# Edexcel (B) Economics A-level

## Theme 4: Making Markets Work

## 4.1 Competition and Market Power

### 4.1.3 Oligopoly

Notes

Firms can either operate in a market which is oligopolistic, or several firms can display oligopolistic behaviour.

Firms which display oligopolistic behaviour might be interdependent, have stable prices, collude or have non-price competition.

## Concentration ratios

- The concentration ratio of a market is the combined market share of the top few firms in a market.
- For example, the market share for each of the top supermarkets in the UK is shown in the table below:

| Supermarket | Market share (12 weeks to 29 March 2015) |
|---|---|
| Tesco | 28.4% |
| Asda | 17.1% |
| Sainsbury's | 16.4% |
| Morrisons | 10.9% |
| The Co-operative | 6.0% |
| Aldi | 5.3% |
| Waitrose | 5.1% |
| Lidl | 3.7% |
| Iceland | 2.1% |
| | Data adapted from BBC News http://www.bbc.co.uk/news/business-32218170 |

- If the 4 firm concentration ratio was calculated, the market share of the 4 largest firms would be added together: 28.4% + 17.1% + 16.4% + 10.9% = 72.8%.
- The 2 firm concentration ratio is the market share of the 2 largest firms added together: 28.4% + 17.1% = 45.5%.
- The higher the concentration ratio, the less competitive the market, since fewer firms are supplying the bulk of the market.

## Competition in an oligopoly; interdependence and price stability

### The difference between collusive and non-collusive oligopoly

- Collusive behaviour occurs if firms agree to work together on something. For example, they might choose to set a price or fix the quantity of output they produce, which minimises the competitive pressure they face.
- Collusion leads to a lower consumer surplus, higher prices and greater profits for the firms colluding. It can allow oligopolists to act as a monopolist and maximise their joint profits.
- Firms in an oligopoly have a strong incentive to collude. By making agreements, they can maximise their own benefits and restrict their output, to cause the market price to increase. This deters new entrants and is anti-competitive.
- Collusion is more likely to happen where there are only a few firms, they face similar costs, there are high entry barriers, it is not easy to be caught and there is an ineffective competition policy. Moreover, there should be consumer inertia. All of these factors make the market stable.

  Non-collusive behaviour occurs when the firms are competing. This establishes a competitive oligopoly. This is more likely to occur where there are several firms, one firm has a significant cost advantage, products are homogeneous and the market is saturated. Firms grow by taking market share from rivals.

- Collusion can be overt or tacit.
- Overt collusion is when a formal agreement is made between firms. It works best when there are only a few dominant firms, so one does not refuse. It is illegal in the EU, US and several other countries. For example, it is often suspected that fuel companies partake in overt collusion. This could be in the form of price fixing, which maximises their joint profits, cuts the cost of competition, such as by preventing firms using wasteful advertising, and reduces uncertainty.
- Tacit collusion occurs when there is no formal agreement, but collusion is implied. For example, in the UK supermarket industry, firms are competing in a price war. Price wars are harmful to supermarkets and their suppliers. Some application points for price wars can be found here:

  Grocery price war pushes Waitrose profits down 24%
  Supermarket price war blamed for food producers folding

Supermarket price war hits Asda sales

- **The reasons for non-price competition, the operation of cartels, price leadership, price agreements, price wars and barriers to entry**

- A **cartel** is a group of two or more firms which have agreed to control prices, limit output, or prevent the entrance of new firms into the market. A famous example of a cartel is OPEC, which fixed their output of oil. This was possible since they controlled over 70% of the supply of oil in the world. This reduces uncertainty for firms, which would otherwise exist without a cartel.

  Cartels can lead to higher prices for consumers and restricted outputs. Some cartels might involve dividing the market up, so firms agree not to compete in each other's markets.

- **Price leadership** occurs when one firm changes their prices, and other firms follow. This firm is usually the dominant firm in the market. Other firms are often forced into changing their prices too, otherwise they risk losing their market share. This explains why there is price stability in an oligopoly; other firms risk losing market share if they do not follow the price change. The price leader is often the one judge to have the best knowledge of prevailing market conditions.

- **Price wars:** A price war is a type of price competition, which involves firms constantly cutting their prices below that of its competitors. Their competitors then lower their prices to match. Further price cuts by one firm will lead to more and more firms cutting their prices. An example of this is the UK supermarket industry (see notes above).

- **Non-price competition** aims to increase the loyalty to a brand, which makes demand for a good more price inelastic.
  For example, firms might improve the quality of their customer service, such as having more available delivery times. They might keep their shops open for longer, so consumers can visit when it is convenient.

  Special offers, such as buy one get one free, free gifts, or loyalty cards, might be used to attract consumers and increase demand.

Advertising and marketing might be used to make their brand more known and influence consumer preferences. However, it is difficult to know what the effect of increased advertising spending will be. For some firms, it might be ineffective. This would make them incur large **sunk costs,** which are unrecoverable.

Brands are used to differentiate between products. If firms can increase brand loyalty, demand becomes more price inelastic. Increasing brand loyalty means firms can attract and keep customers, which can increase their market share.

- **Barriers to entry:** Firms might try to drive competitors out of the industry in order to increase their own market share. Barriers to entry are designed to prevent new firms entering the market profitably. This increases producer surplus.

- **The significance of interdependence and uncertainty in oligopoly**

- Game theory is related to the concept of interdependence between firms in an oligopoly. It is used to predict the outcome of a decision made by one firm, when it has incomplete information about the other firm.

- It can be explained using the Prisoner's Dilemma, which is a model based around two prisoners, who have the choice to either confess or deny a crime. The consequences of the choice depend on what the other prisoner chooses.

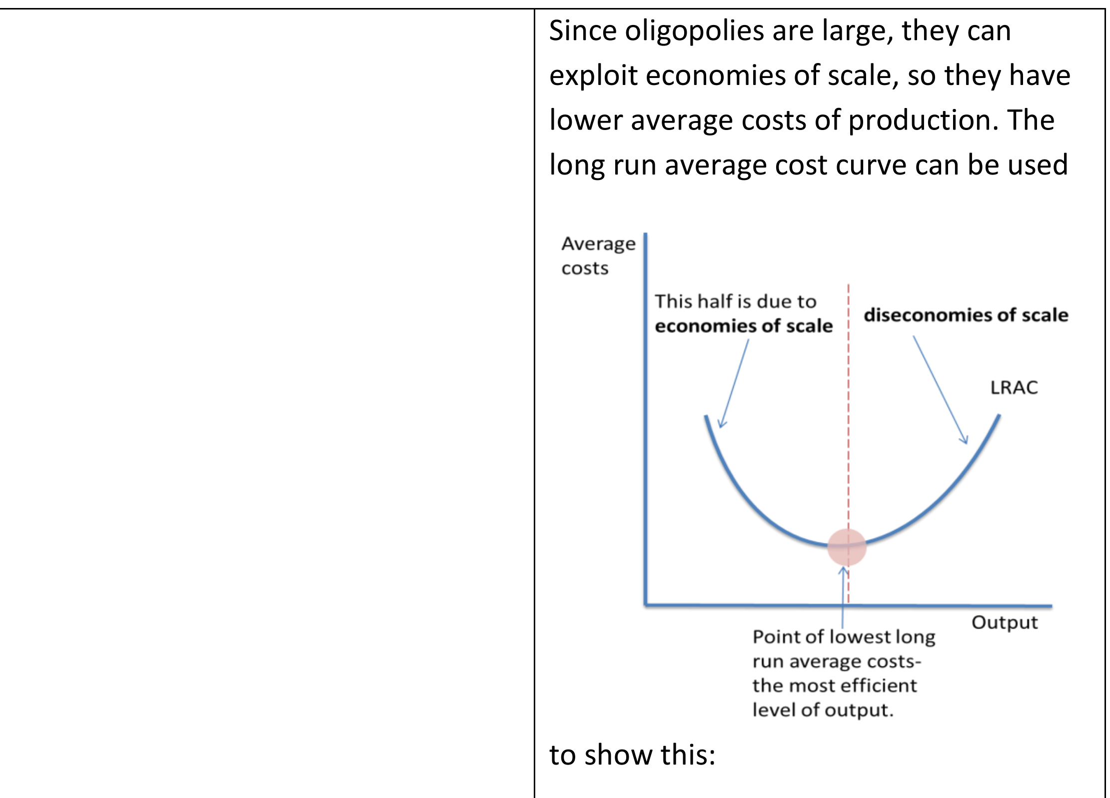
| | | Prisoner B | |
|---|---|---|---|
| | | **Confess** | **Deny** |
| Prisoner A | **Confess** | **5 years, 5 years** | **1 year, 10 years** |
| | **Deny** | **10 years, 1 year** | **2 years, 2 years** |

- The two prisoners are not allowed to communicate, but they can consider what the other prisoner is likely to choose. This relates to the characteristic of uncertainty in an oligopoly.
- The **dominant strategy** is the option which is best, regardless of what the other person chooses. This is for both prisoners to confess, since this gives the minimum number of years that they have to spend in prison. It is the most likely outcome.
- This is still higher than if both prisoners deny the crime, however. If collusion is allowed in this dilemma, then both prisoners would deny. This is the **Nash equilibrium.**

- A **Nash equilibrium** is a concept in game theory which describes the optimal strategy for all players, whilst taking into account what opponents have chosen. They cannot improve their position given the choice of the other.
- However, even if both prisoners agree to deny, each one has an incentive to cheat and therefore confess, since this could reduce their potential sentence from 2 years to 1 year. This makes the Nash equilibrium unstable.
- It essentially sums up the interdependence between firms when making decisions in an oligopoly.

- **The advantages and disadvantages of oligopoly**

| Disadvantages | Advantages |
|---|---|
| The basic model of oligopoly suggests that higher prices and profits and inefficiency may result in a misallocation of resources compared to the outcome in a competitive market. | Oligopolies can earn significant supernormal profits, so they might invest more in research and development. This can yield positive externalities, and make the monopoly more dynamically efficient in the long run. There could be more invention and innovation as a result.<br><br>Moreover, firms are more likely to innovate if they can protect their ideas. This is more likely to happen in a market where there are high barriers to entry. |
| If firms collude, there is a loss of consumer welfare, since prices are raised and output is reduced. | Higher profits could be a source of government revenue. |
| Collusion could reinforce the monopoly power of existing firms and makes it hard for new firms to enter. The absence of competition means efficiency falls. This increases the average cost of production. | Industry standards could improve. This is especially true in the pharmaceutical industry and for car safety technology. This is because firms can collaborate on technology and improve it. It saves on duplicate research and development. |


Since oligopolies are large, they can exploit economies of scale, so they have lower average costs of production. The long run average cost curve can be used

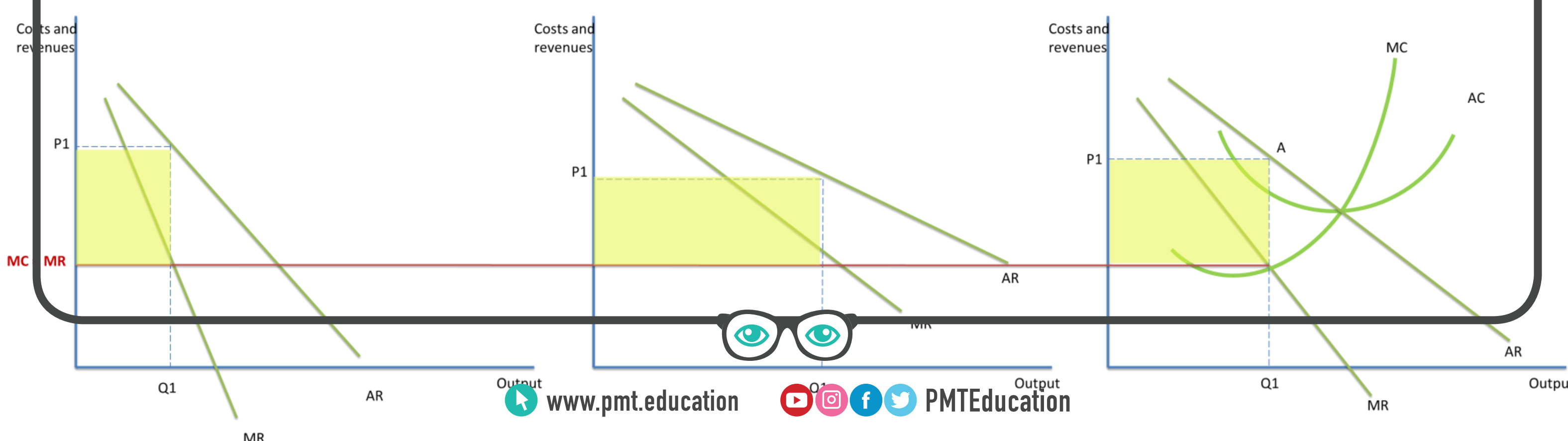
to show this:

## Price discrimination

- Price discrimination occurs in a monopoly, when the monopolist decides to charge different groups of consumers different prices, **for the same good or service.** This is not for cost reasons.

- Usually, demand curves of different elasticities exist with each group of consumers. This allows the market to be split and different prices to be charged. It must not cost the monopolist much to split the market; otherwise, it will not be financially worthwhile.

- The diagram shows the different price elasticities in a market, which might mean the



monopolist charges different prices. A market with an elastic demand curve (the second graph) will have a lower price, while a market with an inelastic demand curve will have a higher price (first graph). The third graph shows the firm's costs and revenues. The area of supernormal profit is represented by the yellow shaded rectangle.

- By charging different prices, the monopolist can maximise their overall profits.

  - First degree price discrimination is when each consumer is charged a different price. For example, a lawyer might charge a high income family more than a low income family.
  - Second degree price discrimination is when prices are different according to the volume purchased. For example, with gas.
  - Third degree price discrimination is when different groups of consumers are charged a different price for the same good or service. For example, the higher price at peak times on trains is a form of third degree price discrimination, because generally, a different group of consumers (usually commuters) use trains at peak times, than off-peak times. Similarly, adults, students and children pay different prices to see the same film at a cinema. It costs the cinema the same to show the film, but the consumers have been divided into groups based on age.

| | **Costs** | **Benefits** |
|---|---|---|
| **Consumers** | Usually, price discrimination results in a loss of consumer surplus. Since P > MC, there is a loss of allocative efficiency.<br><br>It strengthens the monopoly power of firms, which could result in higher prices in the long run for consumers. | Consumers could benefit from a net welfare gain as a result of cross subsidisation, if they receive a lower price.<br><br>Some consumers, who were previously excluded by high prices, might now be able to benefit from the good or service. For example, drug companies might charge consumers with higher incomes more for the same drugs, so that the less well-off can also |

| | | |
|---|---|---|
| | | access the drugs at a lower price. This can yield positive externalities. |
| **Producers** | If it is used as a predatory pricing method, the firm could face investigation by the Competition and Markets Authority.<br><br>It might cost the firm to divide the market, which limits the benefits they could gain. | Producers make better use of spare capacity.<br><br>The higher supernormal profits, which result from price discrimination, could help stimulate investment.<br><br>If more profits are made in one market, a different market which makes losses could be cross subsidised, especially if it yields social benefits. This will limit or prevent job losses, which might result from the closure of the loss-making market. |