left purely to the market, therefore, this would act as a significant barrier to entry to potential new entrants. This is something we shall see further in Chapter 12 and also applies to many if not most of the US rail freight companies. Note that a further barrier is that the new entrant would have to sell the large level of output produced at a profit in order for its operations to be sustainable in the longer term. The prevailing market conditions would thus have to be such that another major operator could be supported in the industry. This again will limit those able, or willing, to enter the industry, and certainly within the rail examples cited is one that is unlikely to apply (see below under natural monopoly).

High sunk costs. A sunk cost is a cost that cannot be redeemed or re-claimed when the firm leaves the market. The best example of a high sunk cost, with no pun intended, is the Channel Tunnel. When this opened in 1995 this represented a very high sunk cost. If the tunnel's operator, Eurotunnel, was to leave the market they could not take the Channel Tunnel with them and set it up elsewhere. This was in direct contrast to their competitors in the form of the ferry operators, who could leave the market by withdrawing their ferries and putting them onto other routes, as many ultimately did. A high sunk cost therefore represents a very high risk to the potential new entrant, and as such would be a strong barrier to entry because if the firm leaves the industry it leaves with nothing.

Moshandreas (1994) lists further structural barriers to entry as product differentiation, where a strong brand loyalty is created, hence making it difficult for any potential entrant to gain a significant (profitable) foothold in the market, and an absolute cost advantage arising from a skilled management team, superior techniques and know how. In more general terms this effect is where existing firms have certain cost advantages due to the experience of being in the industry for a

significant period of time. This is sometimes referred to as the learner curve, a well-known phenomenon in aircraft production, where the experience of doing results in less waste and more efficiency in the production of the good or service. Any new entrant would have to go through the same process of the learner effect and may not survive that period as it would be at a disadvantage to the incumbent operator. The learner effect as a barrier to entry could also be expanded to include market knowledge, where a better knowledge of the market served represents a barrier to entry. Hence, for example, the Manchester bus market is not the same as the Sheffield bus market, and hence those serving the Sheffield market would be at an advantage even against established bus operators as they would better know the needs of their customers. Moshandreas (op. cit.) also lists a lower cost of capital due to a good reputation gained over a lengthy period of time and the beneficial effects of vertical integration as further structural barriers, although this latter effect probably falls somewhere between a structural and a strategic barrier.

Strategic barriers to entry

Legal protection. This is the first barrier to entry listed as strategic, as it does not relate to industry conditions but rather is one imposed by a third party, in this case the legal system of the country. A legally protected monopoly arises where the firm has a legal right to be the only provider/producer of a given good or service in a particular country or area, and as such is the most straightforward and the most stringent of all the barriers to entry listed here. The most common legally protected monopolies are normally created through the issuing of patents, where the inventors or discoverers of a drug or process are given a legal right to be the sole producers of that good over a period of time. Others exist however. Regulatory authorities in certain markets may nominate a particular operator to be the only provider of that service. In the London bus market, for example, the winner of the tender to provide a given service has the exclusive right to operate that particular route. Direct competition on the route is prevented through legal protection which stops any other bus company providing an identical competing service.

Control of the factors of production. Where one single firm controls the factors of production, then this constitutes a strategic barrier to entry as it would be very difficult for any other firm to enter the market as it simply would not have access to any production capabilities. This will normally relate to production processes and labour skills, where one company may have all the skilled labour and that knowledge may be protected by some form of covenant. The classic example of control of the factors of production is De Beers, the world's largest producer of diamonds, which controls world supply and distribution through its London-based Central Selling Organisation. This is what would be known as a vertically integrated firm, in which one single firm owns and controls the whole production process from supply of the raw materials right through to the final point of sale to the consumer. In the past, breweries were also a classic example of the vertically integrated firm, as they brewed the product, distributed it throughout the country through their own fleet of lorries and network of depots and then finally sold it to the consumer through their own outlet of hostelries. As such, it would be very difficult for any new firm to enter at any particular stage of this process, and thus market entry would be restricted. Such operations however are far less common today; however, horizontally integrated firms continue to exist. These are firms that are at the same stage in the production process. Thus First Bus, as was, began by operating bus services but then moved into the provision of rail services as well, thus becoming

First Group. Horizontally integrated firms are not a direct barrier to entry to a single market as such, although may operate as a barrier with regard to firm size, as in order to compete with a particular operator a firm may have to simultaneously enter several markets at once.

Exclusive dealerships. An exclusive network of dealerships is where the manufacturer of a given product may choose to only supply a particular outlet in a given area. This therefore gives the manufacturer far more power throughout the whole logistical chain, and in particular, far more control over the actual point of sale. Car manufacturers are a good example of this type of barrier to entry, where the manufacturer carefully controls the number and location of retail outlets. Within the EU, car manufacturers were exempt from EU competition laws which would have prevented such actions. This exemption was used highly effectively as a barrier to entry, and meant car manufacturers could carefully control the network of outlets and prevent local competition in new car sales. This unsatisfactory situation resulted in considerable variations in car prices throughout the EU and the exemption was eventually removed by the European Commission in 2002.

Branding. This is the last strategic barrier to entry listed and one in which a good example is given by the bus industry in the UK. When organised in the public sector, most bus companies were identified with particular regions or areas. Thus Glasgow buses were green and yellow, Edinburgh buses maroon, Bristol buses green and so on. If that way inclined, you could in fact identify where you were in the country by the colour of the buses operating on the streets! In the early days of privatisation, most of the private bus companies kept these regional identities; however, over time most if not all have been eradicated and national 'brands' identified. Thus First Glasgow buses are grey, First Edinburgh buses are grey and First Bristol buses are grey. This is to establish a national brand and thus one that makes market entry for a new entrant more difficult, particularly at a national level.

Disadvantages of monopolies

Monopolies are normally associated with all things that are 'bad' with capitalist (market) based economies. Most of these 'all things' are associated with the fact that monopolies are anti-competitive. This not only results in the charging of higher prices to consumers that are faced with very little alternative other than to do without, but can also result in a general slackness in the working practices of the monopolist due to the lack of competitive pressures. This has led to a whole host of anti-competitive agencies, such as those highlighted earlier, which have been appointed to oversee the structure of not only transport services but all industrial sectors of the economy. In the case of the transport industries, this intervention would be irrespective if the industry had a specific regulator or not, as the roles and functions of the industry regulator tend to be very different from that of the competition agencies. This basic argument of anti-competitive market behaviour however can be expanded in order to look in more detail at the main disadvantages of monopolies.

Production inefficiencies

Unlike perfect competition where in the long run production will always occur at the lowest point on the long run average cost curve, a monopolist is not 'forced' into achieving this position. In

simple terms this means that in most cases resources are being inefficiently used in the production of that good or service. Costs, in the form of the prices of factors of production, are a signal to the producer of the best combination of resources to use in the production process. Where costs are not minimised, production resources are not being used in their best combination. Monopoly is therefore almost always economically inefficient, although this will mainly relate to the scale of operations, i.e. scale inefficiencies. This occurs as a result of the monopolist restricting supply in the market, which in most cases will mean that it fails to capture all the available economies of scale.

Higher prices charged and lower output produced

If left to the market, the prices charged will be higher and the output level produced will be lower than a perfectly competitive industry facing exactly the same cost conditions. This is illustrated in Figure 7.2.

In the figure, the monopolist's demand curve is the market demand curve, shown by D = AR, and the associated marginal revenue curve is given by MR_M. Faced with average and marginal cost curves as outlined by AC and MC respectively, the monopolist will profit maximise where MC = MR, which is at output level Q_M with an associated price of P_M.

If this market was in perfect competition, however, for each individual firm the marginal revenue curve would equate to the average revenue curve as all firms are price takers. As before, the firm would again profit maximise where MC = MR, which in this case occurs at output level Q_{PC} with the associated price of P_{PC}. Under monopoly, therefore, the level of supply would be less and the price charged would be higher than if the market was in perfect competition. This

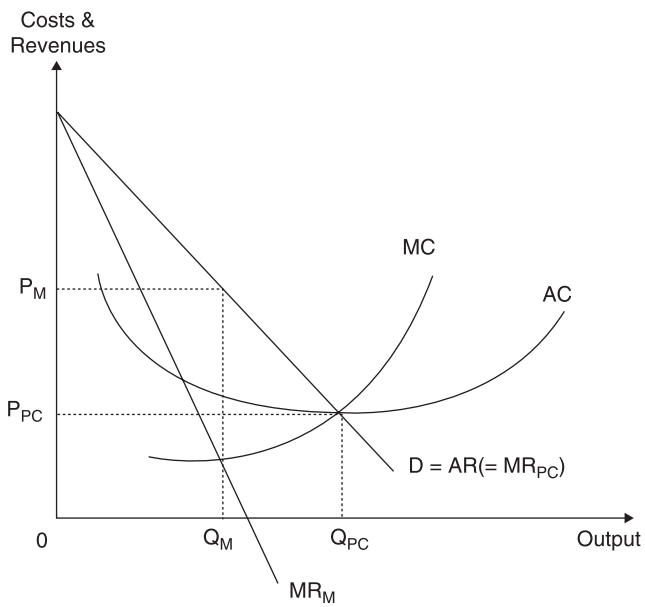

Figure 7.2 *Monopoly versus perfect competition*

restriction of supply in order to induce higher prices is probably viewed as the biggest drawback and fear of monopoly market structures. As highlighted, most transport markets tend towards this very type of market structure, which initially led to their control through public ownership, i.e. to force the (monopoly) industry through direct management to produce at Q_{PC} on Figure 7.2 rather than Q_M. Over time however thinking has changed, and now much of the reform that is ongoing within European Union transport markets is concerned with introducing and maintaining some form of competition into these markets in order to bring about the same result (see Chapter 10).

Reduces consumer surplus and is regressive

Consumer surplus is defined as the level of demand that would have been willing to pay a higher price than the market price. This is the area of consumer demand to the left of the total quantity demanded, as these individuals would have been willing to pay a higher price for the good than the market price. Consider Figure 7.3, where the market price is P_1 and demand found at point a on the demand curve, giving a quantity demanded of Q_1. At that price however those consumers whose demand lies in the area to the left of Q_1, the shaded area, would have been willing to pay a higher price for this service. This is the area of consumer surplus. For example at quantity Q_2, consumers would have been willing to pay price P_2. In a certain sense, therefore, these consumers are in 'profit' as they acquired the service for a lower price than the level at which they valued it. The money 'saved' therefore can be used to purchase other goods and services that will increase their utility, hence net consumer welfare is increased. Now consider what happens to this area of consumer surplus under perfect competition and monopoly market structures. This is illustrated in Figure 7.4.

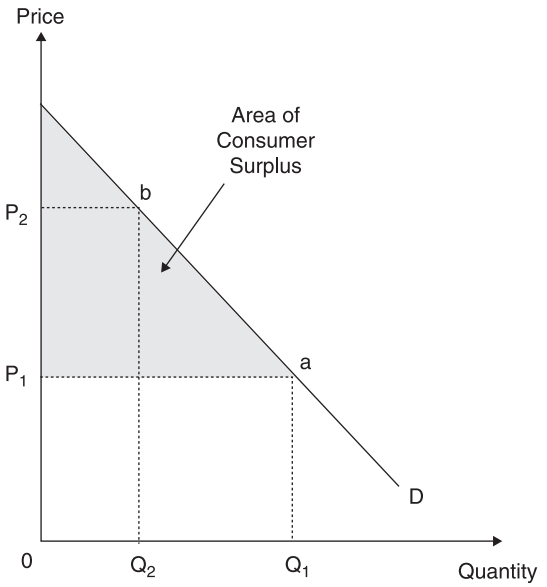

Figure 7.3 *Consumer surplus*

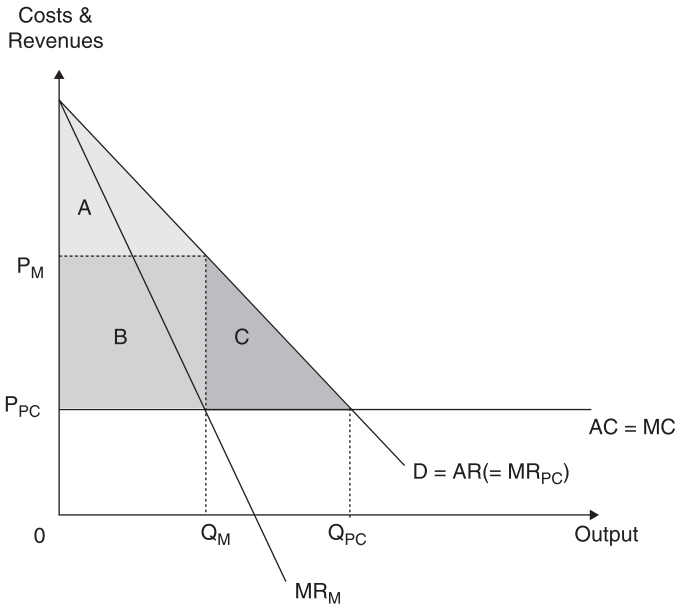

Figure 7.4 *Consumer surplus, perfect competition versus monopoly*

In order to simplify this illustration, costs have been assumed to follow constant returns with no economies of scale, hence the average cost curve is horizontal and thus at each point marginal costs equal average costs. Under perfect competition total consumer surplus is given by a summation of the areas marked by A+B+C, as the price is set at P_{PC}. If this market was a monopoly, however, then the area of consumer surplus would reduce to only that shown by area A. As we have seen, trade should never be a zero sum game, thus both parties benefit in any exchange. This reduction in consumer surplus concerns the balance between the utility received in the exchange of transport services for financial gain between the consumer and the producer. Where there is a monopoly provider of transport services, it is argued that if this remains unchecked the balance is too much in favour of the operator. This is also shown in Figure 7.4. Note that not only has the area of consumer surplus been reduced, but also area B has been transferred from the consumer in the form of lower prices paid for the service, to the producer in the form of higher profits gained from the production of the service. Not only is this a simple 'transfer', however, but is also potentially a regressive measure as bus users will include the less well off within society, whilst shareholders will include the better off. Such actions therefore take from the poor (due to the necessity of many transport services) and give to the rich, thereby increasing the divisions between the rich and poor within society.

Net welfare loss

Monopolies are said to suffer from what is known as a net welfare loss. Basically, the imbalance in the trade between the consumer and the producer in favour of the producer results in a reduction

of the total benefits that could be accrued from the exchange. Note that in Figure 7.4, not only has area B 'transferred' to the producer, but area C has been lost altogether. What this actually represents are consumers who no longer use the service due to the higher prices charged under monopoly. If the price was to be reduced back to the perfect competition level, they would again use the service. This therefore is a net welfare loss and society is no longer maximising the uses of its scarce resources.

X-inefficiency

X-inefficiency was briefly introduced in Chapter 5 as a source of decreasing returns to scale. It is also however a major argument against monopolies. The idea of X-inefficiency was originally devised by the American economist Harvey Leibenstein in 1966 (Leibenstein, 1966), and lies outside mainstream neo-classical economic thinking. The basis of Leibenstein's argument was that under certain conditions the average and marginal cost curves would be higher than they should be due to general management slack. The source of this general slackness was most prevalent under two situations. Firstly, where there was state ownership, then the lack of incentives created by providing services for the public interest rather than for profit would create such a situation. State ownership also removes the fear that management under performance would lead to bankruptcy or a take-over and replacement of the management team by the new owner. The other situation is where there is little or no competition to act as a spur to keep management control tight and hence costs slowly drift upwards. Monopolies, therefore, particularly those that are state owned and controlled, would be prime candidates to suffer from X-inefficiency. Until more recent times, virtually all public transport industries were state-owned monopolies and hence fell into this category.

The market no longer regulates itself

This final argument against monopolies is not actually an argument in itself but is rather an accumulation of all of the previous points listed. Where one firm dominates the market, then the market can no longer regulate itself in terms of producing economically efficient goods and services at equitable prices. As such, this is an outcome rather than a specific disadvantage. In most cases, therefore, particularly with respect to many transport industries, external intervention is required to provide this regulatory function, and this will always come at an added cost. This is an example of what was referred to as a second best solution in the previous chapter. Thus within transport markets there exists a massive machinery of bureaucratic regulatory agencies with respect to the rail, air and bus markets that in effect don't actually produce anything.

Advantages of monopoly

Despite the disadvantages outlined above, there are a number of situations where a monopoly market structure may offer several advantages over a more competitively based system.

A higher level of expenditure on research and development

Where there is only one single large firm in the market it is argued that the firm will have more financial resources and a higher level of confidence in the future to enable it to invest in a significant ongoing programme of research and development. Through this activity it can continue to make technological advances in the future that would simply not exist if production was spread around a large number of considerably smaller operators. The nub of the argument, therefore, would be that a monopoly can be economically efficient in the very long run through technical innovations in production techniques and processes. Whilst that argument concentrates very much on the supply side of the market in the form of lower costs, technical innovations may also enhance the consumer's experience from using that good or service, i.e. increase utility. Thus the high-speed train in France, the TGV, has significantly reduced journey times between the major French cities and brought almost airline standards of service to rail customers, whilst Maglev technology offers the potential to reduce journey times by a similar step again.

Market size – a natural monopoly

This is an issue partly examined before. The basic argument is that the market is of such a (relatively small) size, that only one firm can operate in the market and achieve all of the economies of scale. This is shown in Figure 7.5.

The key point to note from the figure is that the market demand curve, D_M, cuts the average cost curve AC before the point of minimum efficiency scale, Q_{MES}. At the maximum market size, therefore, average production costs are still falling. As a result, in order to take advantage of all of the potential economies of scale only one firm should supply the market. If the market was to be divided between a number of different firms, then as the major constraint is the market size, no

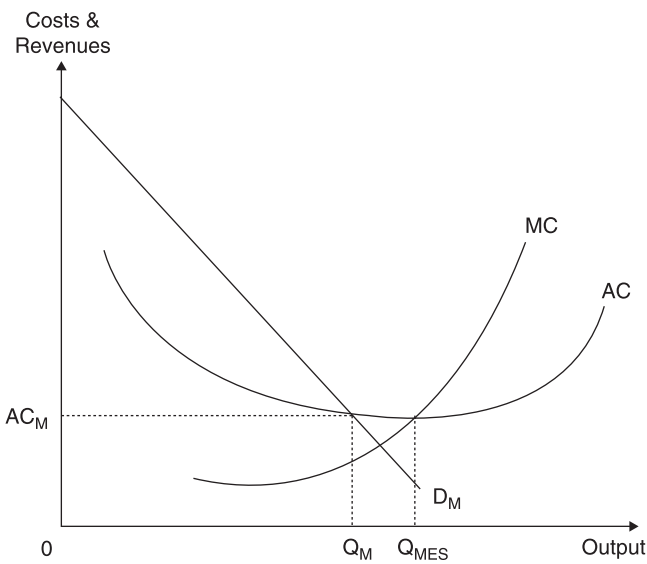

Figure 7.5 *Natural monopoly*

firm would be of a significant size to capture most of these economies. This is known as a natural monopoly, where it makes economic sense that there is only one firm in the market. The natural monopoly argument normally applies where there is some form of network used in the production of the service, such as in gas pipelines. The usual textbook example however is in the provision of rail services. Two companies may be competing between two cities, each company with its own rolling stock and infrastructure, but the total market is of such a size that neither achieves all potential economies of scale. This was the case in Britain in many areas prior to nationalisation of the railways in 1948 and even more so before the big four grouping of 1923. Services were nearly always duplicated between most towns and even triplicated between the major centres of population. As a monopoly provider, British Rail was in a position to ensure that the available capacity was fully utilised and hence capture all possible economies of scale.

Wasteful competition

Although very closely related to the natural monopoly argument, the issue of wasteful competition is worth highlighting on its own. Wasteful competition occurs where effectively double or treble the production resources are used to provide a service. Nash (1982) explains that wasteful competition happens when competition leads to the bidding down of average loads, and consequently average costs rise. While this can easily be confused with a natural monopoly due to a number of similar characteristics, the key difference can be highlighted by drawing a distinction between economies of carriage and economies in the production of services. Natural monopolies occur where there are economies in the production of services, where constraints on the market size mean that only one firm can achieve productive efficiency. Economies of carriage however exist where the cost per passenger carried can only be minimised where there is a single operator. This particularly applies to bus markets where many tend towards monopolies on the basis of economies of carriage. Thus whilst a given bus market may support more than one operator and all may be operating at the MES point in the production of services, costs in the carriage of passengers could be significantly reduced if only one company operated on the route. Due to economies in carriage, therefore, any competition on the route/area could be considered as wasteful.

Hotelling's law

Hotelling's law was originally devised using the example of ice cream sellers on a beach. Hotelling (1929) showed that if there was only one seller who owned and operated two ice cream vendors on a beach, these would be placed at the optimum locations in order to cover the entire beach. If on the other hand two different ice cream sellers owned and operated the outlets, they would be located next to each other in the middle of the beach. This is because each seller would seek to not only cover its 'share' of the beach but also potentially take custom away from its rival. This could only be done if it was located at the centre. Although the price of ice cream would be lower, the added distance users of the beach would have to walk would be the cost of having that competition. Given the nature of the product this may be a critical aspect. More crucially, it may also lead to overcrowding in the middle. Whilst the positioning of ice cream vendors may appear to have little relevance to transport issues, an identical argument can be applied to bus services. Consider the case illustrated in Figure 7.6.

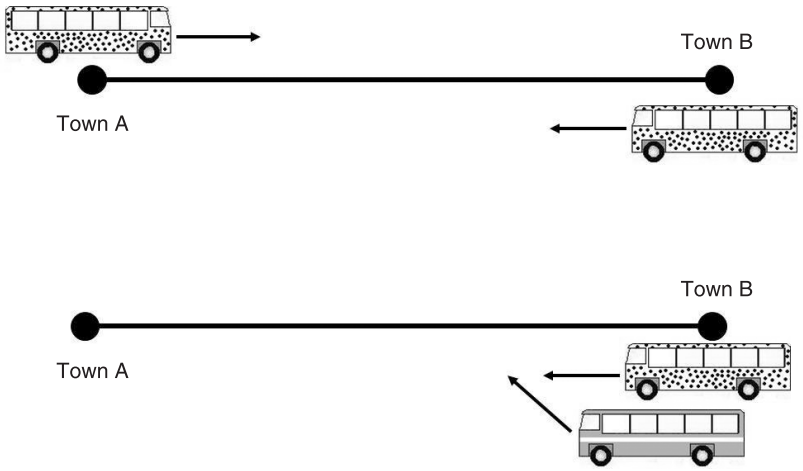

Figure 7.6 *Hotelling's Law applied to buses*

In the upper part of Figure 7.6, say that the Dalmatian Bus company is publicly owned and has a monopoly on the route between Town A and Town B. The time taken between the two towns is 30 minutes, and Dalmatian sends out one bus from A and at the same time one bus from Town B. The service frequency therefore between the two towns would be one bus every 30 minutes. If however in order to introduce competition on this service Dalmatian was privatised and split between Dalmatian Bus and a newly formed rival the Grey Bus Company, the same running pattern is unlikely to be maintained. Whilst Grey Bus 'should' run a service from Town A when Dalmatian sets off from Town B, it is far more likely to run slightly ahead of it. By so doing Grey Bus will attempt to capture all the passengers on the route from Dalmatian. Frequency therefore will have fallen from one bus every half hour to effectively a bus every hour, hence the introduction of competition on the route has halved the frequency of service. This tendency towards a common point of sale is classic Hotelling behaviour. Note also that Dalmatian is likely to retaliate and will reschedule their service to run slightly ahead of Grey Bus. This process is likely to continue and hence the confusion and disruption caused by constant changes in timetables will represent a further deterioration in the standard of service provided.

The theory of contestability (Baumol, 1982)

William Baumol in his *American Economic Review* article of 1982 (Baumol, 1982) was the first to put forward the notion of the 'contestable market'. What Baumol argued was that it was unnecessary for the market to be in perfect competition in order to produce economically efficient market behaviour, what really mattered was whether the market was contestable or not. If a new entrant could enter the market and compete with the incumbent, then the threat of this potential competition would force the incumbent to act as if under a perfect (or near perfect) market structure. Rather than pursue super-normal profits therefore (i.e. profit maximise), the firm would only seek to achieve normal profits in order to deter market entry. Competitive pressures would thus be supplied by the constant threat of entry that force the firm to behave as if it was in a

competitive market and hence act in an economically efficient manner. If the firm failed to do so, it would become vulnerable to entry by a lower-cost operator that would eventually take the whole market and drive it out of business. This is a particularly attractive concept, particularly given that transport markets tend towards monopoly market structures, and thus the idea of the contestable market may be seen as one way in which the advantages of a monopoly can be gained without the drawbacks.

A perfectly contestable market is said to exist where entry to the market is free and exit is costless, hence no financial barriers to entry exist. It is also argued that there must be no structural barriers to the entry of firms in the long run. As noted above, structural barriers relate to industry conditions that prevent a new entrant competing with existing firms in the market. This particular point however is perhaps debatable, particularly with regard to structural barriers that relate to market conditions. For example, demand conditions in the market may act as a structural barrier to entry, as in basic terms the market simply could not support another major operator. As such, the market would not be contestable. This however appears to miss the whole point of the idea of the contestable market, as the basic premise is not that the monopolist would lose market share to a new entry but rather that the monopolist would lose the whole market to a new entrant. In other words, the market cannot support two firms; thus if truly contestable the threat is that a new entrant would take the whole market from the existing operator. On their own, therefore, structural barriers would not appear to be a barrier to the contestable market. The financial risk involved in such a venture however certainly would be, thus the presence of structural market characteristics considerably increases the financial risks associated with market entry.

The same argument however would not apply to strategic barriers to entry. Where strategic barriers exist, then this does act as a clear barrier to the contestable market. Thus, for example, the branding of airline services would make it far more difficult for a new entrant to gain customers from an established firm, and hence the incumbent's position would be far more secure and the contestability of the market significantly reduced.

Pulling all of these ideas and assumptions together, the market position of the perfectly contestable market firm can be illustrated graphically.

The basis of Figure 7.7 is Figure 7.2 above which compared perfect competition with monopoly. In this case, however, if all of the assumptions of the contestable market fully apply to the monopolist then the firm will not pursue a strategy that profit maximises at output level Q_M with the associated market price of P_M. Rather, it will act like the perfectly competitive firm and set the output level at Q_{CM} with the associated price of P_{CM}. This would therefore map directly onto the position of the perfectly competitive firm illustrated in Figure 7.2 above.

In simple terms, however, very few truly contestable markets exist in practice as the assumptions of the contestable market are highly restrictive, particularly those relating to zero entry and exit barriers. Like perfect competition, the assumptions are virtually impossible to find in reality. Low-cost airlines are said to be near such a model of competition, as aircraft can be leased on entry and returned to the leasing company on exit, hence significantly reducing the entry and exit costs. Whilst that may overcome the major financial entry barrier, others still remain with regard to the availability and attractiveness of airport landing slots and various other factors concerning the infrastructure. Even in such a market, therefore, there will always be a cost associated with market entry and exit.[1] In reality, therefore, a monopolist in a potentially contestable market will set its

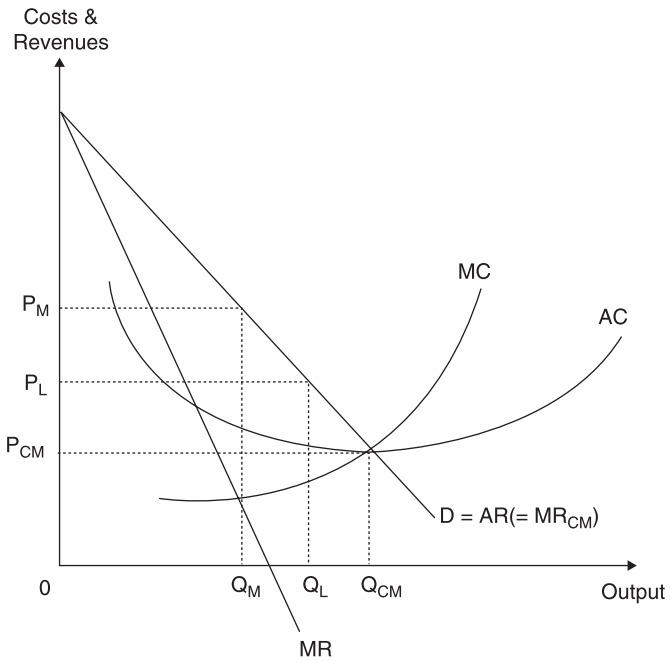

Figure 7.7 *Pricing and output levels in the contestable market*

level of output somewhere between Q_M and Q_{CM} dependent upon the level of barriers to entry. In order to illustrate this idea, a Q_L level of output has been added to Figure 7.7. If entry and exit barriers are relatively low, then this would indicate that the market is highly contestable and the output level Q_L will tend towards the perfectly competitive market position of Q_{CM}. If entry barriers are relatively high, however, then the contestability of the market is severely compromised and the firm's output level will tend towards the monopolist position of Q_M. This is Bain's idea of a limit price (Bain, 1956), where the firm will not set a price that maximises profits but rather set the price at a level that will deter market entry. The extent to which the limit price P_L deviates from the perfectly competitive market price of P_{CM} will be directly related to the scale of entry and exit barriers. In most situations, however, some degree of abnormal profits will still be achieved and maintained in the long run due to such barriers.

Another important aspect of contestable markets is that they are said to suffer from hit and run entry. If the full assumptions of contestability are met, then with a zero entry and exit cost firms can enter the market and cream off abnormal profits while they are available and then exit the industry when market conditions tighten up and eradicate such profits. This is because if incumbent firms restrict market capacity in order to maintain prices at a level that produces abnormal profits, new firms can easily enter the industry in pursuit of the profits being made. Following entry, however, established firms will be forced to protect market positions by lowering prices and driving new firms out (at a zero exit cost to the exiting firm) to re-establish their former market dominance. Related to hit and run entry, contestable markets are also said to suffer from cherry-picking. This is where the new entrant rather than entering the whole market will only enter those segments where the highest returns are to be made. This is particularly true in service

industries, such as transport markets, where there are clear market divisors that allow such market behaviour to take place.

Whilst low cost airlines were said to be a possible example of a contestable market, another example from the transport industries would be the bus market. There is, for example, nothing, in theory at least, stopping one firm entering a given city and competing with the incumbent operator. This is further reinforced by the fact that one of the criticisms of privatisation of the industry in Britain was that many firms cherry-picked, which created a situation of intense competition on the most attractive corridors and a complete dearth of services on the less attractive routes. As regards the British market, however, in the current climate the fear of retaliatory action may act as a significant barrier to market entry. Stagecoach for example would be unlikely to enter the Bristol bus market in direct competition to First for fear of retaliatory action by First entering one of Stagecoach's strongholds, such as Newcastle. This is something akin to the view that in a price war, all are losers. Where a 'stand alone' operator may dominate the market, however, as is the case in Edinburgh with Lothian Buses and Nottingham with Nottingham City Transport, the incumbent faces quite a different situation. This is almost solely because retaliatory action against an established new entrant is virtually impossible, hence those bus markets can be viewed as being contestable. That said, such market entry can only be pursued by firms of a size to 'take on' the incumbent, as was the case with First's intrusion into the Edinburgh market in 2002/3. Nevertheless, despite Lothian's successful repelling of First's intrusion, the Edinburgh bus market and others like it remain potentially contestable markets, which in part regulates the incumbent's market behaviour. It is thus perhaps no surprise that Lothian buses have won the industry-sponsored 'Bus Operator of the Year' award in 2002, 2003 and 2007!

A final consequence of contestable markets highlighted here is that contestability may affect the strategy of the company. In a more general sense, Microsoft are said to defend their monopoly position in the provision of operating systems for computers on the basis of a contestable market – the costs of entry are very low, all that is required is a personal computer (Rodda, 2001). This however raises an important aspect of contestable markets, as the counter argument to such a claim is the market behaviour of Microsoft. The market actions of Microsoft will be to maintain its market position through acquisition, hence establishing strategic barriers to entry. Thus if any rival firm was to gain a technological advantage it may then become vulnerable to a take-over by Microsoft. The strong market position and financial resources of Microsoft would allow them to make the new entrant an offer that the directors of the company simply could not refuse. The extent to which the market is truly contestable therefore is highly questionable, as the strong market position of Microsoft effectively allows it to quash any potential competition without resorting to illegal measures (such as predatory pricing). This highlights the more general point that in such markets the incumbent will act to make the market less contestable, through tightening up the market. It may also seek to gain over-capacity, and hence in the event of market entry it could very quickly flood the market and thereby drive down the price. This would almost immediately eradicate any profit opportunities available to the new entrant and result in their market exit. Directly with respect to transport markets, this over-capacity may take the form of over-coverage of the market served in order to ensure no gaps from which any potential rival could get a foothold in the market.

The importance of contestable markets in the analysis of transport markets cannot be over-stressed. As should be realised from the analysis of the advantages of the monopoly market

position, many of these apply to transport markets, particularly the ideas of natural (local) monopolies and the eradication of wasteful competition. The ideas behind contestable markets have been applied almost universally in transport markets as an alternative to the free market position in an attempt to capture these advantages without the drawbacks normally associated with monopolistic market structures. Nevertheless, there can be some confusion regarding contestable markets. This usually arises from the misconception that a contestable market is one that is only imposed by an authority that 'awards' the market to a particular operator for a period of time based upon some form of tender. This however is contestability through regulation, which by and large is how it has been introduced into transport markets and is more commonly known as Demsetz competition. What has been outlined here, however, is a free market solution, i.e. one devoid of regulation and working entirely along market principles. Nevertheless, most contestable transport markets are through regulation, a topic that will be taken up further in Chapter 10.

Whilst the analysis above has detailed reasons as to why the airline sector may not display the characteristics of the pure contestable market there is a view (Button, 2006) that the sector has become more contestable in recent years, i.e. firms within the industry have increasingly moved away from Q_M and more towards Q_{CM} on Figure 7.7. The main arguments of this view are briefly summarised in Case study 7.1.

Case study 7.1 Contestability and the airline sector

Within the airline sector there are a number of factors that have changed or are in the process of changing that suggest that the sector has become or is becoming more contestable. Specifically, these are:

- Control over landing slots is becoming less of an issue for a number of reasons. Firstly, landing slots have become available with the demise of certain airlines, most notably Sabena. Secondly, there has been a growth in the use of less congested regional airports which represents competition to the major hub airports such as Heathrow. An example of this is the growth in passenger numbers at Stansted, Luton and East Midlands providing competition to Heathrow on certain European routes, with operators such as Ryanair and easyJet.
- The internet has provided an important source of detail to potential passengers in terms of flights, prices etc which was previously only in the domain of travel agents. Thus websites such as www.expedia.co.uk, or the airline's own website, have considerably expanded access to information regarding the price and frequency of flights. As a consequence of this more readily available service information, this has proved less of a barrier in terms of new airlines entering a particular route.
- The frequent flyer initiative, which was a mechanism used by airlines to tie passengers into using their services, is now less of a benefit to passengers than it has been in the past because the savings to be made on low cost fares in many cases more than offsets the free air miles.

- The growth in low cost carriers such as bmibaby, easyJet and Ryanair along the principles of operation outlined in Case study 5.2 have illustrated that it is possible to enter and compete with incumbent operators. In some cases this has even resulted in incumbents being driven out of particular market sectors, as exemplified by British Airways 'sale' of its regional airline, BA Connect, to low cost carrier Flybe in 2007. This effectively resulted in the termination of all previous BA Connect services.

Whilst it is difficult to give any real world examples of perfectly contestable markets, not least because most markets experience sunk costs, it is more realistic to imagine an industry approaching perfect contestability. Whilst there are clearly barriers to entering the airline sector, not least in terms of the restrictions on landing slots, the role of the travel agent and the frequent flier initiative, there are signs that the sector is becoming more contestable.

OLIGOPOLY

To this point we have outlined the two most extreme positions of competition: perfect competition where the level of competition is at its maximum and monopoly where absolutely no competition exists at all. In most market-based situations, however, particularly within transport industries, some form of competition exists. Indeed the market structure of most transport industries would be broadly classified as either oligopoly or tending towards monopoly. The provision of bus services for example in Birmingham is almost entirely the preserve of National Express through its subsidiary National Express West Midlands, and hence constitutes a near monopoly. Similarly, Glasgow is largely dominated by First Glasgow, but some competition on the key radial routes comes from Stagecoach. This latter market would constitute an oligopoly (or duopoly to be exact), albeit one dominated by a single operator.

Oligopolies however are difficult to define. Unlike the first two market structures which were quite straightforward from a theoretical perspective, i.e. came to definitive answers, oligopoly tends to be one of the more messy pieces of economic theory. This conclusion can be drawn because whilst there is only one type of perfect competition 'model' and one type of monopoly 'model', there exist different theories or different forms of oligopoly. This is because the theory largely involves two or more firms, thus market structure is not only dependent upon the number of firms in the industry but also how they react to each other's market behaviour. In this section we will simply outline the basic ideas behind oligopoly most applicable to transport markets, beginning with the common characteristics of an oligopolistic market.

Basic assumptions of oligopoly

As highlighted above, oligopoly lies somewhere between perfect competition and monopoly if assessed on the basis of a scale of competitiveness in the market. Nevertheless, it is undoubtedly far closer to monopoly than perfect competition, as the number of competitors tends to be small in number and barriers to entry high. Virtually all public transport markets would therefore probably be classified as an oligopoly. The underlying general assumptions of oligopoly are:

1. Few sellers, many buyers

In an oligopoly market, there exist few sellers and many buyers. The main implication from this assumption is that when making market conduct decisions such as the pricing of fares or the level of service to provide, firms will take into account rivals' likely reactions to their market conduct. This contrasts both with perfect competition, where there are so many other sellers in the market place that the firm cannot take such actions into account, and monopoly, where there are simply no other firms in the industry to take into account.

2. Barriers to entry are significant

With significant barriers to entry such as those outlined above, firms within the industry have a degree of protection from new entrants. When considering market conduct decisions, therefore, little account needs to be taken of any potential competition that may enter the market. Contestability of the market is thus limited.

3. Non price competition

Where there are very few sellers, price wars tend to damage all firms in the industry and benefit none. This is something that we saw in Exercise 6.1. What tends to happen under oligopoly therefore is that firms compete on factors other than price, thus all charge similar prices but differentiate the product or service that is offered. This has led to the development of the idea of the kinked demand curve (Sweezy, 1939), illustrated in Figure 7.8.

At the market price P_O, the firm's demand curve is kinked at point b, which in reality is the intersection point of two different demand curves. These in turn represent different reactions from rivals to a firm's change in price. The demand curve D_E represents relatively more elastic demand, whilst D_I is relatively more inelastic. The basic theory is that if a firm was to increase its

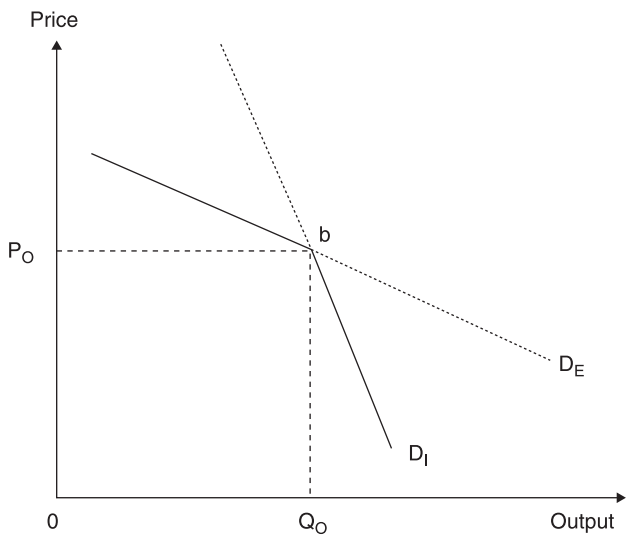

Figure 7.8 *The kinked demand curve*

price from P_O, demand would follow the path of D_E. This is because it is assumed that no other firm will follow suit in increasing prices, hence the firm will be alone and experience a substantial drop in quantity demanded. Some consumers will be retained due to brand loyalty; however, many will switch to what are now less expensive rival products. As demand is relatively elastic, then any increase in price will actually lead to a decrease in total revenue, hence there is little incentive to take such actions.

If, on the other hand, the firm was to cut its price, the theory is that other firms will follow suit for fear of losing market share. Demand would therefore follow the demand curve D_I. Although the lower price will encourage more consumers to purchase the product, because other firms have matched any price reductions these 'new' consumers will be the only increase in the quantity demanded for the individual firm's product. The firm's demand curve is therefore kinked at the market price of P_O.

The inevitable conclusion of the theory of the kinked demand curve is that all firms will charge the same price and thus not compete on the basis of price. What the kinked demand curve does not explain however is how the price came to be at that level in the first place. This is normally assumed to be set by some form of price leader, which would be a company that either has an ultimate cost advantage (hence could eradicate the competition if necessary) or one that has a very large market presence. Under such a scenario, the market leader sets the price and all other firms follow suit.

What the kinked demand curve leads to is non price competition normally based upon product differentiation. Other forms of non price competition exist, however, most notably company acquisitions and mergers; such actions are taken in order to gain a positional market advantage over a rival operator.

Note finally however that whilst non price competition is generally regarded as a characteristic of oligopolistic markets, not all forms of oligopoly operate on this basis. Some oligopolistic markets have pretty vicious price competition, the parcels market being a case in point. Energy providers are the same, where most compete on the price paid for electricity and gas and few on the actual service provided, which becomes particularly critical if things should go wrong. Oligopoly models of market structure therefore can normally be divided between price and non price competition forms.

4. Product differentiation

Unlike perfect competition, where all firms sell the same product, or monopoly, where only one product is sold, under oligopoly there exists a degree of product differentiation. This differentiation can take the form of differences in the frequency of service patterns, the flexibility of the tickets sold, the role of special offers and even the company's market position. As noted above, this can be one of the main bases of competing with rivals. The other main consequence of product differentiation however is that firms in their market conduct decisions can expect a degree of brand loyalty to exist.

This aspect of oligopoly however is where the theory begins to become 'messy'. In reality, in many oligopoly markets there is no difference in the products that are marketed, i.e. there is no product differentiation! One such classic example we saw in Chapter 4 is the petrol market, where what you put in your tank is an identical product whether it is Shell, Esso, BP, Morrison's, or

Sainsbury's. Bus and airline journeys are exactly the same, where the basic products offered are fundamentally the same. Coke (the drinking kind!) is exactly the same – it's black, fizzy and bad for your teeth! These however are all examples of oligopolistic markets. The important characteristic therefore is not actual product differentiation but rather perceived product differences, and hence in turn what becomes important under oligopoly is advertising and branding. Through advertising, firms build up a perception of differences in competing products and thereby build up brand loyalty. This gives the firm a degree of power over the market and hence more flexibility in setting the price.

5. Tacit collusion

Oligopolistic industries are said to experience what is known as tacit collusion. Tacit collusion means there is a hidden degree of co-operation. This does not mean hidden from regulatory authorities, etc, but rather that under such a market structure there is a strong incentive for firms, to a certain extent, to co-operate rather than compete with each other. Under oligopoly, in an ideal situation firms should fully co-operate and take decisions as a single group of companies. This is what would be known as a cartel, which would enable firms in an oligopoly to act like a monopolist and hence maximise the profits of all. This is where the OPEC countries were highly successful in increasing the price of oil in the mid and late 1970s. Such actions however are anti-competitive and illegal under European Union competition laws. Tacit collusion however does not refer to such illegal 'active' co-operation but rather to unspoken or 'passive' co-operation where it makes sense for firms to relax competitive pressures against each other in certain situations. The bus industry in Britain is a very good example of this, where the period of intense competition (the bus wars) was followed by consolidation and the emergence of three large operators. In many bus markets it made economic sense for these firms to not compete intensively with each other, as once firms became established price wars became far more detrimental than they had been before, e.g. damaged profits rather than eradicate the competition. Furthermore, certain bus 'territories' were ceded to rival operators through market withdrawals, in order to allow concentration on the 'home' markets without the distraction of potentially damaging competition. Under such a scenario, all the major firms benefited, hence the idea of 'tacit' collusion.

The market position of the oligopoly firm

Using these assumptions, we can construct the oligopoly market position. Rather than produce a further simple variation of Figures 6.1 and 7.1 (which would be appropriate for an oligopolistic market based on price competition), Figure 7.9 shows the position for a non price competition oligopoly. Thus the market demand curve is kinked at the market price, P_O. Under oligopoly, whilst there is a degree of consumer loyalty, the firm faces a downward sloping demand curve from left to right; however, this is kinked at the market price, being more inelastic below the market price than above. As with a monopoly, however, in order to sell more units in any given time period the firm must sell all products at a lower price, hence at each level of output MR < AR (although we will relax this assumption in Chapter 8), and this again is kinked (or broken) at the market price. Costs behave as before.

Our overriding assumption of firms behaving as profit maximisers still applies, hence the firm

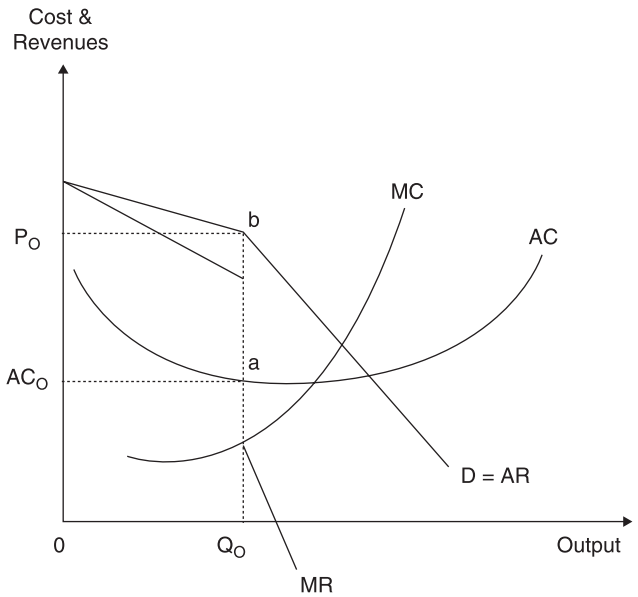

Figure 7.9 *Profit maximisation position of the non price competition oligopolistic firm*

produces at that level where MC = MR. In Figure 7.9, this is at output level Q_O, which gives an average cost of AC_O and a price of P_O. Note that at this level of output the firm is not only making abnormal profits of AC_O, P_O, b, a, but also is not producing at the lowest point on the average cost curve as AC_O is above the MES point. As with monopoly, it is therefore not economically efficient. Furthermore, this will be the long run position, as oligopolistic markets, similar to monopolies, have significant barriers to entry which prevent new firms entering the market and competing away abnormal profits.

This is the basic neo-classical position, in which the firm sets the output level at the profit maximising position, and then charges a price that the market will bear (as shown by the demand curve). Note however that the firm influences the market primarily through its output level supplied to the market, and that by restricting output it can increase price.

The process of competition in oligopolistic markets

Whilst neo-classical theory tells us of different market structures and the form of market behaviour that may be expected, in most cases it falls short of giving an explanation as to how such market structures come about. For this we need to consider the process of competition. This is particularly pertinent in the case of transport markets, as most tend to evolve over time towards an oligopolistic structure even where the 'design' had been to attempt to produce a competitive industry. An early example of this was the US Deregulation Act 1978, which removed price and capacity controls from all US domestic airline services. Following the passing of the Act, there followed an intense period of merger and acquisition activity, from which emerged eight large dominant operators and the complete control of particular airports (or hubs) by a single operator. This whole process was almost exactly repeated seven years later with the UK Transport Act 1985,

which removed price and capacity controls from all British bus services and led to an intense period of acquisition and merger activity, out of which eventually emerged three dominant operators and the (virtual) complete control of particular areas of the country. This took place against a backdrop of competitive authorities with a remit from government to install and maintain a competitive bus industry. Many other transport industries appear set to follow the same pattern, with for example rail operations within Britain experiencing a significant reduction in franchise holders since privatisation in 1997 and European airline reforms producing some merger and alliance activity amongst the major European airlines, the most notable being the purchase of KLM by Air France in 2004.

This aspect of anti-competitive market structures is a major concern in the reform of public transport markets and one for which there appears to be no answer. Much academic, practitioner and policy advisory thought has gone into this issue and has not yet provided a definitive solution. Here we attempt to explain why this type of market behaviour should happen by combining a number of different theoretical perspectives that go beyond the neo-classical theory of the firm. The main basis is provided by Downie's little-known theory of the competitive process (Downie, 1958). This theory examines the competitive process over time and is primarily based upon the ethos of the survival of the fittest, the 'fittest' in this case being the most efficient firms. Further theoretical perspectives of oligopoly and economic theories of managerial enterprise are also introduced in an attempt to explain transport markets' tendency towards supply side consolidation. You should carefully note however that oligopoly theory has many different variants, thus what is presented is only one possible theoretical perspective/framework from which this process could be viewed.

Figure 7.10 attempts to outline the basic process of Downie-type competition over four time periods. Beginning in the first period there are five bus companies all competing in the market. Due to the geographical nature of bus operations, direct competition involving all five seldom occurs, with most competing in different combinations of two's and three's in different parts of the country. In Figure 7.10, in each time period the five companies are always arranged in

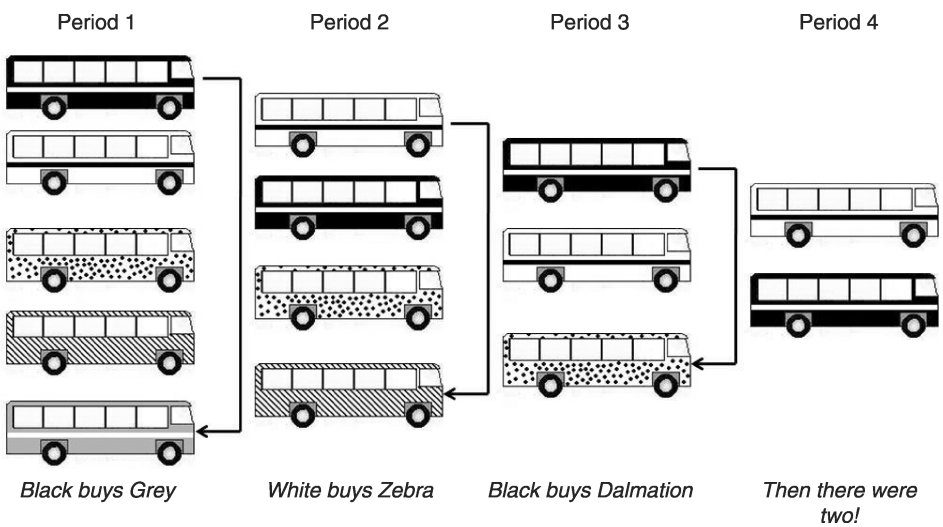

Figure 7.10 *Downie competitive process applied to buses*

efficiency order, thus in time frame 1 Black Bus is the most efficient and Grey the least. Due to its relative inefficiency, Grey is not fulfilling its full market potential, providing the owners, either in the form of shareholders or private investors, with a level of returns or dividends that are smaller than they could be. As a consequence, in the case of a listed company its stock market value to asset base ratio would fall and hence it becomes vulnerable to a takeover. With a privately controlled firm, if returns are less than they could be then the opportunity cost of being in the bus business is rising, i.e. better things could be done with the funds invested. As Grey continues to underperform, therefore, it will ultimately be acquired by another company, in this case the most efficient firm, Black Bus. As a result in the second time frame there are now only four bus companies, with Black Bus now slipping to second in the efficiency rankings due to its purchase of the inefficient Grey, which results in a larger but less efficient company. White Bus are thus now the most efficient, with Zebra the least. In a similar cycle to period one, Zebra now becomes vulnerable to a takeover, which is completed when White buys it. This reduces the competition down to three in the third time frame, but Black Bus has now again become the most efficient as it integrates and rationalises the operations of Grey in the enlarged 'Big Black' bus company. It now buys the least efficient firm in the industry, Dalmatian, and hence in the final period there are only two bus companies left competing in the market. This motivation to purchase other companies is primarily driven by the desire for growth in the market, a view consistent with Baumol's idea of revenue maximisation (Baumol, 1959), and similar to Williamson's Theory of Managerial Enterprise (Williamson, 1963), which also puts growth, albeit through internal company expansion, as a prime motivation of both managers and investors.

Note in the Downie model of competition rather than the industry becoming less efficient as it consolidates over time (which would be consistent with neo-classical theory), it is actually becoming more efficient as the operations of the less efficient firms are rationalised and taken over by the more efficient ones. Note also that this is more likely to occur in markets where there is wasteful competition, as these operations can be easily consolidated in the enlarged company and hence the efficiency of both improved.

A further development of the theory is that efficiency improvements will be spread into other industries through horizontal acquisitions as the most efficient firms in this industry take over the less efficient firms in other industries. This is likely to occur once all possibilities of industry expansion have been exhausted. Thus in period 5, Black Bus may purchase a train operator, and hence transform into the Black Group with operations in different aspects of public transport markets. Note also that as the definition in terms of size of the market changes, for example from a national to an international level, further mergers and consolidations are likely to occur across national boundaries. Expanding or opening up the market, therefore, rather than leading to more competition, simply changes the level at which competition takes place, thus at the local level competition may well be lost.

This is almost exactly what happened within the British bus market in the period following deregulation, as mergers and acquisitions took place at a national level, efficiency within the industry improved and competition at the local level declined (Cowie, 2002). The inevitable conclusion from such a model is that competition based purely on market forces is unattainable, as ultimately in the medium to longer term this will lead through mergers to an oligopolistic market structure. Prices will be higher and capacity levels lower, and hence the market no longer regulates itself, requiring some form of external control in order to attain economic efficiency.

All of these issues are explored further in Case study 7.2, which examines the impacts of reforms in the British bus industry and in particular the issues arising out of moving an industry from a publicly owned monopoly to a privately owned competitive industry.

Case study 7.2 The British bus industry

This case study takes an extensive look at the British bus industry over the last thirty years. Whilst one of the longer cases in the book, the British bus industry over the period reviewed provides an interesting study of changing market structures, competition levels, competitive processes, ownership issues and regulatory failures, and underpins many of the key issues examined in not only this but other chapters. Although covering a thirty-year period, the case is not intended to be a lesson in economic history, but rather an examination of reform in public transport markets, a subject that remains an on-going issue today and one that we return to in Chapter 10.

Until the industry reforms of the early 1980s, the provision of bus services in Britain had been largely governed by the rules and regulations laid down by the Traffic and Transport Act 1933. That Act regulated all bus services with regard to market entry, the level of service frequency and the fare charged, as well as qualitative regulation regarding driver behaviour, operators' licences and the standard of the vehicles used.

The structure of the supply side of the industry was effectively a state-controlled monopoly, with all major bus companies publicly owned, with very few private operators on staged services. Two national operators existed, the National Bus Company (NBC) covering England and Wales and the considerably smaller Scottish Bus Group (SBG) in Scotland. These companies operated services in outlying areas and the smaller towns as well as inter-city bus services between the major centres of population. In addition to the two national operators, there were over 70 local-authority-run bus operators, which in most cases were provided as a function of the local administration, i.e. a local authority department. All of these operators had exclusive rights to operate in their respective towns and cities, while the NBC and SBG had exclusive rights to operate everywhere else. There was very little direct competition except on the main radial routes into the main towns and cities, but even here the intensity of that competition was low, with each operator having its own distinctive remit. Prices and frequencies were strictly controlled, thus the two main mechanisms by which to effectively compete were nullified.

With the coming to power of the Conservatives under Margaret Thatcher in 1979, this situation dramatically changed. Thatcher and her deputies encompassed the economic beliefs of Milton Friedman and what became known more generally as 'New Right' ideologies. At the very heart of this ideology is the belief in the power of the market to find the optimal solution to produce economic efficiency, equity and general well being – exactly the issues that have been examined in this and previous chapters. 'Non-staged' express routes, i.e. town-to-town, were deregulated by the Transport Act 1980. This removed all economic regulation from the long-distance bus market, thus any operator was free to compete with the NBC and SBG on these routes and charge whatever price they wished. This Act in itself was wholly successful, with increased patronage, reduced prices and a significantly increased network of cross-country bus services.

Following that success, the Transport Act 1985 took the issue considerably further. The main problems perceived with the bus industry at the time were a long-term decline in patronage, rising costs and considerable increases in subsidy. In an attempt to reverse these trends, the 1985 Act removed all economic regulation (i.e. price and capacity constraints) from staged services throughout the country except in London, reform of which we examine in Chapter 10. Outside of London, the Act re-organised the supply side of the market, resulting in the creation of around 150 new bus companies. The NBC was divided into 72 regionally based operators and the SBG into nine. These were sold to the private sector in the form of a share issue (for National Express) and private sales, either to the existing management of the company or to existing bus companies such as Stagecoach. In order to encourage and maintain competition, sales were restricted to no more than 3 NBC subsidiaries and 2 SBG subsidiaries to any single buyer.

The 1985 Act also required local authorities to organisationally separate their bus operations from the authority. Bus operations were to be set up at 'arm's length' to the local authority, initially as wholly owned private limited companies, which in simple terms means a complete organisational separation from the authority. They were to no longer receive direct subsidy, as most had run at a loss with the authority making up the net difference at the end of the year. These new companies were expected to operate at a profit and be driven primarily by the profit motive. Most were then sold to the private sector from 1986 onwards, with the last of the majority of sales being in 1995.

Local authority powers in the planning and control of bus routes was thus severely limited. Before the 1985 Act, local authorities acted as a single authority in the planning and operation of services in their respective areas, as well as dictating the fares to be charged and making up any losses by a lump sum payment. After the 1985 Act these powers were severely restricted and the planning and operating functions transferred to the private sector. Local authorities' only function under the new structure was to specify individual services not already provided by the free market on the grounds of a social necessity. These would then be put out to competitive tender. Bus companies would lodge bids to run the service for a given amount of subsidy over a period of time, hence where competition in the market was not possible, competition for the market was introduced, i.e. contestability through regulation, or what is more commonly known as Demsetz competition.

Finally, unlike other privatisations, there was to be no industry regulator. It was felt that the existing regulatory competition agencies, in the form of the Monopolies and Mergers Commission (now the Competition Commission) and the Office for Fair Trading, would be able to handle all regulatory issues arising from the industry.

The important part in this whole case study is to consider the rationale behind these industry reforms, as these are the lasting issues that continue to this day. The rationale was almost exclusively based on the premise of the power of competition, with the 'vision' being of a bus industry made up of a large number of small- to medium-sized operators. Many of these would be managed by the owners themselves, i.e. would be owner-controlled firms, which in part reflected the times – this was the 1980s, apart from many other things, a time where there was a strong belief in the entrepreneurial spirit. Bus companies would compete with each other in order to better meet the needs of passengers in terms of price, quality and the overall standard of the service provided. This view is very much in line with the theory outlined in this and the previous

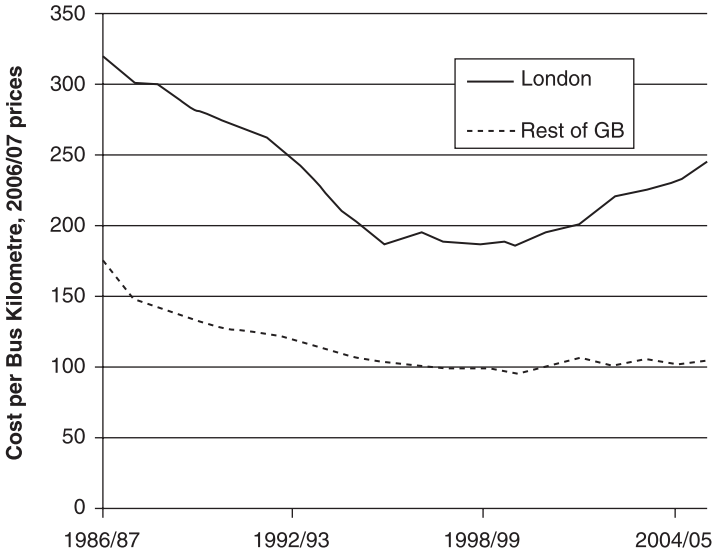

Figure 7.11 *Cost per bus kilometre, 1986/87 to 2005/06, constant 2006/07 prices*

Source: Compiled from DfT Statistics

chapter, where effectively the reforms moved the industry from a tightly controlled monopoly to one of a highly competitive industry. Consistent with the theory, therefore, costs would be expected to fall, supply and patronage increase and the need for subsidy outside of socially necessary services would be eradicated. Not only that, but there were also ownership aspects, not covered until Chapter 10, which surrounded the issue of public v private ownership. In this context the main concern related to costs, where the belief was that the private sector would be better able to control costs through the profit motive than the public sector had managed under a public interest motive. Note an important deviation from the theory outlined above; this is not about forcing firms to produce at the lowest point on the average cost curve (as with perfect competition), but rather a lowering of the whole average cost curve itself. This is consistent with the views of Harvey Leibenstein and his idea of X-inefficiency (Leibenstein, 1966) outlined in the main text, hence average costs may be higher than they should be due to general management slack and a lack of incentives in public sector companies.

What happened after 1985?

All bus services outside of London were de-regulated on 23 October 1986, known at the time somewhat unimaginatively as 'D' day. This caused massive disruption in most major cities, with Glasgow suffering particularly badly as the streets were swamped by buses of various vintages. There then followed the period of what became known as 'the bus wars', where some cut-throat competition took place in order to gain market share. One of the worst examples of this occurred in Darlington, where the local authority bus company was driven out of business by a rival operator after the authority had announced a preferred buyer for its bus company. The Monopolies and Mergers and Mergers Commission report (MMC, 1995) into wider issues concerning bus services in the north east, found that the experiences of the worst elements of the

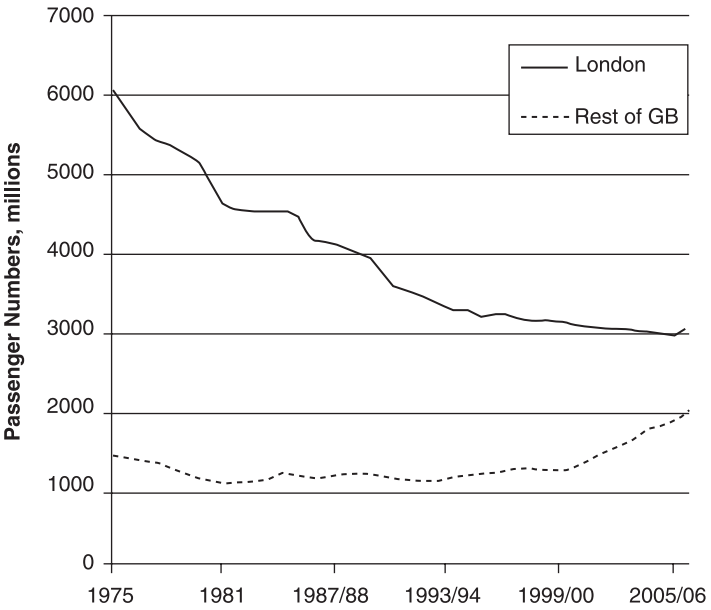

Figure 7.12 *Bus patronage, 1975 to 2006/07*

Source: Compiled from DfT Statistics

bus wars in Darlington to be predatory, deplorable and against the public interest. This is just one example, but the bus wars period included constant changes in timetables (i.e. classic Hotelling behaviour), wasteful competition in the form of duplication of well-served routes, the withdrawal of rural services, dangerous driving behaviour and some dubious business practices. Although significantly reducing costs and subsidy, the privatisation/de-regulation measures failed to stem the decline of passenger numbers, and with rising prices and the creation of considerable confusion of bus services, the downward spiral continued unchecked. For illustrative purposes, Figures 7.11–7.14 show the trends in four key indicators, namely the cost per bus kilometre, bus patronage, bus kilometres and bus fares in real terms, over the period 1995 to 2005/06. This unsatisfactory period for the bus industry came to an end with the emergence, through acquisition, of four major operators, Firstbus, Arriva, Stagecoach and Go Ahead. These bus companies now dominate the market, with around 70 per cent of passenger revenue in the staged bus market. What has emerged is now a series of territories, where one bus company dominates in one area with limited competition from another. In many cases these markets constitute local monopolies and certainly are far removed from the planned highly competitive market perceived by the 1985 Act. As stated earlier in the chapter, this need not necessarily be a 'bad' thing as long as the market is contestable; however, these markets are neither competitive nor contestable.

Whilst painting a very negative picture of the bus industry in Britain, it is not all bad news. Whilst companies were expanding through merger and acquisition, company growth as such could be gained relatively easily. Opportunities for growth in firm size through such measures however are now severely limited and companies have to examine other methods of maintaining

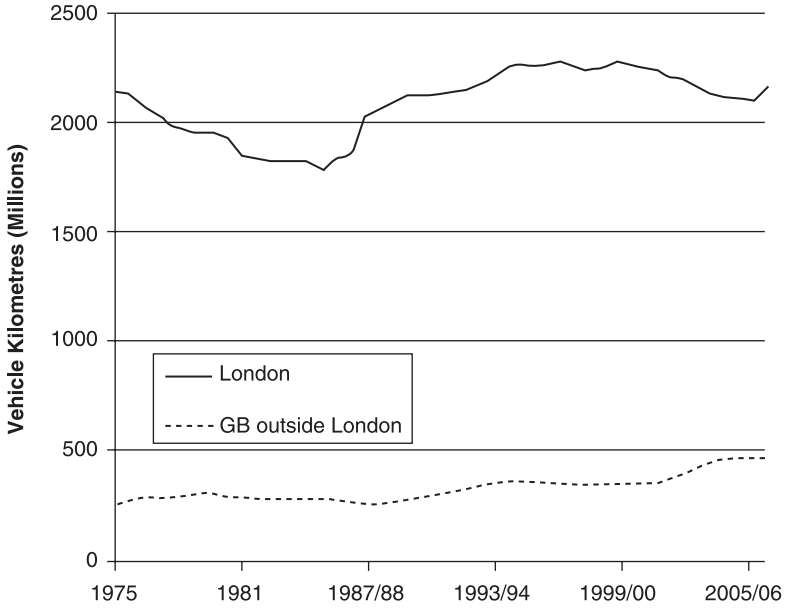

Figure 7.13 *Bus kilometres, 1975 to 2006/07*

Source: Compiled from DfT Statistics

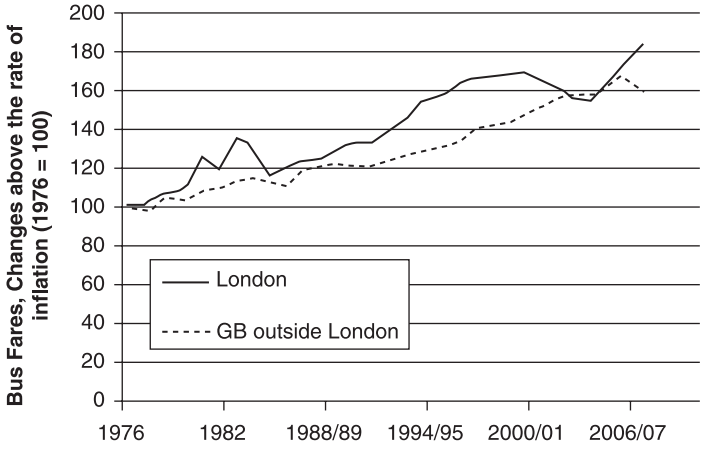

Figure 7.14 *Bus fare increase in real terms, 1976 to 2006/07*

Source: Compiled from DfT Statistics

and increasing market share, i.e. more focus on the consumer. Some success has been achieved with bus quality partnerships, where the local authority agrees to install bus priority measures such as bus lanes and generally improve the infrastructure (bus stops, bus stations, real time passenger information etc.). The company in return agrees to invest in new buses and provide an overall higher quality of service. The second positive issue to arise is increased investment, where fleet average ages have fallen considerably in recent years. It is also worth stressing that

higher prices need not necessarily be a 'bad' thing if they allow operators to fund investments out of profits. What is also positive is that in year 2006/7 patronage actually rose for bus transport outside of London for the first time in almost 40 years.

In more recent times, bus costs have begun to rise again. This once more would be consistent with the theory outlined above, as the industry has become far less competitive. Property rights theories, however (Parker, 1994), would suggest that because all of the major operators are Stock Market listed, this on its own should apply strong downward pressure on costs. This pressure is applied through the needs of the Stock Market for reasonable financial returns in the form of dividends and strong company growth. These basically replace direct competitive forces in the market. Cowie (2008) however suggests that rather than supply side measures driving such factors, it is now demand side factors that have a far larger influence. Major social change, in particular rising real incomes and increased general affluence, mean that today's bus users demand a far higher quality of service than their predecessors of 20 or 30 years ago, and this in simple terms is more costly to provide.

Reflection

Bus deregulation occurred in 1986; however, the 1985 Act remains as the main piece of legislation overseeing the supply of bus services in Great Britain today. What however went wrong, and why was the industry structure that the reforms intended to create not actually achieved? In some ways it actually was, in the form of the bus wars, a period of low investment and intense competition. The problem however is that the market is not perfectly competitive, particularly with regard to an homogenous product, hence whilst low price services may be achievable using vintage bus stock, this is not really what the consumer wants. Furthermore, whilst there is mixed evidence regarding economies of scale, with Cole (2004) for example arguing that small companies can compete with larger companies by achieving cost savings that larger companies cannot, there does exist economies in carriage. Thus there are cost advantages to larger firms and to a degree certain aspects of the natural monopoly. Furthermore, the competition agencies, most notably the Monopolies and Mergers Commission, failed to prevent the consolidation of the industry, with most problems surrounding the definition of 25 per cent of the market. For example, as a prelude to privatisation bus operations in Bristol were split into two separate entities, Badgerline and Bristol City Line, and sold to two different buyers, hence introducing competition into the Bristol bus market. When Badger however subsequently bid for Bristol City Line (or more exactly, its holding company), this would have effectively eradicated the competition in Bristol and far exceeded the 25 per cent market threshold. In the subsequent investigation, however, the market was defined on a British scale, hence the enlarged Badger would still have considerably less than 25 per cent of the total British market. As a result, the merger was allowed to proceed. This gave Badgerline a strong base from which to compete on a national scale, which it did highly successfully through its merger with Grampian Regional Transport based in Aberdeen to form FirstBus.

Far more is understood today about the wider aspects of bus operation economics and the effects of removing all forms of economic regulation, i.e. price and capacity controls, from the market. Most reforms now tend to introduce Demsetz competition for the market with only limited cases of direct competition in the market. The British market is still extensively studied today as an example of bus reform, both with regard to the short-run impacts and now the longer-term consequences of complete economic deregulation.

As a final point of reflection, it is very easy to forget the problems facing the industry at the time of reform, namely falling patronage, rising costs and rising subsidies, hence the perceived danger today is that re-regulating the industry would bring these aspects back to the forefront.

CHAPTER SUMMARY AND REFLECTION

This chapter has examined imperfect competition in transport markets by introducing the ideas of monopoly and oligopoly. In the course of this, we looked at the drawbacks and advantages of these market structures, and importantly also considered the important idea of the contestable market.

We also saw that most transport markets tend towards these market structures. However, imperfect markets tend towards economic inefficiency, which at a wider level leads to the need to pay higher subsidies for transport operations. In a changing macroeconomic environment, particularly debt issues, governments have no longer been able, or willing, to continually subsidise transport operations based upon an open ended regime. Rather than cut services, however, reform through the introduction of market principles have been introduced into the operation of public transport services. This has not been without its problems, particularly the inevitable tendency for such markets to veer towards imperfect market structures. Open-ended market reforms based upon perfect competition principles therefore would appear to be unattainable, hence some other form of reform is required. This has tended to be based upon Demsetz competition through franchising or bidding for the market, which in turn brings in the need for control of operations in the market through market regulation. These issues are considered further in Chapters 10 and 11.

CHAPTER EXERCISES

Exercise 7.1 Spectrum of competition in British transport industries

Exercise 6.1 asked you to place a number of British transport industries on a spectrum ranging from monopoly on the one hand to perfect competition on the other. In light of this chapter, you may now wish to re-consider some of your placements. Having done so, now

a) Mark roughly on your spectrum that range of oligopoly, placing an upper and a lower boundary on the diagram.
b) Have you re-evaluated any of the criteria you used to come to your original placements?

What have you learned from this exercise?

Exercise 7.2 Barriers to entry in transport markets

For the following transport industries:

- Bus production
- Provision of rail services
- Provision of the rail infrastructure
- Road haulage
- Air services
- Parcels market

Identify the main barriers to entry into each of these markets for a potential market entrant under the headings of structural and strategic barriers. Then place these industries on a scale, where 1 represents the industry with the lowest barriers to entry and 6 the industry with the highest. What does this tell you?

Exercise 7.3 Low cost airlines and the contestable markets

Using a template similar to that laid down in Case study 6.1 in the previous chapter which examined the extent to which road haulage met the conditions of the perfectly competitive market, examine the extent to which you believe that the low cost airline market meets the conditions of the contestable market.

Exercise 7.4 Case study questions

Re-examine Case study 7.2 and then consider the following questions:

a) To what extent do you think that the 'vision' that was foreseen through the 1985 Transport Act meets the conditions of perfect competition?
b) Why was the 'vision' not maintained after deregulation and the industry revert to effectively a series of local monopolies?
c) What is 'different' about the bus industry in Case study 7.1 compared to road haulage in Case study 6.1, which results in competition in one but only limited competition in the other? What therefore can be learned about competition from these case studies?
d) Do you believe that any of the advantages of monopoly apply in this case study?
e) What could be learned from the British experience of bus industry reform to other European and North American countries?