

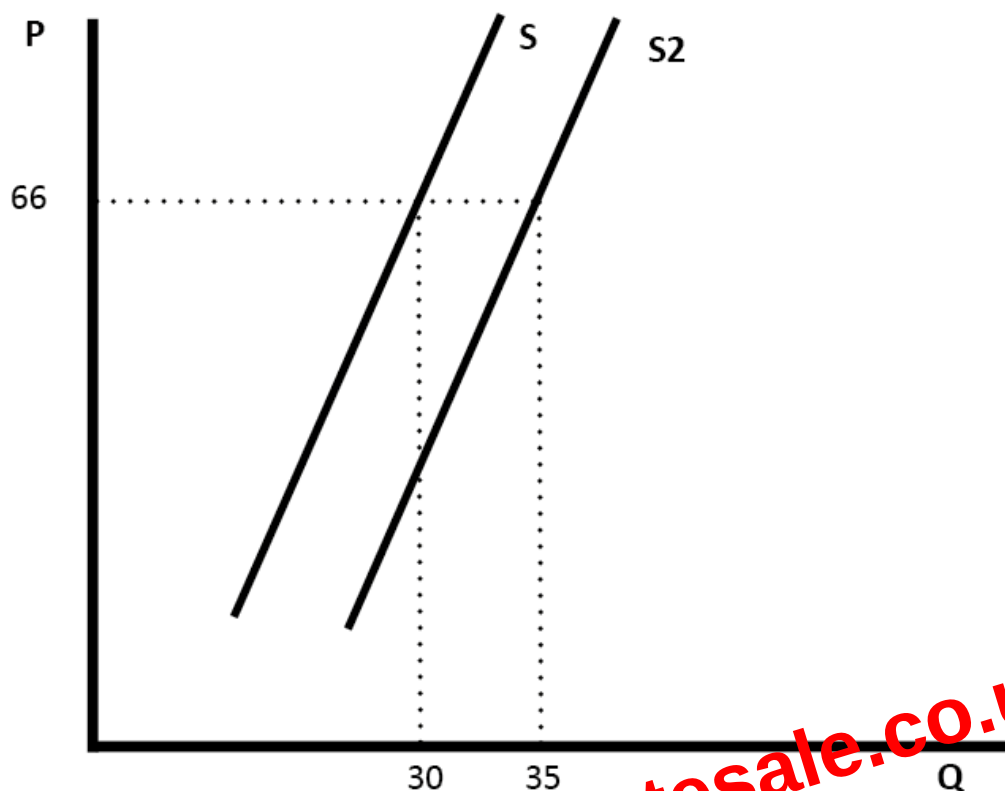
The objectives of economic agents

- **Utility maximisation** occurs when agents try to get the highest utility that they can. For example, when choosing goods, consumers will buy the goods that give them the most satisfaction relative to the price.
- **Profit maximisation** occurs when firms try to make as much profit (revenue – costs) as possible.
- **Sales maximisation** occurs when firms try to increase sales and maximise market share.
- **Social welfare maximisation** occurs when agents try to maximise social welfare. For example, this may involve firms making less profit but making goods cheaper for people on low income.
- **Environmental maximisation** occurs when agents place concern for the environment as highest priority. This may involve consumers avoiding the consumption of goods which cause pollution, e.g. choosing to walk rather than drive.

Evaluation of different objectives

- **Conflicts.** If a firm aims at profit maximisation, it may conflict with the environment or social welfare because increasing output could lead to more pollution.
- **Government intervention.** Government intervention may be needed to limit behaviour of firms and consumers.
- **Aims are not always in conflict.** It is possible a firm may be able to harmonise different objectives. For example, firms which look after workers, may get greater loyalty and productivity from workers. Firms which look after environment may get better brand loyalty.

Shifts in the supply curve



An increase in supply occurs when more is supplied at each price, e.g. a shift in supply from S to S2. This could occur for the following reasons:

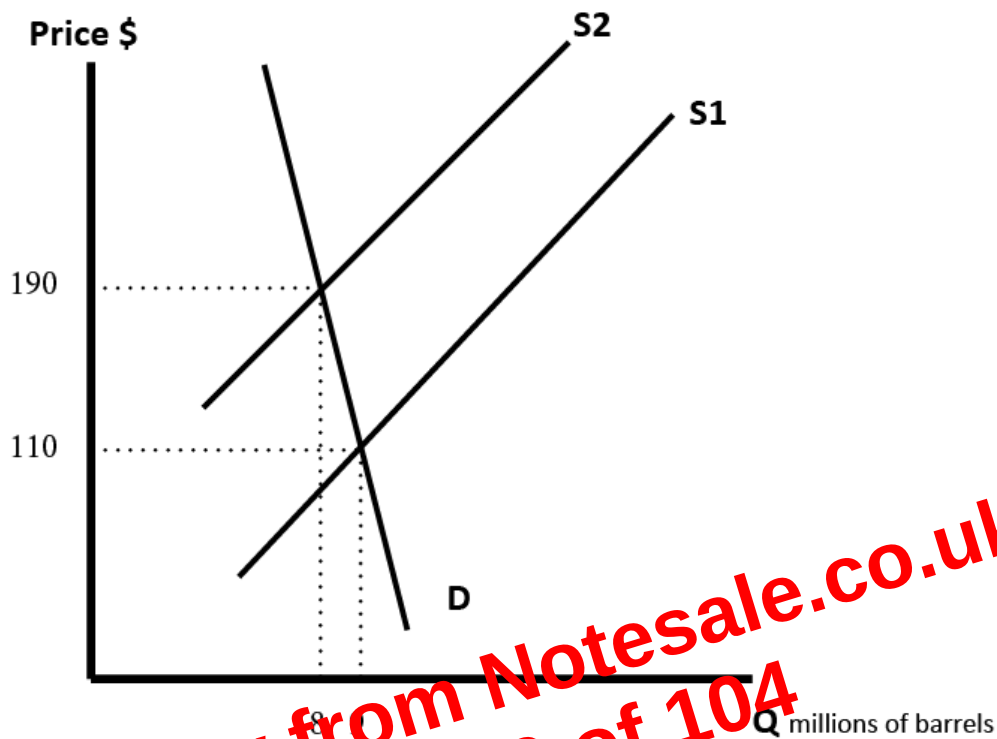
- A decrease in costs of production. This means that a business can supply more at each price. Lower costs could be due to lower wages or lower raw material costs.
- An increase in the number of producers will cause an increase in supply.
- Expansion in the capacity of existing firms, e.g. investment to extend the size of a factory.
- An increase in the supply of a complementary good, e.g. beef and leather.
- Favourable climatic conditions, which are very important for agricultural products, e.g. good weather will give a good harvest.
- Improvements in technology, e.g. computers and the Internet enables more to be produced for a lower cost.
- Lower taxes on the good, e.g. lower petrol tax.
- Government subsidies on the good (government paying part of the cost).

Using knowledge of elasticity

1. Revenue

If demand is inelastic then increasing the price can lead to an increase in revenue.

Diagram: Inelastic demand and price



In this example, the price of oil rises from \$110 a barrel to \$190, and the quantity falls from 9 million to 8 million.

- Revenue was $\$110 \times 9 = \990 million
- Revenue is now $\$190 \times 8 = \$1,520$ million
- An increase in revenue of \$530 million

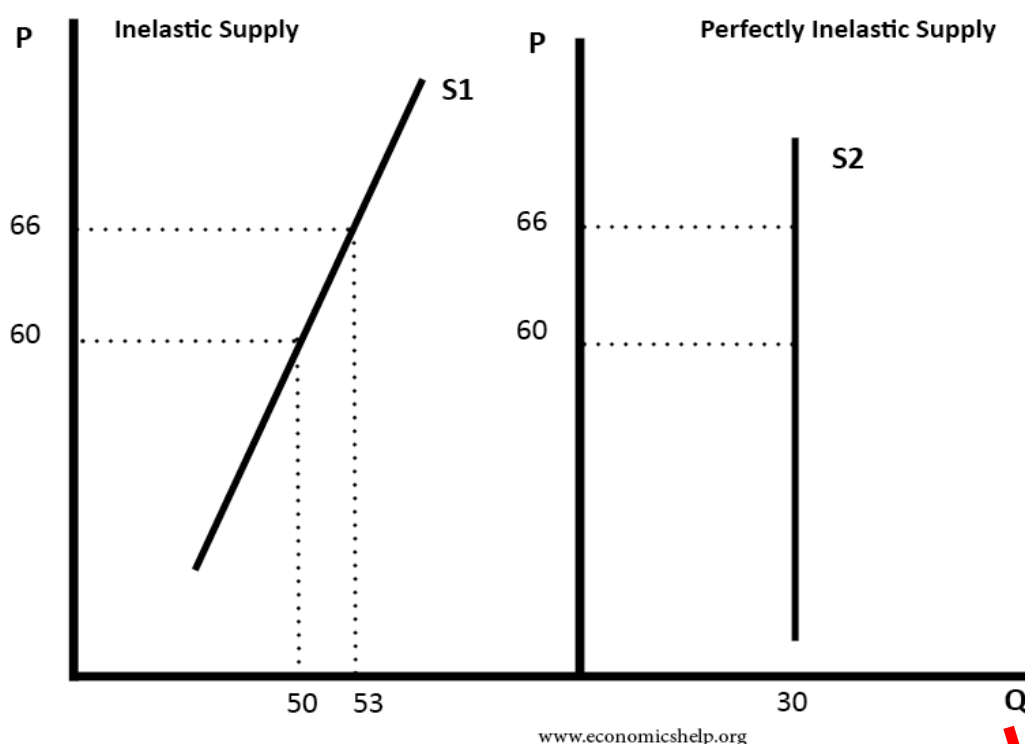
This is why OPEC tries to increase the price of oil, because higher oil prices are more profitable.

What is the PED of oil in this example?

- % change in Q.D. $1/9 = -0.11$ (-11.1%)
- % change in price $80/110 = 0.727$ (72.7%)

Therefore PED of oil = $-11.1 / 72.7 = -0.15$ (inelastic)

Diagram: inelastic supply



- Inelastic supply means a change in price causes a smaller percentage change in supply ($PES < 1$).
- Perfectly inelastic means a change in price has no effect on supply.
- In the example on the left: $\% \text{ change in } Q = 3/50 = 6\%$
- $\% \text{ change in price} = 6/60 = 10\%$
- Therefore $PES = 6/10 = 0.6$ (inelastic supply)

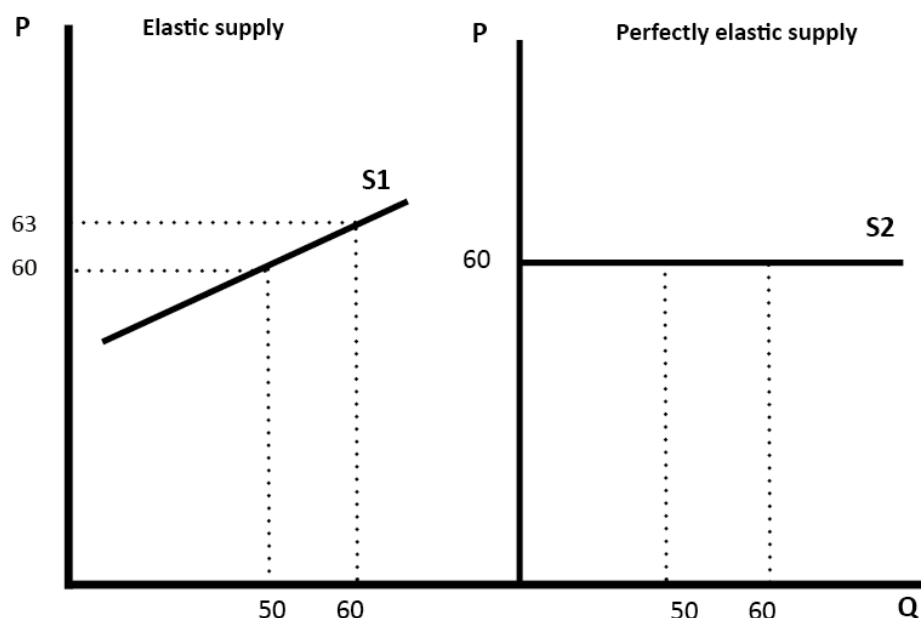
Supply could be inelastic for the following reasons:

1. **Operating close to full capacity.** If firms are operating close to full capacity, it is difficult to increase supply.
2. **Low levels of stocks;** therefore, there are no surplus goods to sell.
3. **In the short term,** capital is fixed, therefore firms do not have time to build a bigger factory and increase supply.
4. **Difficult to employ factors of production,** e.g. it may be difficult to find relevant skilled labour to increase output.
5. **With agricultural products,** supply is inelastic in the short run because it takes at least 6 months to grow crops.

Elastic supply

This occurs when an increase in price leads to a bigger % increase in supply, therefore $PES > 1$.

- Perfectly elastic supply means that at a given price, supply is unlimited.



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- On the left: Price increase from 60 to 63 and Q increases from 50 to 60.
- % change in Q = $10/50 = 20\%$
- % change in price = $3/60 = 5\%$
- Therefore PES = $20/5 = 4.0$ (elastic supply)

Supply could be elastic for the following reasons:

- If there is spare capacity in the factory.
- If there are stocks available.
- If it is easy to employ more factors of production.

Difference between long run and short run

- In the short run, supply is more likely to be inelastic because the firm does not have the ability to increase the size of the factory.
- But, in the long run, supply can be more elastic as the firm is able to invest in more capacity and therefore increase supply.

Elasticity calculation

Suppose PES for computers is 2.0. When the price was £30, the firm supplied 4,000. If the price increased from £30 to £36, what will be the new Q?

- Price increases by £6. Therefore as a %, $(6/30 = 0.2) = 20\%$

$$(\text{PES}) 2.0 = \frac{\% \text{ change in QS}}{20 (\% \text{ change in P})}$$

Therefore $40 = \% \text{ change in QS}$

Therefore new Q = $4000 * 140/100 = 5,600$

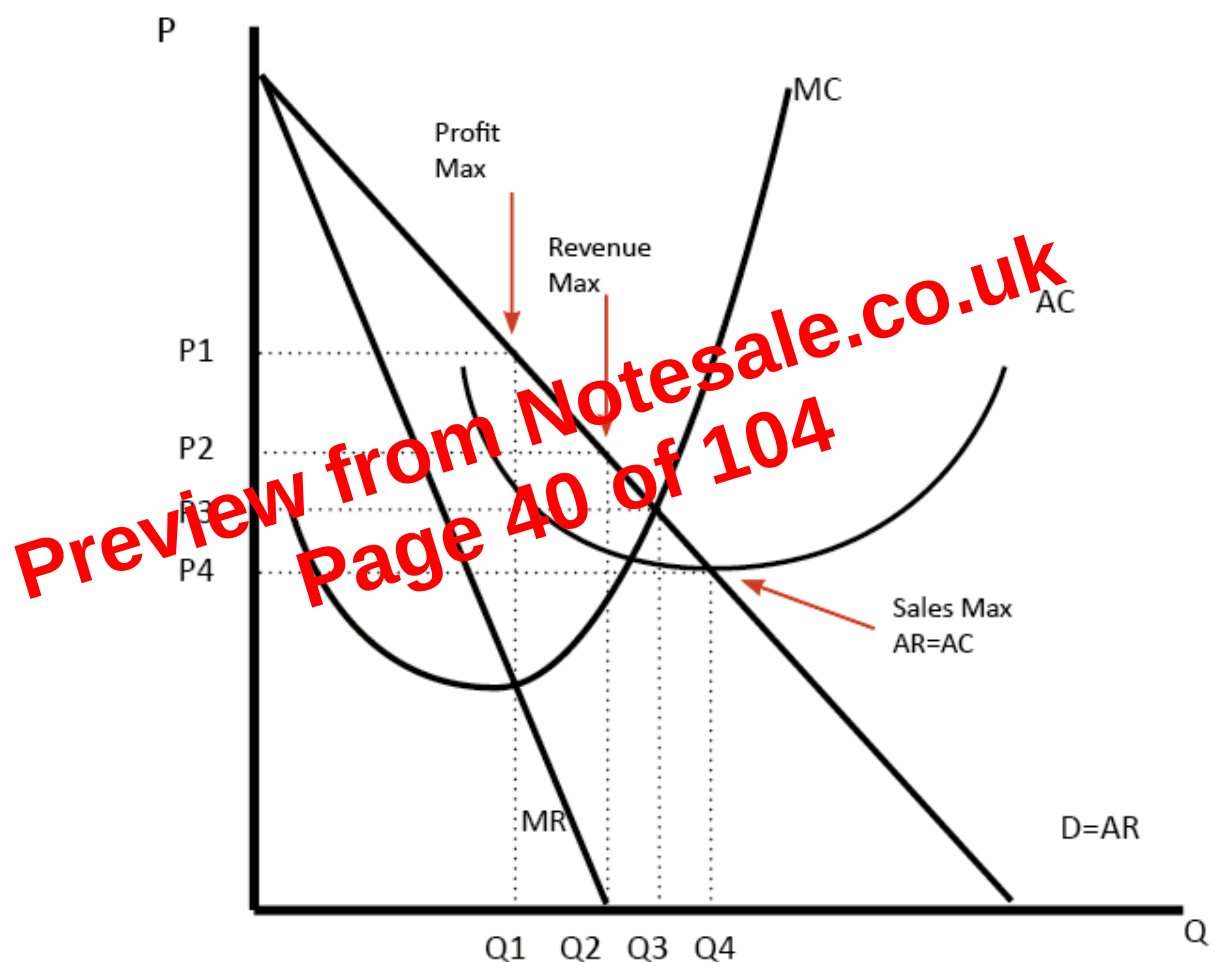
Social welfare

- Some businesses may be set up with aim of promoting social welfare. For example, housing trusts and co-operatives.

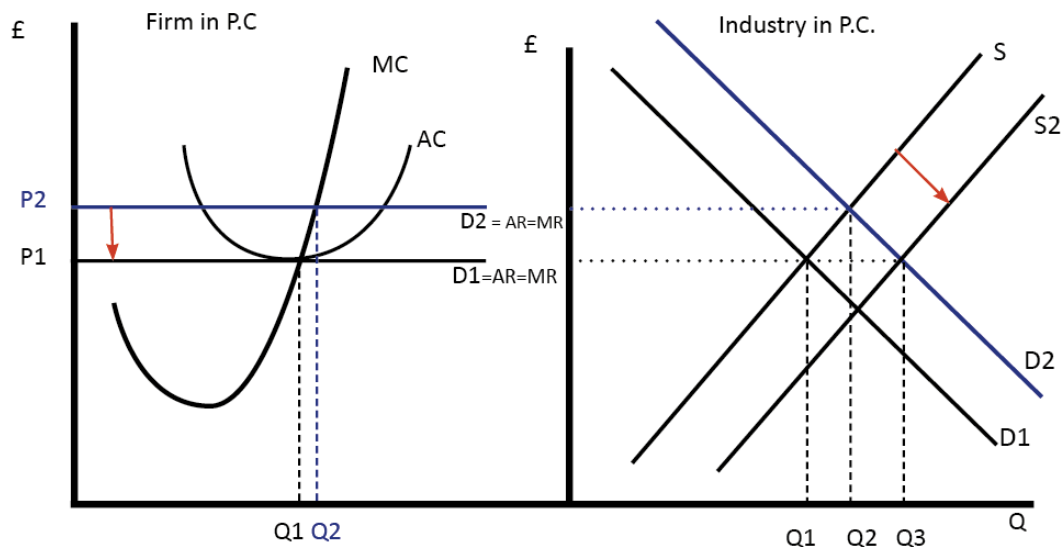
Corporate social responsibility (CSR)

- This is a business model where the main stakeholders in a business are considered – beyond the usual profit maximisation aims.
- For example, there may be concern for working conditions, and the impact of the firm on the local community and environment.

Diagram showing different objectives



- P1, Q1 – Profit maximisation** - because it is the output where $MR=MC$
- P2, Q2 – Revenue maximisation** - because it is the output where $MR=0$
- P3, Q3 – Marginal cost pricing** - $P=MC$ (allocative efficiency)
- P4, Q4 – Sales maximisation** - The maximum sales a firm can make whilst making normal production



Impact of higher costs in perfect competition

- If firms had a rise in AC, they would start to make a loss.
- But, if firms make a loss, they will close down, causing the market price to rise until the industry is profitable again.
- Therefore, in the long run, firms in perfect competition will make normal profits ($AR=AC$).

Disadvantages of perfect competition

1. **No scope for economies of scale.** This is because there are many small firms producing relatively small amounts. Industries with high fixed costs would be particularly unsuitable to perfect competition.
2. **Undifferentiated products.** These can be boring, giving little choice to consumers.
3. **Limited investment.** Lack of supernormal profit will make investment in R&D unlikely; this would be important in an industry such as pharmaceuticals.
4. **Limited incentives.** With perfect knowledge, there is no incentive to develop new technologies, because it would be shared with other companies.
5. **Externalities.** If there are externalities in production or consumption, there is likely to be market failure without government intervention.

How realistic is perfect competition?

- In the real world, it is hard to meet all the criteria, such as perfect information and freedom of entry and exit.
- However, some markets come closer than others. Many markets can be considered 'competitive', even if not quite matching perfect competition.
- These competitive markets with many firms will have a similar outcome to perfect competition, i.e. low prices and low profits.

Oligopoly

An oligopoly is an industry which is dominated by a few firms. One definition of an oligopoly is a five firm concentration ratio of more than 50%.

Features of oligopoly include:

1. Interdependence of firms: firms will be affected by how other firms set price and output.
2. Barriers to entry (but less than monopoly).
3. Differentiated products. Advertising and non-price competition are often important in oligopoly.

How firms in oligopoly behave

There are three main possible ways for firms in oligopoly to compete:

1. **Price competitive / price wars.** An oligopoly where firms try to gain market share and where prices and profits tends to be low.
2. **Stable prices / focus on non-price competition.** The kinked demand curve suggests prices will be stable and firms focus on non-price competition.
3. **Higher prices / collusion.** If there are barriers to entry, firms may try to maximise price through increasing prices. This may involve collusion.

The behaviour of firms in oligopoly depends upon factors such as:

- The objectives of the firms, e.g. profit max or sales max.
 - The degree of contestability, e.g. amount of barriers to entry.
 - Government regulation, e.g. preventing collusion and price fixing.
- The nature of the industry, e.g. is the industry in growth phase or decline?
A declining industry may be more prone to price competition, as firms try to retain sales.

Game theory

- This examines the behaviour of firms considering how decisions of other firms affect their own choices. For example, if a firm in oligopoly cuts price, the outcome will largely depend on how other firms react, e.g. do other firms also follow suit (starting price war), or do they keep prices high? There are no guarantees in oligopoly.

The kinked demand curve model

One way of looking at oligopoly is through the kinked demand curve model, though this makes various assumptions, which may not match reality.

- This model assumes firms seek to maximise profits.

- It depends on the product. Supermarkets sell cheaper cola than Pepsi and Coca Cola, but they are unable to take market share, because there is such strong brand loyalty to the product.

Price wars

Firms may not seek to maximise profits but have other aims, such as increasing market share and expanding the firm. This can explain why firms seek to reduce prices and start price wars.

- Price wars are more likely in a recession, when demand is falling and markets become more competitive.
- Price wars tend to be short-term because, otherwise, firms will make a loss.
- Price wars are often selective, e.g. supermarkets have selective price cuts on “loss leaders”. This can give a misleading impression of price competition.
- Price wars can be in the public interest, but only if firms don’t get forced out of business by the low prices.

Predatory pricing

- This occurs when a firm lowers prices in some sections of the market, with the intent of forcing another firm out of business.
- To set price below cost, the firm will need to cross subsidise the market from other profitable markets.
- Predatory pricing is against the public interest, because the dominant firm can increase prices when its rival has left. There is legislation which makes predatory pricing illegal.

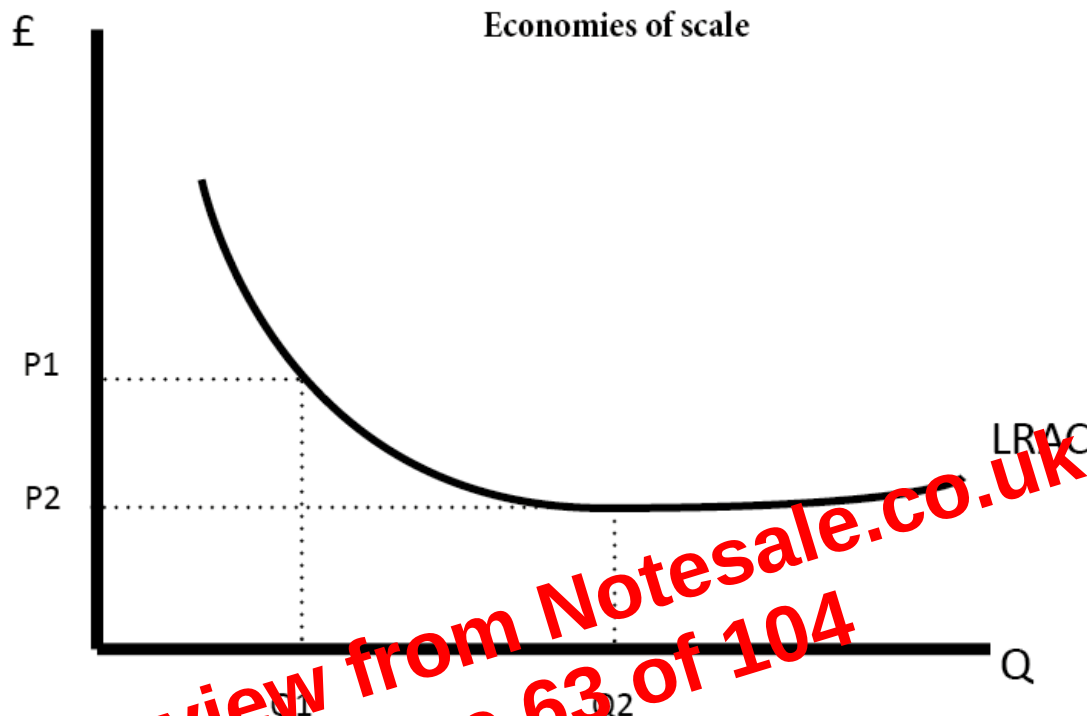
Collusion

- Collusion occurs when firms agree to limit competition, by setting output quotas and fixing prices.
- A cartel is a formal collusive agreement. For example, OPEC is a cartel of the major oil producers.
- Tacit collusion is an unwritten agreement where firms observe informal rules, such as not undercutting rivals. Tacit collusion often occurs if there is government regulation against cartels and collusion.
- Overt collusion is where firms are open about their deals to set prices and output.
- Through collusion, firms are able to maximise profits of the industry. There will be a similar price and outcome to a monopolistic industry, with firms effectively sharing the supernormal profits.
- Collusion is seen as against the public interest, because of higher prices leading to allocative inefficiency. There is legislation against collusion and cartels in the UK.

- **Monopsony power.** A monopoly may also have monopsony power, in employing workers and buying products. This means the firm can pay workers lower wages, and supermarkets can pay farmers lower prices.

Advantages of monopolies

1. **Economies of scale.** If the industry has high fixed costs and economies of scale, then a large monopolist can bring benefits of lower average costs, which lead to lower prices for consumers.



Increasing output from Q_1 to Q_2 leads to lower average costs (P_1 to P_2).

- Economies of scale will occur most often in industries with high fixed costs, or scope for specialisation. For example, airlines and car companies tend to have high-fixed costs and therefore there tends to be only a small number of large firms.
 - Note: Economies of scale may be so large that they outweigh everything else, such as allocative and productive inefficiency.
2. **Research and development.** A monopolist can use its supernormal profits, to invest in developing new products which may require high investment. This is very important for industries, such as the pharmaceutical industry where, without high profits, they would be unable to develop new drugs.
 3. **International competition.** A domestic monopoly may be necessary to compete internationally. For example, Corus is the only steel producer in the UK, but it faces competition from overseas competitors.
 4. **Monopolies may be efficient.** A firm may gain monopoly power, because it is efficient and innovative e.g. Google and Apple. A monopoly isn't necessarily inefficient; the opposite may be true.

Price discrimination

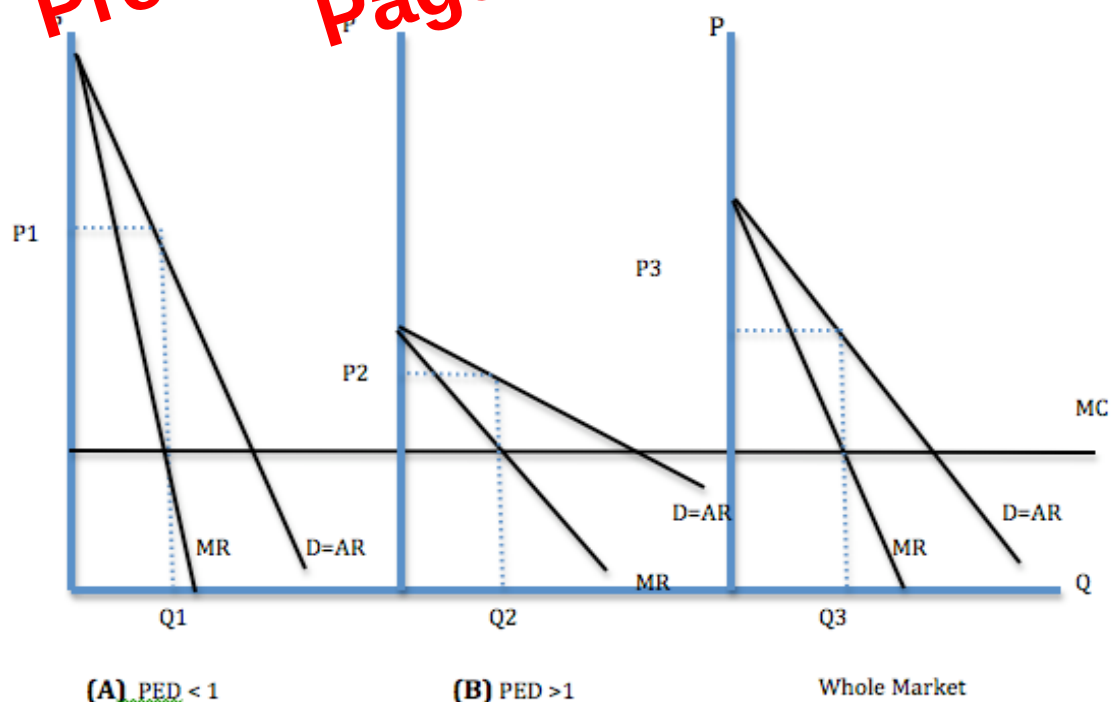
Price discrimination occurs when a firm charges a different price for the same good to different groups of consumers.

- **1st Degree price discrimination.** This is where the firm charges the maximum price that a consumer is willing to pay. This is very difficult in practice.
- **2nd Degree price discrimination.** This is when consumers are charged different prices according to how much they consume. For example, units of electricity become cheaper after higher levels of consumption.
- **3rd Degree price discrimination.** This is when consumers are grouped into two or more independent markets. For example, train companies offer discounts for people over 65 and to people travelling off-peak.

Conditions necessary for price discrimination

1. The firm must be a price maker, i.e. able to set prices. Price discrimination can only occur in imperfect competition (oligopoly or monopoly).
2. The firm must be able to separate the market into different sections and prevent resale, e.g. it must be impossible for an adult to use a child's ticket.
3. There must be a different elasticity of demand for the different market sections, e.g. train firms can charge high prices at peak times because, in this period, demand for train travel is inelastic.
4. The cost of separating markets must be less than extra revenue gained.
5. It usually requires low or constant marginal cost.

Diagram of price discrimination



This diagram shows how a profit-maximising firm can use price discrimination to charge different prices to different segments.

- We assume marginal cost is the same for both groups.
- Market A has an inelastic demand; therefore, the price is higher, than market B, where demand is more elastic.

Advantages of price discrimination

1. **Firm will be able to increase revenue.** This may enable some firms, who may have otherwise have made a loss to stay in business, e.g. train companies need price discrimination to offer off-peak travel.
2. **Research & development.** Increased revenue can be used for research and development, which leads to better products for consumers.
3. **Cheaper prices.** Some consumers, often on lower incomes, will benefit from lower fares, e.g. pensioners can take advantage of cheaper fares on trains.

Disadvantages of price discrimination

1. **Higher prices.** Some consumers will face higher prices, leading to allocative inefficiency and a loss of consumer surplus.
2. **Inequality.** Often those who benefit from lower prices may not be the poorest. For example, some old people may be quite rich, but the unemployed will have to pay the full adult fare.
3. **Administration costs** involved in separating the markets and implementing different prices.

Common examples of 3rd degree price discrimination

- **Student discounts.** Many shops offer 10% discount to students. This is because students have limited income and are more likely to be sensitive to price. It is relatively easy to separate the market, e.g. check students have a student card.
- **Buy in advance.** If you are able to buy train tickets in advance, you can often have a big discount on original price. This is because people planning ahead have more time to choose means of travel, and will be more sensitive to price.

Contestable markets

- A contestable market is a market where there is free and costless entry and exit. This requires low sunk costs.
- **Sunk costs** are costs that cannot be recovered when leaving the market, e.g. expenditure on advertising is lost.
- In a contestable market, incumbent firms will always have the threat of new firms entering the industry. Therefore, such a market will have a competitive equilibrium, even if there are a small number of firms.

A perfectly contestable market has the following three features:

1. Absence of sunk costs
2. Perfect information
3. Freedom to advertise and a legal right to enter the market

Hit and run competition

- If there are low entry and exit costs, then firms can engage in hit and run tactics. This means that if an industry is making supernormal profits, then a firm can enter and take advantage of high prices.
- If prices fall and the industry is no longer profitable, then the firm will leave.
- Therefore, in a contestable market, a firm should be satisfied with normal profits, otherwise it would encourage hit and run tactics from other firms.

Contestable markets and the public interest

Contestable markets can bring the benefits of competitive markets such as:

- Lower prices.
- Increased incentives for firms to cut costs.
- Increased incentives for firms to respond to consumer preference.
- However, there could also be significant economies of scale, because the theory of contestable markets doesn't require there to be many firms.

Implications of contestable markets

- Policy makers should not just look at the degree of concentration, but also the degree of contestability and how easy it is to enter the market.
- Regulators in the privatised industries have often focused on removing barriers to entry, rather than breaking up big firms.
- It can be important to allow firms to share a distribution network, which is a natural monopoly, e.g. consumers can buy gas from different companies selling gas, whilst using the same national network of gas pipes.

Mergers

- **Horizontal merger / horizontal integration.** This occurs when two firms at the same stage of production merge e.g. Guinness and Heineken, two beer-brewing companies.
- **Vertical merger / integration.** When two firms at a different stage of production merge. For example, a company who produces beer could buy a chain of pubs to sell the beer.
- **Forward vertical merger.** This is when a firm acquires another firm at the next stage of production, e.g. a firm like Ford which manufactures cars could purchase a car sales room.
- **Backward vertical merger.** When a firm acquires another firm at a previous stage of production, e.g. a clothes retailer buying a manufacturer of clothes, or a beer producer buying a farm which produces hops (ingredient used for brewing beer).

Disadvantages of integration / mergers

If a merger leads to a significant increase in market share, either in local or national markets, the new firm could exercise monopoly power.

The legal definition of a monopoly is a firm with more than 25% of the market. If the firm has monopoly power, there could be the following disadvantages:

1. Higher prices leading to allocative inefficiency and a reduction in consumer surplus.
2. Monopolies are more likely to be productively inefficient.
3. If there is less competition, complacency amongst firms can lead to lower quality of products, less choice and less investment in new products.
4. The new firm can pay lower prices to suppliers (monopsony power).
5. Mergers can lead to job losses.
6. Motives for mergers may primarily be based on increasing prestige and wages of workers concerned.
7. If the firm becomes too big, it may suffer from diseconomies of scale.

Potential benefits of mergers

1. Economies of scale. This occurs when a larger firm with increased output can reduce average costs. This is important for industries with high fixed costs.
2. Mergers can help firms compete on an international level.
3. Mergers may allow greater investment in R&D, because the new firm will have more profit. This can lead to a better quality of goods for consumers.

Evaluation of mergers

The desirability of a merger will depend upon several factors, such as:

- Is there scope for economies of scale? What is the extent of fixed costs in the industry?

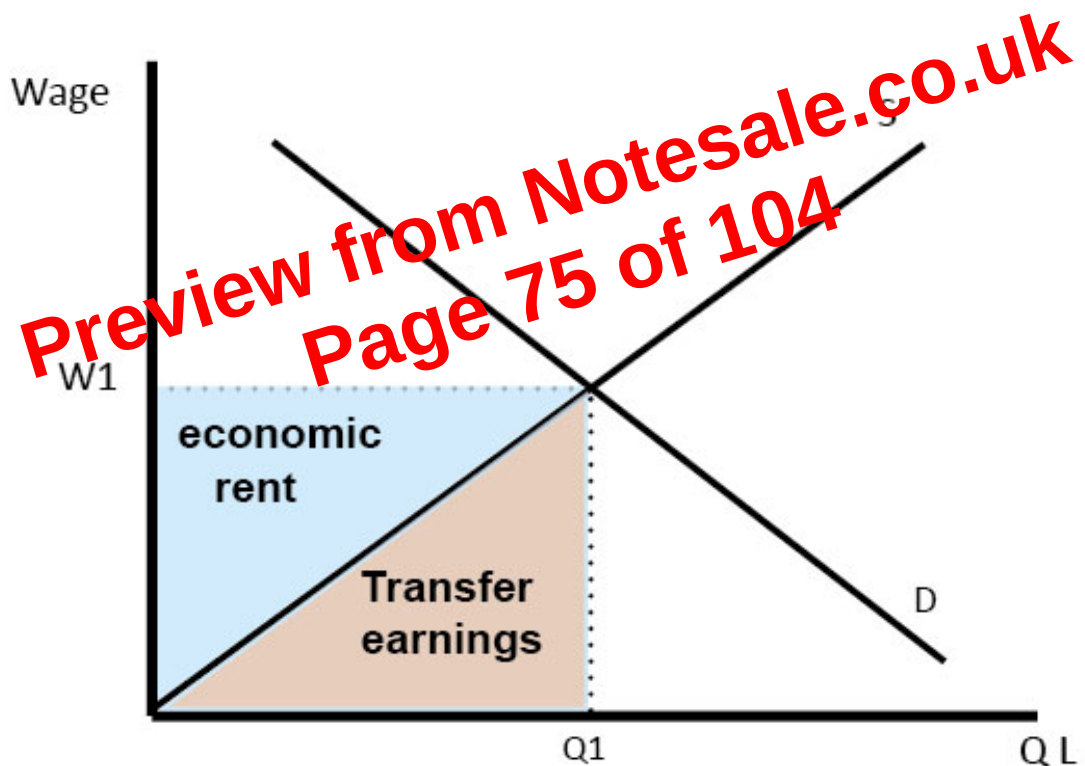
Low wage job

- In the diagram on the left, supply and demand are both elastic. This could be an unskilled job such as a cleaner or retail assistant.
 - Many people have sufficient qualifications to be a cleaner, therefore supply is elastic.
 - Also, demand is relatively elastic, because cleaners have a low MRP.

High wage job

- On the right, supply and demand are inelastic, leading to a higher wages.
 - This could be a lawyer, where the number of qualified lawyers is limited.
 - Demand for lawyers is likely to be high and inelastic, because a successful lawyer could make a big difference to the profit of a company. Therefore, they have a high MRP.

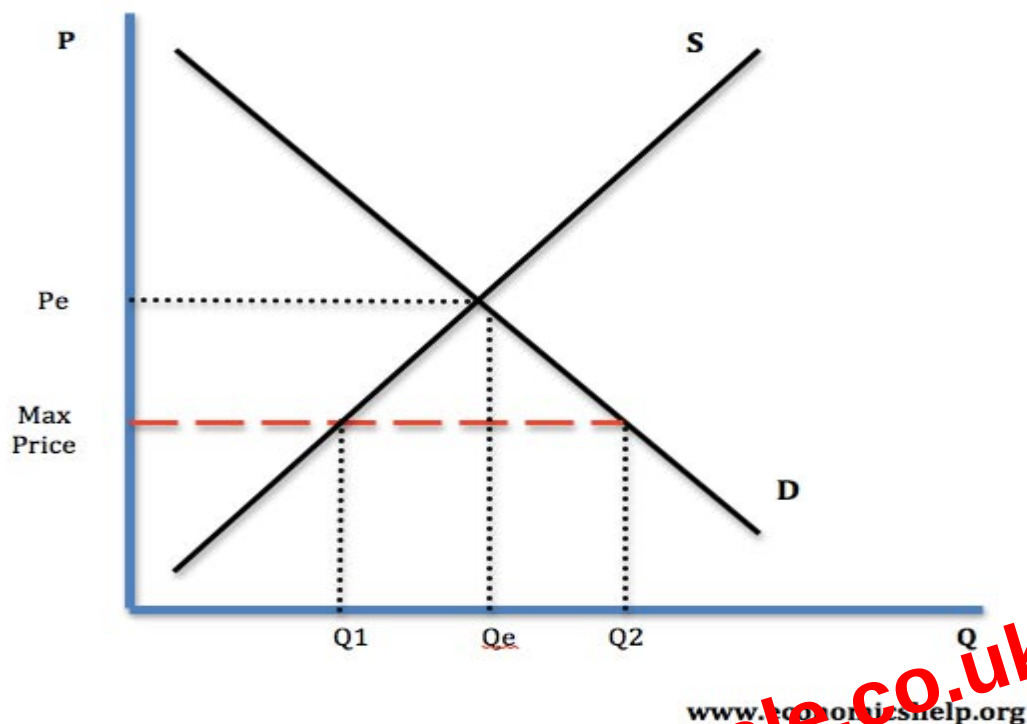
Economic rent and transfer earnings



- Transfer earnings are the minimum wage that a worker needs in order to make him take a job.
- Economic rent, is anything above the transfer earnings.

If a worker would be willing to work as a cleaner for £7 an hour – but he got paid £10 an hour then his economic rent would be £3.

Diagram of maximum wage



Discrimination in the labour market

- In theory, discrimination on the grounds of age, sex, and race is illegal. In practice, it can be difficult to enforce discrimination legislation.

To what extent are wages determined by MRP theory

MRP and supply of labour provide a good starting point for wage determination. But, in the real world, other factors can determine wages, including:

- **Discrimination.** Firms may not be rational, but pay some workers different wages on the grounds of age, race, or gender. Alternatively, firms may be unwilling to employ / promote people of certain sex or ethnic minority.
- **Difficulty of measuring MRP.** Many workers do not produce a quantifiable product, e.g. with nurses, teachers and doctors it is hard to measure how hard they work.
- **Regional labour markets.** In the UK, many labour markets are highly regional. In London, it is expensive to live, and there are more job vacancies. Firms often need to pay higher wages in London to attract workers.
- **Different aims of workers.** Some workers may not aim at wage maximisation – or progressing in their career. Some workers may prefer more leisure time or take out time from work for family reasons.

Market Failure

Market failure occurs when there is an inefficient allocation of resources in a free market.

- Complete market failure occurs when the market is missing, e.g. non-provision of public goods like justice and law and order.
- Partial market failure occurs when there is a market for the good, but there is over or under consumption. For example, under-consumption of solar powered electricity which has positive externalities.

Market failure can occur for various reasons.

- **Externalities.** A cost or benefit imposed on a third party, leading to under or over-consumption.
- **Information asymmetries.** Lack of complete knowledge by one party. E.g. people may under-estimate the benefits of education (merit good) or underestimate the costs of smoking (demerit good).
- **Monopoly.** When a firm has market power and can set higher prices. Monopolies may also be more inefficient because they face less competitive pressures.
- **Immobilities.** Geographical immobilities occur when it is difficult for people or firms to move to another area. E.g. unemployed coal miners in Yorkshire find it difficult to move to London because of housing costs. Occupational immobilities occur when it is difficult for people to retrain and get skills in new high-tech industries.
- **Public goods.** Goods that are non-rival and non-excludable.
- **Inequality.** Inequality is a type of market failure. For example, due to unemployment, people may have insufficient income to buy goods.

Public goods

A public good has these characteristics:

- **Non-rivalry/non-diminishability.** When a good is consumed, it doesn't reduce the amount available for others, e.g. street lighting.
- **Non-excludability.** This occurs when it is not possible to provide a good without it being possible for others to enjoy, e.g. national defence.
- **Non-rejectability.** With a public good once provided you have no choice but to experience it.
- **Zero marginal cost.** It costs nothing for more consumers to enjoy it.
- Examples include law and order, national defence, and street lighting.

Free-rider problem

- Public goods suffer from the free rider problem. This means that people can enjoy the goods without paying for it. Therefore, there is no incentive