UNIT 7
IMPERFECT COMPETITION

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TEC711S
Unit outline

On reading this unit, 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.
MONOPOLY

• *Definition*--: It is a situation in which a single firm or group, owns all or nearly all of the market for a given type of product or service.

• 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

• Transnamib (Rail service) is a good example of a monopolistic firm in Namibia

• *Note*. 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 therefore, the monopoly profit maximising position is shown on a single graph.

• The monopolist faces a downward sloping demand curve
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.

The firm’s profit maximising level of output is found at QM, where marginal revenue equals marginal cost.

This would produce an average cost of ACM and at that level of output the price charged would be PM.

Notice that the firm is not producing at the lowest point on the average cost curve.

At the profit maximising level of output QM, the monopolist would be making abnormal profits, as shown by the shaded area ACM, PM, b, a.

Unlike perfect competition, abnormal profits would not be competed away in the long run due to the existence of barriers to entry.

In the very long run, as a result of a sustained shift in demand away from the good or service changes may occur.
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. There are two distinctions to barriers to entry which are **Structural** and **Strategic barriers**

**STRUCTURAL BARRIERS**
- **Firm size** – entry related to economies of scale
- **High sunk cost** - A sunk cost is a cost that cannot be redeemed or re-claimed when the firm leaves the market e.g. Channel Tunnel
- **Product differentiation or learners curve** - where a strong brand loyalty is created 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

**STRATEGIC BARRIERS**
- **Legal protection** - e.g. Patent. 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
- **Control of factors of production** - where one company may have all the skilled labour and that knowledge may be protected by some form of covenant
- **Exclusive dealership** - where the manufacturer of a given product may choose to only supply a particular outlet in a given area
- **Branding** - most bus companies were identified with particular regions or areas
Disadvantages of Monopolies

1. **Production inefficiencies** - Where costs are not minimised, production resources are not being used in their best combination. 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.

2. **Higher prices charged and lower output produced** - 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, likewise, the level of supply would be less and the price charged would be higher than if the market was in perfect competition. For example
3. 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.

- For simplicity 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.
- If this market was a monopoly, however, then the area of consumer surplus would reduce to only that shown by area A.
- 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.
- It is also potentially a regressive measure as bus users will include the less well off within society, whilst shareholders will include the better off (division between rich and poor increases).
4. **Net welfare loss**
   - 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. In the figure above, notice that 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.

5. **X-inefficiency**
   - under certain conditions the average and marginal cost curves would be higher than they should be due to general management slack.
   - 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.
   - fear that management under performance would lead to bankruptcy is removed
   - no competition to act as a spur to keep management control tight and hence costs slowly drift upwards
Advantages of monopoly

1. **A higher level of expenditure on research and development** – investment in R&D due to the size of the firm, thus in the very long run monopoly can be economically efficient through technical innovations in production techniques and processes.

2. **Market size - a natural monopoly** – 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.
   - Note from the figure is that the market demand curve, DM, cuts the average cost curve AC before the point of minimum efficiency scale, QMES. 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 firm would be of a significant size to capture most of these economies.
Natural monopoly
3. **Wasteful competition** – It occurs where effectively double or treble the production resources are used to provide a service. This is as a result of economics of carriage which exist where the cost per passenger carried can only be minimised where there is a single operator.

4. **Hotelling’s law (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. Leading to overcrowding.

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**Hotelling’s Law applied to buses**
Consider the case illustrated in Figure above, 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)

Assumptions

• 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
• There must be no structural barriers to the entry of firms in the long run
• There would be no strategic barriers to entry

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.

According to Baumol, he argued 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 (incumbent) 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.
Pricing and output levels in the contestable market

• if all assumptions of contestable market fully apply to the monopolistic firm then the firm should set its price at Pcm and quantity at Qcm rather than being in the preferred price Pm and output Qm. (perfect competition) though unrealistic, Low-cost airlines are said to be near such a model of competition as they can be leased on entry and returned to the leasing company on exit

• In reality, therefore, a monopolist in a potentially contestable market will set its level of output somewhere between QM and QCM dependent upon the level of barriers to entry

• If entry and exit barriers are relatively low, then this would indicate that the market is highly contestable

• If entry barriers are relatively high, however, then the contestability of the market is severely compromised
• Another important aspect of contestable markets is that they are said to suffer from hit and run entry (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)

• contestable markets are also said to suffer from cherry-picking, this is particularly true in service industries. 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
OLIGOPOLY

• The market structure of most transport industries would be broadly classified as either oligopoly or tending towards monopoly.

• oligopoly lies somewhere between perfect competition and monopoly if assessed on the basis of a scale of competitiveness in the market.

• **Definition**: A situation in which a particular market is controlled by a small group of firms. Its just like monopoly, just that instead of control belonging to one firm it is controlled by at least two firms.

**Basic assumptions of oligopoly**

1. Few sellers, many buyers
2. Barriers to entry are significant
3. Product differentiation - what becomes important under oligopoly is advertising and branding
4. Non price competition

The kinked demand curve

- At the market price PO, 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 DE represents relatively more elastic demand, whilst DI is relatively more inelastic. The basic theory is that if a firm was to increase its price from PO, demand would follow the path of DE.
- 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.
5. Tacit collusion (cartel)

• 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
The market position of the oligopoly firm

- Under oligopoly, there is a degree of consumer loyalty, the firm faces a downward sloping demand curve from left to right.
- The market demand curve is kinked at the market price, PO.
- 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 (MR is kinked as well).
- **Profit maximisation**; MC=MR, this is at output level QO, which gives an average cost of ACO and a price of PO. Note that at this level of output the firm is not only making abnormal profits of ACO, PO, b, a, but also is not producing at the lowest point on the average cost curve as ACO is above the MES point.
The process of competition in oligopolistic markets

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. 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. This led to:

Theory of the competitive process by (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.
• Note that this is more likely to occur in markets where there is wasteful competition
• 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 each time period the five companies are always arranged in efficiency order
• As Grey continues to underperform, therefore, it will ultimately be acquired by another company, in this case the most efficient firm, Black Bus
• 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
• White Bus are thus now the most efficient, with Zebra the least. 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
Downie competitive process applied to buses