Economics as a Social Science

- Economists need to make assumptions. A key assumption that is made is assuming that events occur with ***ceteris paribus.*** This assumption is that other things are being held equal or constant, so nothing else changes.
- Economists cannot conduct scientific experiments, like in the natural sciences, so models are devised. Economists then use real-life scenarios to build these models upon, and assumptions are made with the models.

Positive Statements

- It is important to be able to distinguish between fact and fiction in current affairs.
- Positive statements are **objective**. They can be tested with factual evidence, and can consequently be rejected or accepted.
- Look for words such as 'will', 'is'.
- For example,
  "Raising the tax on alcohol will lead to a fall in the demand of alcohol and a fall in the profits of pub landlords" is a positive statement.
  "Higher temperatures will lead to an increase in the demand for sun cream" is also a positive statement.
- The key thing here is that these statements can be tested, the results can be examined and the statement can then be rejected or accepted.

Normative Statements

- Normative statements are based on **value judgements.** These are **subjective** and based on opinion rather than factual evidence.
- Look for words such as 'should', and if the statement is suggesting one action is more credible than another.
- For example,
  "The free market is the best way to allocate resources" is a normative statement, because it is based on opinion and suggests one method of resource allocation is better than another.
  "The government should increase the tax on alcohol" is another normative statement.
- Value judgements can influence economic decision making and policy. Different economists may make different judgements from the same statistic.
  For example, the rate of inflation can give rise to different conclusions.

The Economic Problem

- The basic economic problem is scarcity. **Wants are unlimited and resources are finite,** so choices have to be made. Resources have to be used and distributed optimally.
- For example, if you only have £1 and you go to a shop, you can buy either the chocolate bar or the packet of crisps. The scarcity of the resource (the money) means a choice has to be made between the chocolate and the crisps.
- This gives rise to **opportunity cost.** The opportunity cost of a choice is the value of the next best alternative forgone. In the above example, the opportunity cost of choosing the crisps is the chocolate bar.
- If a car was bought for £15,000 and after 5 years the value depreciates by £5,000, the opportunity cost of keeping the car is £5,000 (which could have been gained by selling the car), regardless of the starting price.
- Opportunity cost is important to economic agents, such as consumers, producers and governments. For example, producers might have to choose between hiring extra staff and investing in a new machine. The government might have to choose between spending more on the NHS and spending more on education. They cannot do both because of finite resources, so a choice has to be made for where resources are best spent.

The factors of production (CELL):

Factor	Description	Reward/Incentive
Capital	Physical: goods which can be used in the production process Fixed: Machines; buildings Working: finished or semi-finished consumer goods	Interest from the investment
Entrepreneurship	Managerial ability. The entrepreneur is someone who takes risks, innovates, and uses the factors of production. Resources	Profit- an incentive to take risks

	are drawn together into the production process.	
Land	Natural resources such as oil, coal, wheat, water. It can also be the physical space for fixed capital.	Rent
Labour	Human capital, which is the workforce of the economy.	Wages

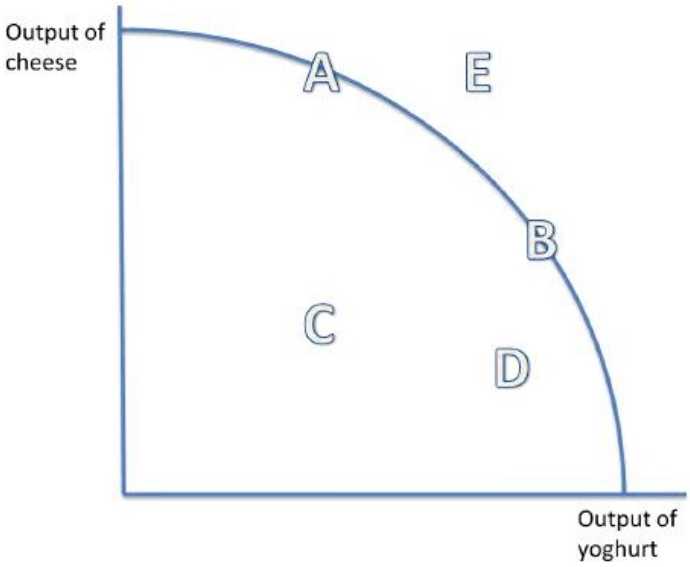
- These factors of production are inputs, and they produce outputs in the form of goods and services. This forms the economy.

Renewable and non-renewable resources:

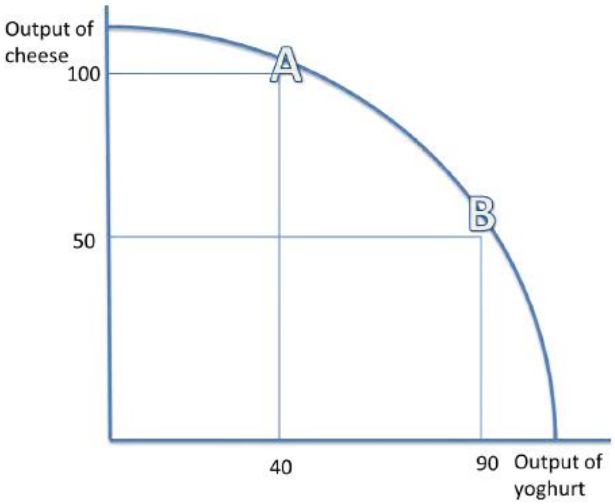
- Renewable resources can be replenished, so the stock level of the resources can be maintained over a period of time. For example, commodities such as oxygen, fish, or solar power are renewable **assuming the rate of consumption of the resource is less than the rate of replenishment.** If the resource is consumed faster than it is renewed, the stock of the resource will decline over time.
- This is important in environmental economics, and can be managed by preventing or limiting deforestation, or imposing fishing quotas. Renewable resources are sustainable. However, currently, resources are being consumed faster than the planet can replace them. The Worldwide Fund for Nature claims that two planets will be required to meet global demand by 2050 if this continues.
- Non-renewable resources cannot be renewed. For example, things produced from fossil fuels such as coal, oil and natural gas are non-renewable. The stock level decreases over time as it is consumed. Methods such as recycling and finding substitutes, such as wind farms, can reduce the rate of decline of the resource.

Production Possibility Frontiers

- Production possibility frontiers (PPFs) depict the maximum productive potential of an economy, using a combination of two goods or services, when resources are fully and efficiently employed.
- PPF curves can show the opportunity cost of using the scarce resources.
- For example,
  if the scare resource is milk, there is a trade-off between producing more cheese or more yoghurt from the milk. The PPF can show this:



- Producing at points A and B are the most efficient combinations of output on the PPF. Producing at B, so more yoghurt than cheese is produced, incurs an opportunity cost of producing more cheese.
- The law of diminishing returns states that the opportunity cost of producing more yoghurt increases, in terms of the lost units of cheese that could have been produced.
- Producing at C or D is inefficient, and resources are not used to their full productive potential. There is the potential to use these resources more efficiently, which would shift production closer to the curve.
- Producing at E is not yet attainable with the current resources.



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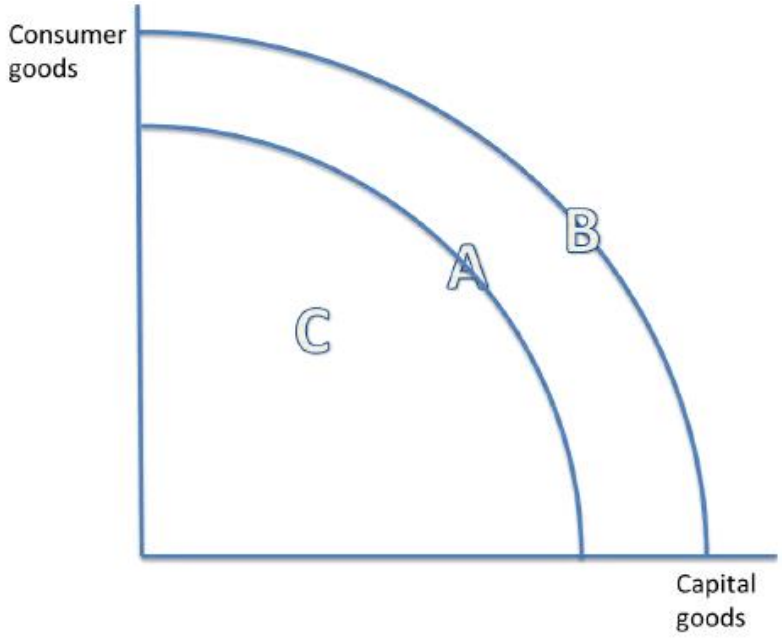
- This PPF shows the opportunity cost of producing each product.
  Producing 100 units of cheese means that only 40 units of yoghurt can be produced instead of the potential of 90. Therefore, the opportunity cost is 90 - 40 = 50 units of yoghurt.

Economic growth and decline:

- The PPF can also depict economic growth or decline. Only production under and on the PPF is attainable. Production outside of the PPF is not obtainable. However, only production on the PPF uses resources efficiently (A and B). It is inefficient to produce below the PPF (point C).



- Economic growth can be shown by an outward shift in the PPF, from the curve with point A on it, to the curve with point B on it. A decline in the economy would be depicted by an inward shift.
- The original curve is drawn assuming:
  - A fixed amount of resources are used
  - There is a constant state of technology
- An increase in the quantity or quality of resources shifts the PPF curve outwards, so the productive potential of the economy increases, and there is economic growth.
  This can be achieved with the use of supply side policies.
- A PPF curve may shift inwards as a result of a decrease in the quality or quantity of resources in an economy. A country may see their PPF curve shift inwards if they are affected by natural disasters, such as flooding, or if there is brain drain.
- Moving along the PPF is different to shifting the PPF.
- Moving along the PPF uses the same number and state of resources, and shifts production from fewer consumer goods to more capital goods, for instance. This incurs an opportunity cost. Shifting the PPF curve outwards, for example, uses either more resources or resources of a greater quality. This reduces the opportunity cost of producing either capital or consumer goods, since more goods can be produced overall.

- **Capital goods** are goods which can be used to produce other goods, such as machinery.
- **Consumer goods** are goods which cannot be used to produce other goods, such as clothing.

Specialisation and the Division of Labour

- Specialisation occurs when each worker is completes a specific task in a production process. The concept was famously stated by Adam Smith, who showed how, through the division of labour, worker productivity can increase. Firms can then take advantage of increased efficiency and lower average costs of production.
- An extract from *The Wealth of Nations,* Adam Smith:
  "To take an example, therefore, from a very trifling manufacture; but one in which the division of labour has been very often taken notice of, the trade of the pin-maker; a workman not educated to this business … could scarce, perhaps, with his utmost industry, make one pin in a day, and certainly could not make twenty. But in the way,
  in which this business is now carried on, not only the whole work is a peculiar trade, but it is divided into a number of branches, of which the greater part are likewise peculiar trades. One man draws out the wire, another straights it, a third cuts it, a fourth points it, a fifth grinds it at the top for receiving the head; to make the head requires two or three distinct operations; to put it on, is a peculiar business, to whiten the pins is another; it is even a trade by itself to put them into the paper; and the important business of making a pin is, in this manner, divided into about eighteen distinct operations, which, in some manufactories, are all performed by distinct hands, though in others the same man will sometimes perform two or three of them… But though they were very poor, and therefore but indifferently accommodated with the necessary machinery, they could, when they exerted themselves, make among them about twelve pounds of pins in a day. There are in a pound upwards of four thousand pins of a middling size. Those ten persons, therefore, could make among them upwards of forty-eight thousand pins in a day."
- Smith essentially said that by dividing the production of pins into 18 different tasks, the output of pins could increase significantly. Each worker specialises and output increases.
- Specialisation can be achieved by individuals, businesses, regions of countries or countries themselves.

- **Advantages:**
  - Higher output and potentially higher quality, since production focusses on what people and businesses are best at.
  - There could be a greater variety of goods and services produced.
  - There are more opportunities for economies of scale, so the size of the market increases.
  - There is more competition and this gives an incentive for firms to lower their costs, which helps to keep prices down.

- **Disadvantages:**
    - Work becomes repetitive, which could lower the motivation of workers, potentially affecting quality and productivity. Workers could become dissatisfied.
    - There could be more structural unemployment, since skills might not be transferable, especially because workers have focussed on one task for so long.
    - By producing a lot of one type of good through specialisation, variety could in fact decrease for consumers.
    - There could be higher worker turnover for firms, which means employees become dissatisfied with their jobs and leave regularly.

The functions of money:

- **A medium of exchange:** without money, transactions were conducted through bartering. Goods and services were traded with other goods and services, but people did not always get exactly what they wanted or needed. The goods and services exchanged were not always of the same value, which also posed a problem. Exchange could only take place if there was a double coincidence of wants, i.e. both parties have to want the good the other party offer. Using money eliminates this problem.
- **A measure of value (unit of account):** Money provides a means to measure the relative values of different goods and services. For example, a piece of jewellery might be considered more valuable than a table because of the relative price, measured by money. Money also puts a value on labour.
- **A store of value:** Money has to hold its value to be used for payment. It can be kept for a long time without expiring. However, the quantity of goods and services that can be bought with money fluctuates slightly with the forces of supply and demand.
- **A method of deferred payment:** Money can allow for debts to be created. People can therefore pay for things without having money in the present, and can pay for it later. This relies on money storing its value.

Free Market Economies, Mixed Economy and Command Economy

Free market economies:

- Also known as ***laissez-faire economies,*** where governments leave markets to their own devices, so the market forces of supply and demand allocate scarce resources.
- Economic decisions are taken by private individuals and firms, and private individuals own everything. There is no government intervention.
- In reality, governments usually intervene by implementing laws and public services, such as property rights and national defence.
- Adam Smith and Friedrich Hayek were famous free market economists. Adam Smith's famous theory of the invisible hand of the market can be applied to free market economies and the price mechanism, which describes how prices are determined by the 'spending votes' of consumers and businesses. Smith recognised some of the issues with monopoly power that could arise from a free market, however. Hayek argued that government intervention makes the market worse. For example, shortly after the 1930s crash, he argued that the Fed caused the crash by keeping interest rates low, and encouraging investments which were not economically worthwhile: 'malinvestments'.
- **What to produce:** determined by what the consumer prefers
- **How to produce it:** producers seek profits
- **For whom to produce it:** whoever has the greatest purchasing power in the economy, and is therefore able to buy the good

Advantages:

- Firms are likely to be efficient because they have to provide goods and services demanded by consumers. They are also likely to lower their average costs and make better use of scarce resources. Therefore, overall output of the economy increases.
- The bureaucracy from government intervention is avoided.
- Some economists might argue the freedom gained from having a free economy leads to more personal freedom.

Disadvantages:

- The free market ignores inequality, and tends to benefit those who hold most of the wealth. There are no social security payments for those on low incomes.
- There could be monopolies, which could exploit the market by charging higher prices.
- There could be the overconsumption of demerit goods, which have large negative externalities, such as tobacco.
- Public goods are not provided in a free market, such as national defence.
- Merit goods, such as education, are underprovided.

Command economy:

This is where the government allocates all of the scarce resources in an economy to where they think there is a greater need. It is also referred to as central planning.

- Karl Marx saw the free market as unstable. He saw profits created in the free market as coming from the exploitation of labour, and by not paying workers to cover the value of their work. He argued for the "common ownership of the means of production".
- **What to produce:** determined by what the government prefers
- **How to produce it:** governments and their employees
- **For whom to produce it:** who the government prefers

Advantages:

- It might be easier to coordinate resources in times of crises, such as wars.
- The government can compensate for market failure, by reallocating resources. They might ensure everyone can access basic necessities.
- Inequality in society could be reduced, and society might maximise welfare rather than profit.
- The abuse of monopoly power could be prevented.

Disadvantages:

- Governments fail, as do markets, and they may not be fully informed for what to produce.
- They may not necessarily meet consumer preferences.
- It limits democracy and personal freedom.

Mixed economy:

- This has features of both command and free economies and is the most common economic system today. There are different balances between command and free economies in reality, though. The UK is generally considered quite central, whilst the US is slightly more free (although the government spends around 35% of GDP) and Cuba is more centrally planned.
- The market is controlled by both the government and the forces of supply and demand.
- Governments often provide public goods such as street lights, roads and the police, and merit goods, such as healthcare and education.
- **What to produce:** determined by both consumer and government preferences
- **How to produce it:** determined by producers making profits and the government
- **For whom to produce it:** both who the government prefers and the purchasing power of private individuals.

Rational Decision Making

- When making economic decisions, consumers aim to maximise their utility and firms aim to maximise profits.
- A consumer's utility is the total satisfaction received from consuming a good or service.
- There are techniques that simplify the decision making process to come to a reasonable decision. They are shortcuts to avoid taking too long to make the decision, and they avoid the problem of having imperfect information or limited time.
- For example, the consumer might use common sense or intuition. They might consider how it is cheaper to buy goods in the sale. They might have pre-decided criteria, or a rule-of-thumb, and only buy the good if it is in a sale. This could lead to irrational decisions being made.
- Consumers do not always act rationally. Acting rationally means making a decision that results in the most optimal level of utility or benefit for the consumer.
- The rational consumer is a utility maximiser and makes rational decisions.

Reasons Why Consumers May not Behave Rationally

- **The influence of other people's behaviour**
  Assume there are two restaurants; one is empty whilst the other has a long queue. Consumers are more likely to queue for their food than go straight into the other restaurant. The behaviour of other people affects how the consumer acts.

  Other people's behaviour creates a bias within the consumer. This social pressure encourages consumers to do things they would not otherwise do, or that they know could be harmful. Consumers become unwilling to change, even if it is of benefit to them, if it goes against the norms of their society.

- **The importance of habitual behaviour**
  Habits reduce the amount of time it takes to do something, because consumers no longer have to consciously think about their actions. For example, a commute to work becomes a habit over time. Habits create a barrier to making a decision. They limit or prevent consumers considering an alternative. A commuter who is familiar with one route to work is unlikely to consider an alternative route, because they would have to re-familiarise themselves with it.

  For example, it is hard for consumers to give up smoking, even if they know it is good for them, because they are habituated to it. Similarly, consumers might find it hard to save for the future, such as for a pension, because they have a habit of spending in the

present. Breaking a habit causes withdrawal symptoms in the consumer, which may make them feel uncomfortable, so they continue to commit the irrational action.

- **Consumer weakness at computation**

  Irrationality arises when consumer's decisions are dominated by **computational weakness**. This occurs when consumers find it difficult to calculate the probability of getting bowel cancer through the consumption of bacon in the future. They often **underestimate the impact** of processed meat on their health, on a later stage of their life. As a result they make an irrational decision to eat bacon.

  Bacon is just an example of irrational decision making. There are many other examples which illustrate our weakness to make rational decisions. From bacon to electricity providers, there are millions of decisions we take every day which are based on inaccurate/imperfect information or the overload of information which might be presented to us, making it impossible to choose what is best for us. Adding to these, the influence of other peoples' behaviour and the habits we are not willing to change leads to irrationality as well.

  In the UK, consumers find it hard to choose among the different electricity providers. This is due to complexity of the information presented to them, on their monthly tariffs. A possible solution to this problem could be an online platform comparing the tariffs offered by all electricity suppliers, to make it simpler for consumers to compare and decide.

Demand

- Demand is the **quantity of a good or service that consumers are able and willing to buy at a given price during a given period of time.**
- Demand varies with price. Generally, the lower the price, the more affordable the good and so consumer demand increases. This can be illustrated with the demand curve.

Movements along the demand curve:

- At price P1, a quantity of Q1 is demanded. At the lower price of P2, a larger quantity of Q2 is demanded. This is an **expansion** of demand. At the higher price of P3, a lower quantity of Q3 is demanded. This is a **contraction** of demand. Only changes in price will cause these movements along the demand curve.

Shifting the demand curve:

- Price changes do not shift the demand curve. A shift from D1 to D2 is an inward shift in demand, so a lower quantity of goods is demanded at the market price of P1. A shift from D1 to D3 is an outward shift in demand. More goods are demanded at the market price of P1.
- The factors that shift the demand curve can be remembered using the mnemonic

  PIRATES:
  - **P- Population.** The larger the population, the higher the demand. Changing the structure of the population also affects demand, such as the distribution of different age groups.
  - **I- Income.** If consumers have more disposable income, they are able to afford more goods, so demand increases.
  - **R- Related goods.** Related goods are **substitutes** or **complements**. A substitute can replace another good, such as two different brands of TV. If the price of the substitute falls, the quantity demanded of the original good will fall because consumers will switch to the cheaper option. A complement goes with another good, such as strawberries and cream. If the price of strawberries increases, the demand for cream will fall because fewer people will be buying strawberries, and hence fewer people will be buying cream.
  - **A- Advertising.** This will increase consumer loyalty to the good and increase demand.
  - **T- Tastes and fashions.** The demand curve will also shift if consumer tastes change. For example, the demand for physical books might fall, if consumers start preferring to read e-books.
  - **E- Expectations.** This is of future price changes. If speculators expect the price of shares in a company to increase in the future, demand is likely to increase in the present.
  - **S- Seasons.** Demand changes according to the season. For example, in the summer, the demand for ice cream and sun lotions increases.

Diminishing marginal utility:

- The demand curve is downward sloping, showing the inverse relationship between price and quantity.
- The law of diminishing marginal utility states that as an extra unit of the good is consumed, the marginal utility, i.e. the benefit derived from consuming the good, falls. Therefore, consumers are willing to pay less for the good.
- This can be explained using the example of chocolate. The first chocolate bar will benefit the consumer more, because it satisfies more of their needs, and so the consumer is willing to pay more for it. The second bar will satisfy the consumer less, because they have less need for it, and the consumer will be willing to pay less for it.

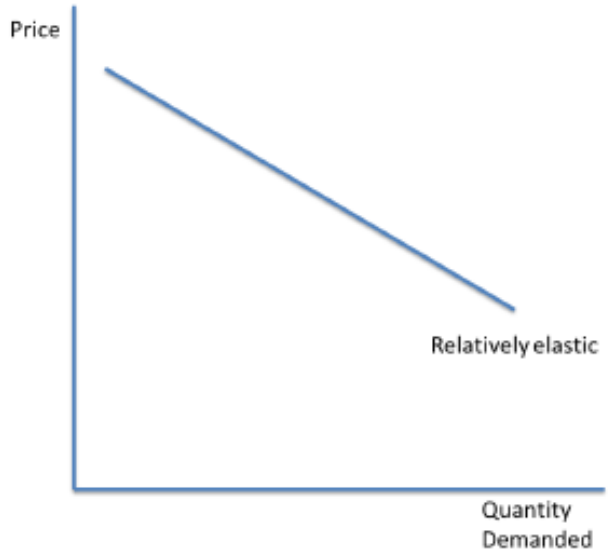
  Eventually the utility derived will become zero.

Price Elasticities of Demand

- The price elasticity of demand is the responsiveness of a change in demand to a change in price. The formula for this is:

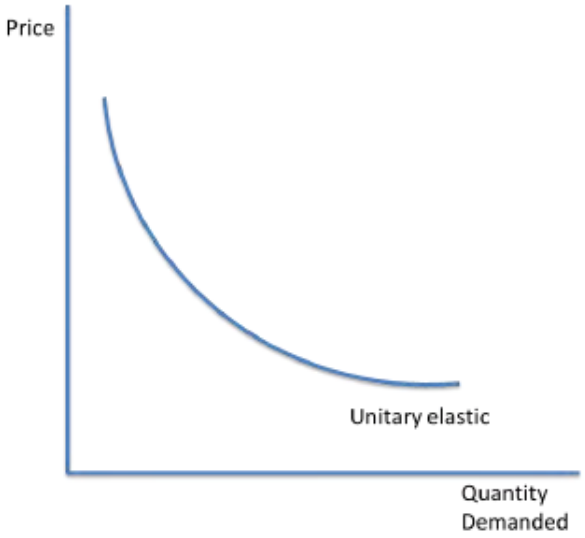
$$PED = \frac{\%\Delta QD}{\%\Delta P}$$

- A price elastic good is very responsive to a change in price. In other words, the change in price leads to an even bigger change in demand. The numerical value for PED is >1.



- A price inelastic good has a demand that is relatively unresponsive to a change in price. PED is <1.

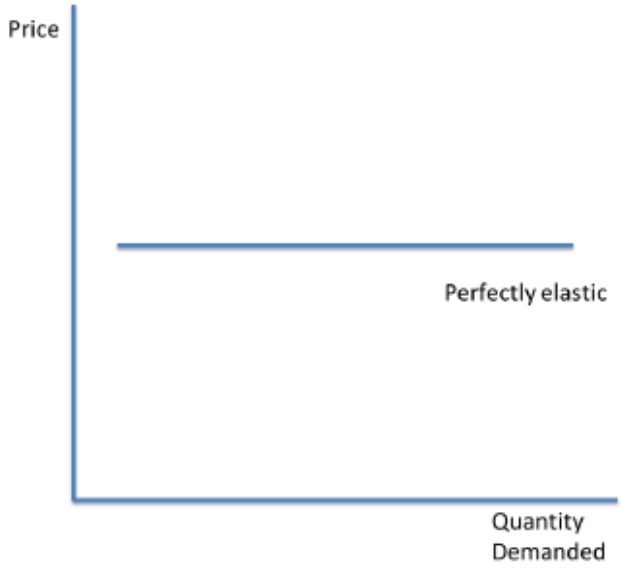
- A unitary elastic good has a change in demand which is equal to the change in price. PED = 1. The demand curve for a good with a PED of 1 is a curve because for a 1% decrease in the price there is a 1% increase in the quantity demanded. This relationship between price and quantity demanded forms the curve seen below.



- A perfectly inelastic good has a demand which does not change when price changes.
  PED = 0.

A perfectly inelastic good has a demand which does not change when price changes.
PED = 0.

- A perfectly elastic good has a demand which falls to zero when price changes. PED = infinity.



- If the price of bread increased by 15%, and the quantity demanded decreased by 20%, the PED of bread is: -20% / 15% = -1.33. Since the value is negative, bread is relatively price inelastic.

Factors influencing PED:

1) Necessity:

A necessary good, such as bread or electricity, will have a relatively inelastic demand. In other words, even if the price increases significantly, consumers will still demand bread and electricity, because they need it. Luxury goods, such as holidays, are more elastic. If the price of flights increases, the demand is likely to fall significantly.

2) Substitutes:

If the good has several substitutes, such as Android phones instead of iPhones, then the demand is more price elastic. The elasticity can also change within markets. For example, the market for bread is less elastic than the market for white bread. This is because there are fewer substitutes for bread in general, but there are several substitutes for white bread. Hence, white bread is more price elastic. The closer and more available the substitutes are, the more price elastic the demand.

Elasticity also changes in the long and short run. In the long run, consumers have time to respond and find a substitute, so demand becomes more price elastic. In the short run, consumers do not have this time, so demand is more inelastic.

3) Addictiveness or habitual consumption:

The demand for goods such as cigarettes is not sensitive to a change in price because consumers become addicted to them, and therefore continue demanding the cigarettes, even if the price increases.

4) Proportion of income spent on the good:

If the good only takes up a small proportion of income, such as a magazine which increases in price from £1.50 to £2, demand is likely to be relatively price inelastic.
If the good takes up a significant proportion of income, such as a car which increases in price from £15,000 to £20,000, the demand is likely to be more price elastic.

5) Durability of the good:

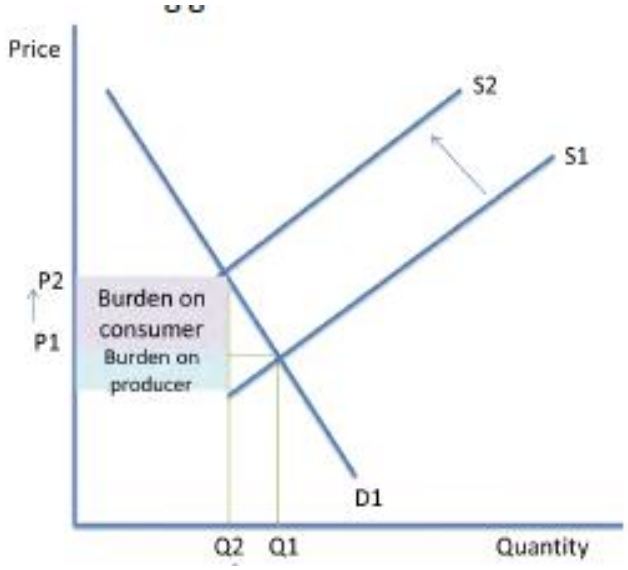
A good which lasts a long time, such a washing machine, has a more elastic demand because consumers wait to buy another one.

6) Peak and off-peak demand:

During peak times, such as 9am and 5pm for trains, the demand for tickets is more price inelastic.

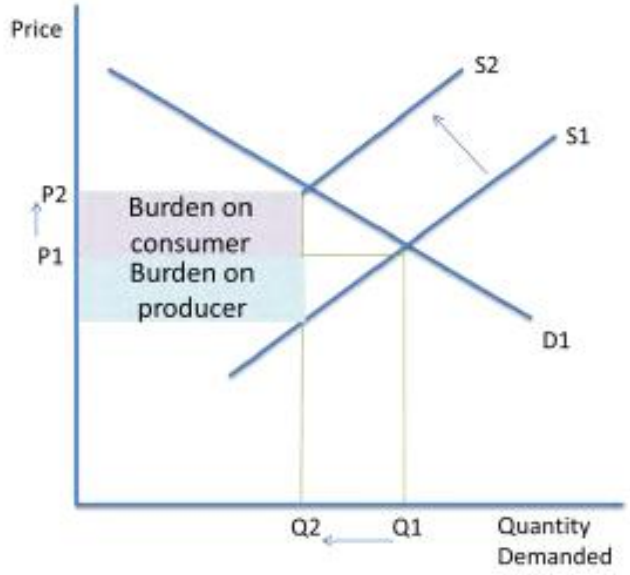
Elasticity of demand and tax revenue:

- The burden, or incidence, of an indirect tax will fall differently on consumers and firms, depending on if the good has an elastic or inelastic demand. It is important to note, however, that taxes shift the supply curve, not the demand curve.
- If a firm sells a good with an inelastic demand, they are likely to put most of the tax burden on the consumer, because they know a price increase will not cause demand to fall significantly. An increase in tax will decrease supply from S1 to S2, which increases price from P1 to P2, and therefore demand contracts from Q1 to Q2.
  This is most effective for raising government revenue.



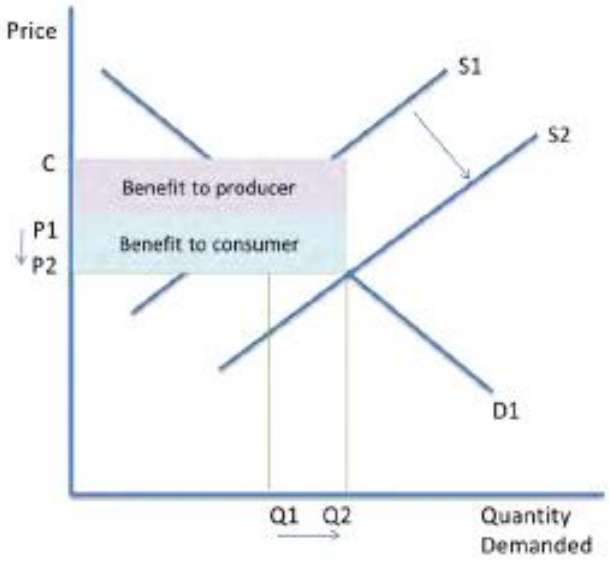
- If a firm sells a good with an elastic demand, they are likely to take most of the tax burden upon themselves. This is because they know if the price of the good increases, demand is likely to fall, which will lower their overall revenue.

- This is not as effective for raising government revenue, but if a government wants to reduce the demand of a particular good, it is effective. Demand will fall significantly, from Q1 to Q2.



Elasticity of demand and subsidies:

- A subsidy is a payment from the government to firms to encourage the production of a good and to lower their average costs. It has the opposite effect of a tax because it increases supply. The benefit of the subsidy can go to both the producer, in the form of increased revenue (C-P1), or to the consumer, in the form of lower prices (P1-P2).



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PED and total revenue:

- Total revenue is equal to average price times quantity sold. TR= P x Q
- If a good has an inelastic demand, the firm can raise its price, and quantity sold will not fall significantly. This will increase total revenue.
- If a good has an elastic demand and the firm raises its price, quantity sold will fall. This will reduce total revenue.

Income and Cross Elasticities of Demand

Income elasticity of demand is the responsiveness of a change in demand to a change inn income. The formula for this is:

$$YED = \frac{\%\Delta QD}{\%\Delta Y}$$

Inferior, normal and luxury goods:

- **Inferior goods** are those which see a fall in demand as income increases. For example, the 'value' options at supermarkets could be seen as inferior. As income increases, consumers switch to branded goods. YED < 0.
- With **normal goods**, demand increases as income increases. YED >0.
- With **luxury goods**, an increase in income causes an even bigger increase in demand.
  YED > 1. For example, a holiday is a luxury good. Luxury goods are also normal goods, and they have an elastic income.
- During periods of prosperity, such as economic growth when real incomes are rising, firms might switch to producing more luxury goods and fewer inferior goods, because demand for luxury goods will be increasing.

Cross elasticity of demand

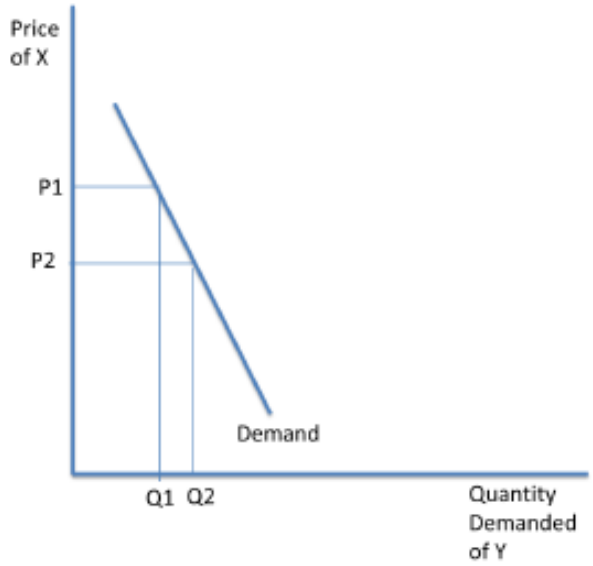
- Cross elasticity of demand is the responsiveness of a change in demand of one good, X, to a change in price of another good, Y. The formula for this is:

$$XED = \frac{\%\Delta QD \text{ of } X}{\%\Delta P \text{ of } Y}$$

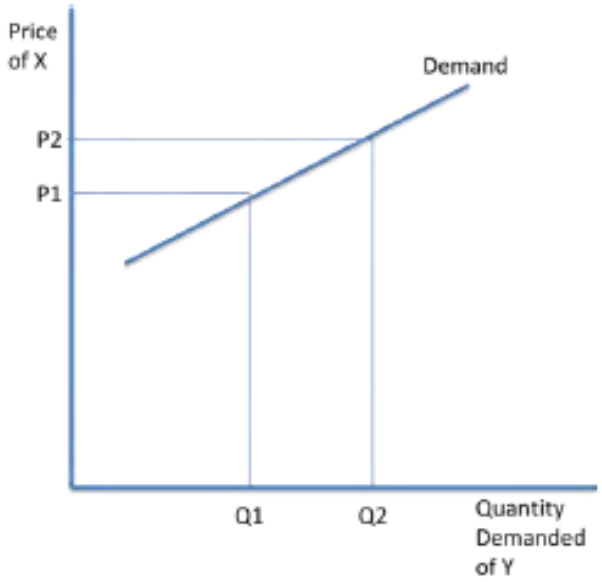
Complements, substitutes and unrelated goods:

- Complementary goods have a negative XED. If one good becomes more expensive, the quantity demanded for both goods will fall.
- Close complements: a small fall in the price of good X leads to a large increase in QD of Y.

- Weak complements: a large fall in the price of good X leads to only a small increase in QD of Y.



- Substitutes can replace another good, so the XED is positive and the demand curve is upward sloping. If the price of one brand of TV increases, consumers might switch to another brand.
- Close substitutes: a small increase in the price of good X leads to a large increase in QD of Y.



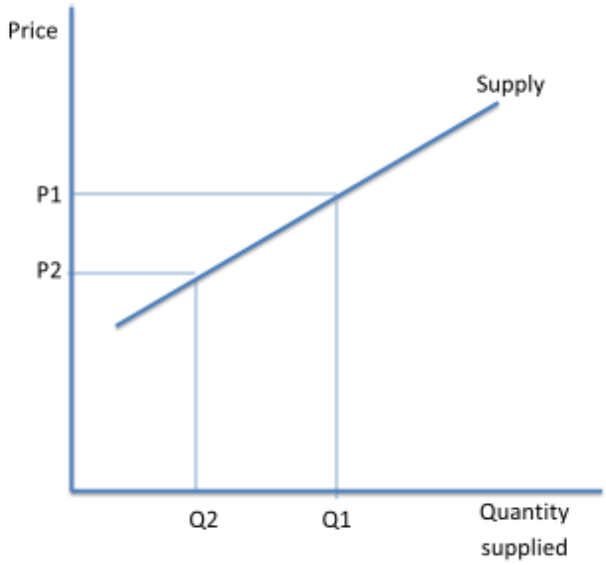
- Weak substitutes: a large increase in the price of good X leads to a smaller increase
  in QD of Y.

- Unrelated goods have a XED equal to zero. For example, the price of a bus journey has no effect on the demand for tables.
- Firms are interested in XED because it allows them to see how many competitors they have. Therefore, they are less likely to be affected by price changes by other firms, if they are selling complementary goods or substitutes.

Supply

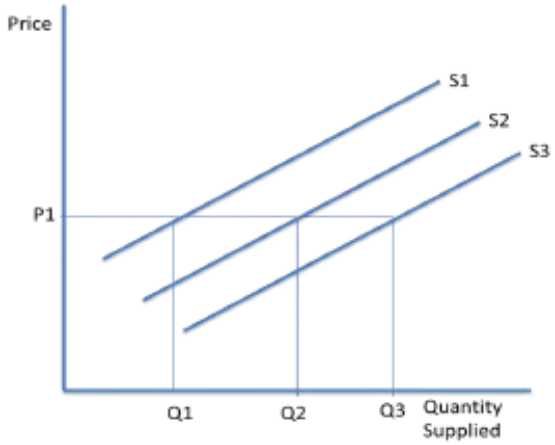
- Supply is the **quantity of a good or service that a producer is able and willing to supply at a given price during a given period of time.**
- Supply curves are upward sloping because:
    - If price increases, it is more profitable for firms to supply the good, so supply increases.
    - High prices encourage new firms to enter the market, because it seems profitable, so supply increases.
    - With larger outputs, firm's costs increase, so they need to charge a higher price to cover the costs.

Movements along the supply curve:



- At price P1, a quantity of Q1 is supplied. At the lower price of P2, Q2 is supplied.
  This is a **contraction** of supply. If price increases from P2 to P1, QS increases from Q2 to Q1. This is an **expansion** of supply. Only changes in price will cause these movements along the supply curve. This is based on the theory of the **profit motive.** Firms are driven by the desire to make large profits.

Shifting the supply curve:



- Price changes do not shift the supply curve. A shift from S1 to S2 is an outward shift in supply, so a larger quantity of goods is supplied at the market price of P1. A shift from S3 to S1 is an inward shift in supply. More goods are supplied at the market price of P1.
- The factors that shift the supply curve can be remembered using the mnemonic
  PINTSWC:
  - **P- Productivity.** Higher productivity causes an outward shift in supply, because average costs for the firm fall.
  - **I- Indirect taxes.** Inward shift in supply.
  - **N- Number of firms.** The more firms there are, the larger the supply.
  - **T- Technology.** More advanced the technology causes an outward shift in supply.
  - **S- Subsidies.** Subsidies cause an outward shift in supply.
  - **W- Weather.** This is particularly for agricultural produce. Favourable conditions will increase supply.
  - **C- Costs of production.** If costs of production fall, the firm can afford to supply more. If costs rise, such as with higher wages, there will be an inward shift in supply.
  - Also, a depreciation in the exchange rate will increase the cost of imports, which will cause an inward shift in supply. A depreciation in the pound against the US dollar causes a reduction in the purchasing power of the pound when buying goods in dollars. This makes it more expensive for firms to import raw materials from the USA.

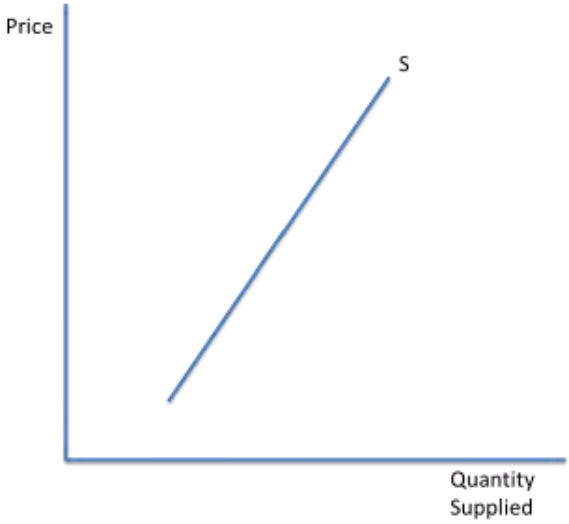
Price elasticity of supply

- The price elasticity of supply is the responsiveness of a change in supply to a change in price. The formula for this is:

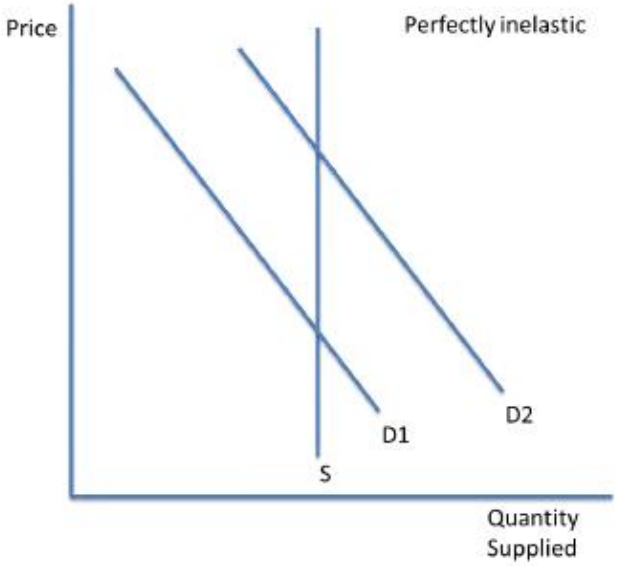
$$PES = \frac{\%\Delta QS}{\%\Delta P}$$

- If supply is elastic, firms can increase supply quickly at little cost. The numerical value for PES is >1.

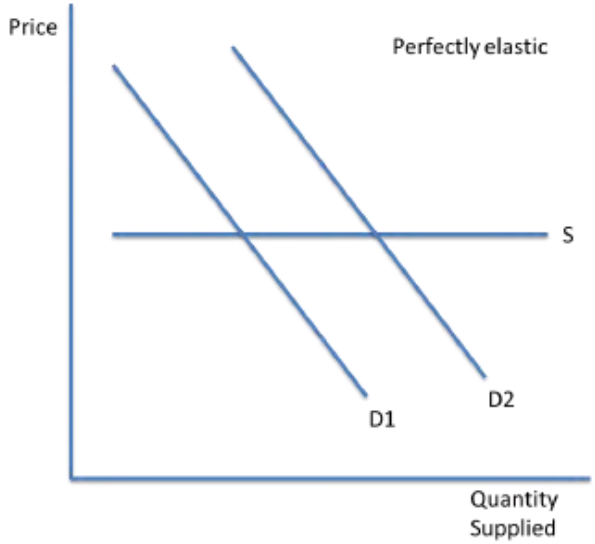
- If supply is inelastic, an increase in supply will be expensive for firms and take a long time. PES is <1.



- A perfectly inelastic supply has PES = 0. Supply is fixed, so if there is a change in demand, it cannot be met easily.



- Supply is perfectly elastic when PES = infinity. Any quantity demanded can be met without changing price.



- If the price of producing wheat increased by 15%, and the quantity supplied decreased by 20%, the PES of wheat is: -20% / 15% = -1.33. Since the value is negative, the supply of wheat is relatively price inelastic.

Factors influencing PES:

1) Time scale:

In the short run, supply is more price inelastic, because producers cannot quickly increase supply. In the long run, supply becomes more price elastic. The short run is the period of time in which at least one factor of production is fixed. The long run is the period of time in which all factors of production are variable.

2) Spare capacity:

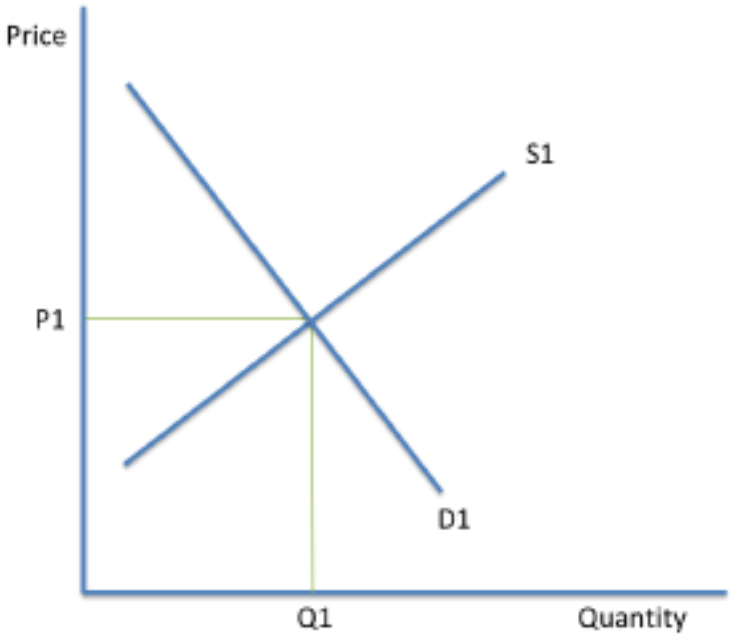
If the firm is operating at full capacity, there is no space left to increase supply. If there are spare resources, for example in a recession there are lots of spare and unemployed resources, supply can be increased quickly.

3) Level of stocks:
If goods can be stored, such as CDs, firms can stock them and increase market supply easily. If the goods are perishable, such as apples, firms cannot stock them for long so supply is more inelastic.
4) How substitutable factors are:
If labour and capital are mobile, supply is more price elastic because resources can be allocated to where extra supply is needed. For example, if workers have transferable skills, they can be reallocated to produce a different good and increase the supply of it.
5) Barriers to entry to the market:
Higher barriers to entry means supply is more price inelastic, because it is difficult for new firms to enter and supply the market.

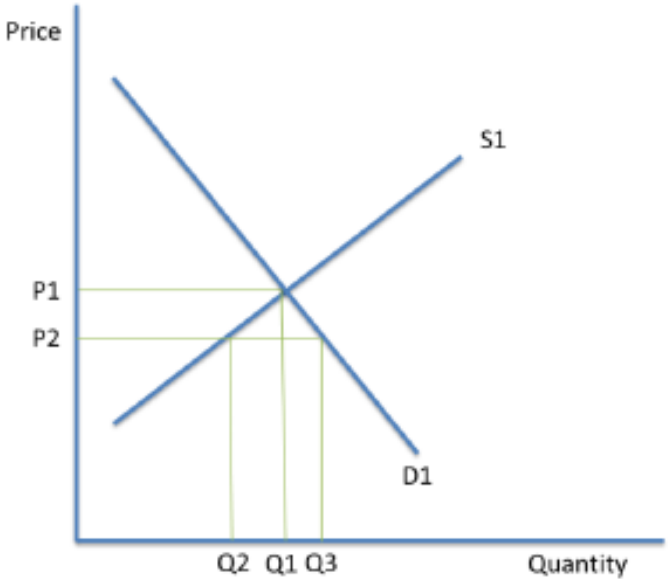
Market Equilibrium (Price Determination)

Equilibrium price and quantity

- This is when supply meets demand. On the diagram, this is shown by P1 and Q1.
  At market equilibrium, price has no tendency to change, and it is known as the **market clearing price.**



Excess demand



- At Q2, price is at P2 which is below market equilibrium. Demand is now greater than supply, which can be calculated by Q3-Q2.
- This is a **shortage** in the market. This pushes prices up and causes firms to supply more. Since prices increase, demand will contract.
- Once supply meets demand again, price will reach the market clearing price, P1.

Excess supply

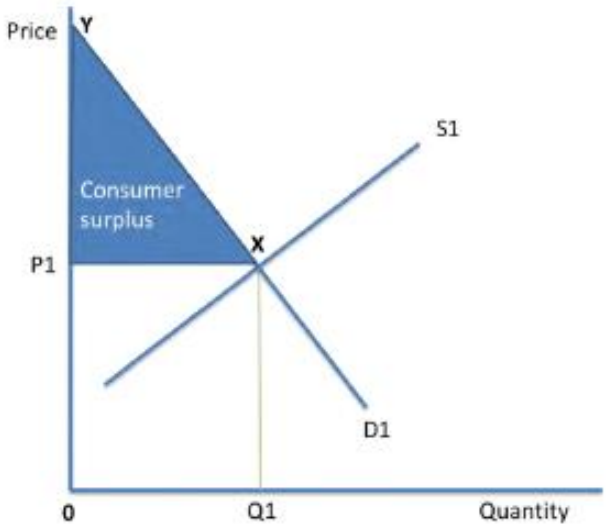
- This is when price is above P1.

- Supply is now at Q2 and demand is at Q1. There is a **surplus** of Q2- Q1. Price will fall back to P1 as firms lower their prices and try to sell their goods. The market will clear and return to equilibrium.

Consumer Surplus

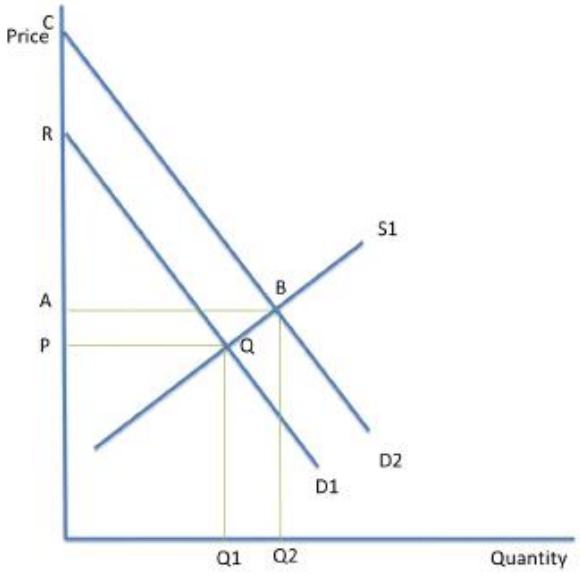
- This is the difference between the price the consumer is willing and able to pay and the price they actually pay. This is based on what the

consumer perceives their **private benefit** will be from consuming the good.



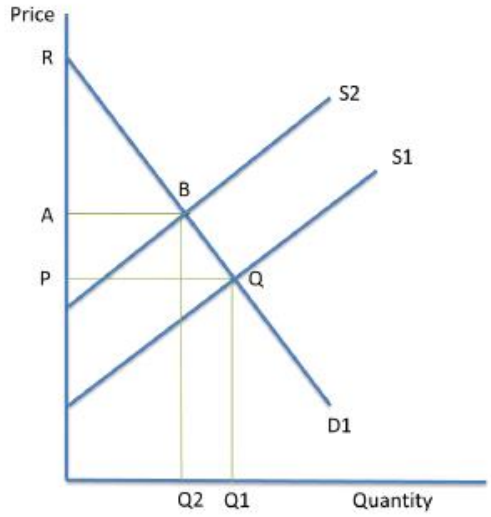
- Consumers pay price P1 and demand a quantity of Q1. This is shown by area P10Q1X.The total benefit to the consumer is area 0Q1XY, but because they pay price P10Q1X, the net gain to the consumer P1XY, the shaded triangle. This is consumer surplus.
- It is always the area above market price and below the demand curve.
- Due to the law of diminishing marginal utility, consumer surplus generally declines with extra units consumed. This is because the extra unit generates less utility than the one already consumed. Therefore, consumers are willing to pay less for extra units.
- Inelastic demand curves give a larger consumer surplus. This is because consumers are willing to pay a much higher price to consume the good.

Increasing consumer surplus:



- An increase in demand () from D1 to D2 increases consumer surplus from PQR to ABC.
- If there is increase in demand or increase in supply consumer surplus increases.

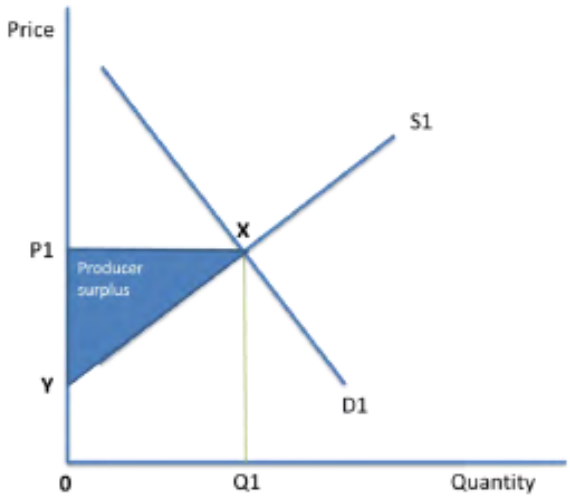
Decreasing consumer surplus:



- Supply has shifted to the left (Decrease in supply), which could be due to higher costs of production.
  This causes market price to increase, and consumer surplus decreases from PQR to ABR.
- If there is decrease in demand or decrease in supply consumer surplus decreases.

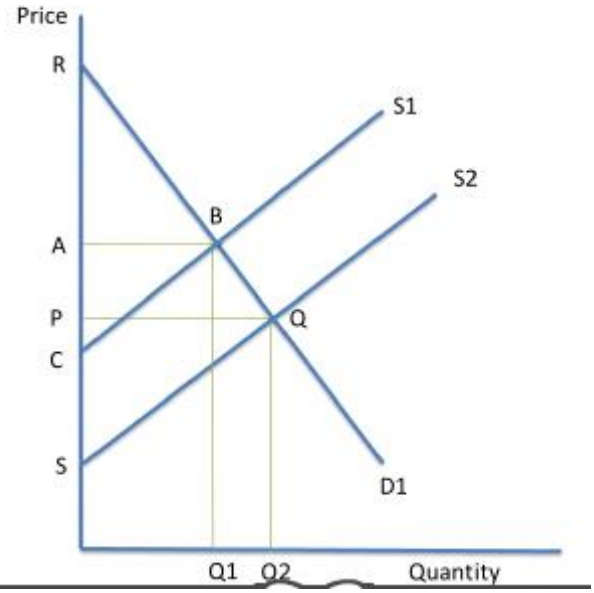
Producer Surplus

- This is the difference between the price the producer is willing to charge and the price they actually charge. In other words, it is the private benefit gained by the producer that covers their costs, and is measured by profit.

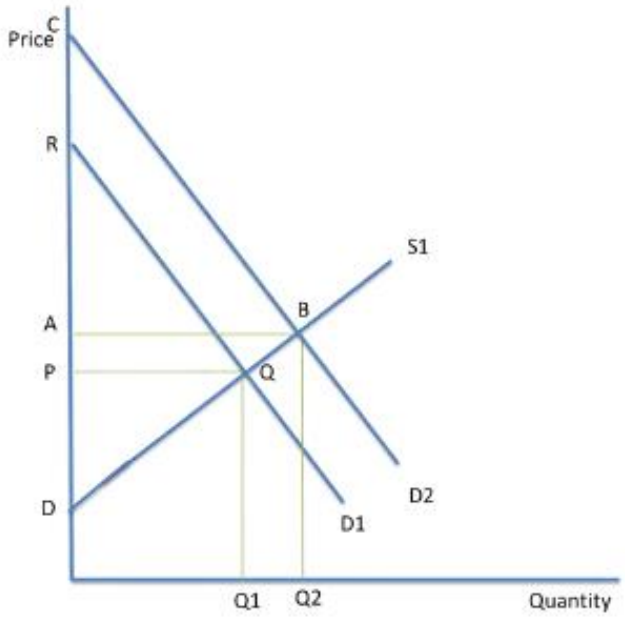


- This is always the area below the market price and above the supply curve.

Increasing producer surplus:



- This is caused by a shift in the supply curve from S1 to S2, which could be due to lower average production costs, for example. Therefore market price decreases and producer surplus increases.
- Producer surplus increases from ABC to PQS.
- This could also be due to an increase in demand which causes price to increase.

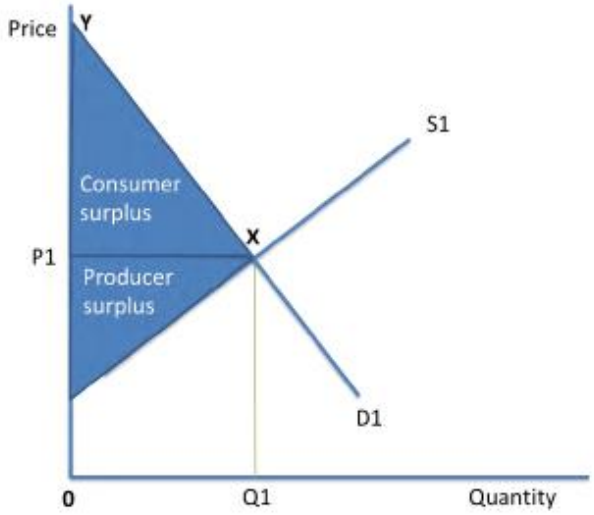


Producer surplus increases from area PQD to ABD.

Increase in Producer surplus- Increase in Demand/ Supply

Decrease in Producer surplus- Decrease in Demand/ Supply

Economic Welfare



- This is the total benefit society receives from an economic transaction.
- It is calculated by the area of producer surplus and consumer surplus added together.
- The sum of the consumer surplus and producer surplus is the community surplus.

Price Mechanism

Functions

- The price mechanism determines the market price. Adam Smith called this 'the invisible hand of the market'.
- Resources are allocated through the price mechanism in a free market economy. The economic problem of scarce resources is solved through this mechanism. The price moves resources to where they are demanded or where there is a shortage, and removes resources from where there is a surplus.
- The price mechanism uses three main functions to allocate resources:

o **Rationing**

When there are scarce resources, price increases due to the excess of demand. The increase in price discourages demand and consequently **rations** resources. For example, plane tickets might rise as seats are sold, because spaces are running out. This is a disincentive to some consumers to purchase the tickets, which rations the tickets.

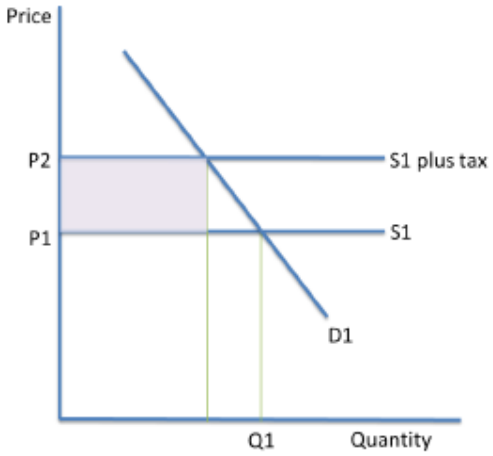
o **Incentive**

This encourages a change in behaviour of a consumer or producer. For example, a high price would encourage firms to supply more to the market, because it is more profitable to do so.

o **Signalling**
The price acts as a signal to consumers and new firms entering the market. The price changes show where resources are needed in the market. A high price **signals** firms to enter the market because it is profitable. However, this encourages consumers to reduce demand and therefore leave the market. This shifts the demand and supply curves.

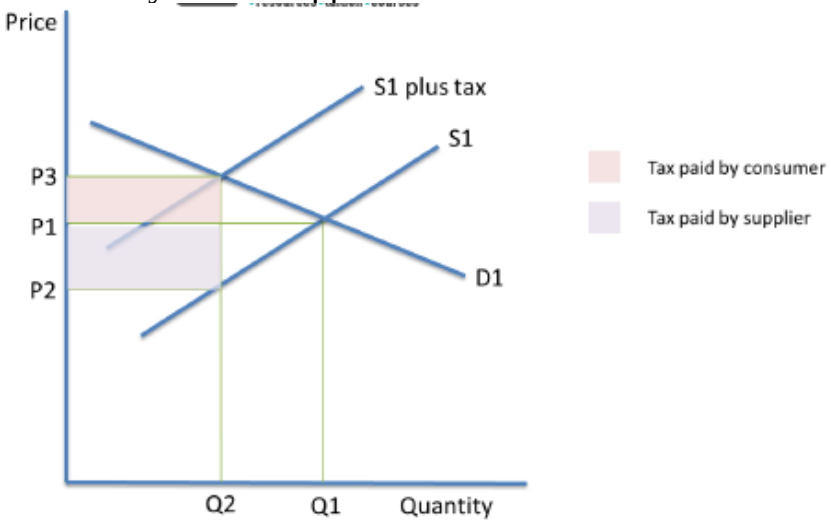
Indirect Taxes and Subsidies
Indirect Taxes

- Indirect taxes are imposed by the government and they increase production costs for producers. Therefore, producers supply less. This increases market price and demand contracts.
  Examples: Duties on cigarettes, alcohol, fuel and VAT.
  Indirect taxes are form of government intervention in the market.
- There are two types of indirect taxes:
  - **Ad valorem** taxes are percentages, such as VAT, which adds 20% of the unit price. This is the main indirect tax in the UK.
  - **Specific taxes** are a set tax per unit, such as the 58p per litre fuel duty on unleaded petrol.
- Diagrammatically, it is shown by the vertical distance between two supply curves.
- When demand is perfectly inelastic, or supply is perfectly elastic, the incidence of the tax falls wholly on the consumer. The shaded area shows the size of the tax paid by the consumer.

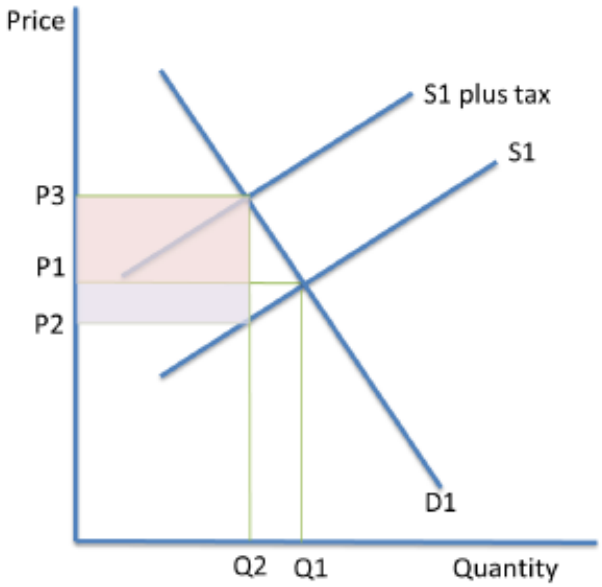


The burden of tax with different PEDs

- If demand is more elastic (PED>1), the incidence of the tax will fall mainly on the supplier.

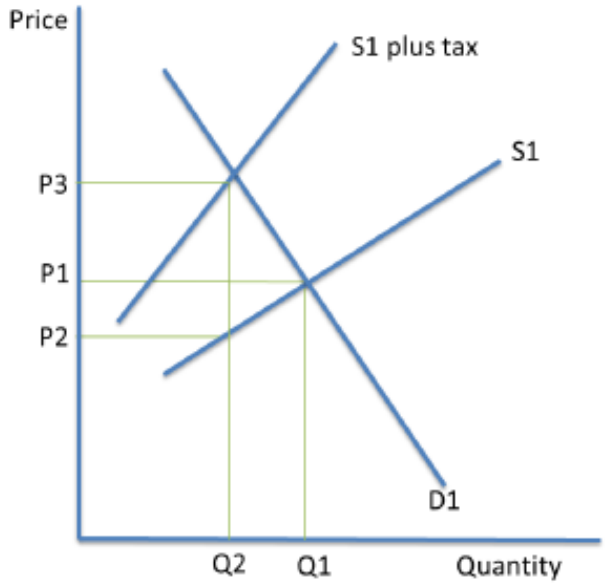


- If demand is more inelastic (PED<1), the incidence of the tax will fall mainly on the consumer.



Ad Valorem Taxes

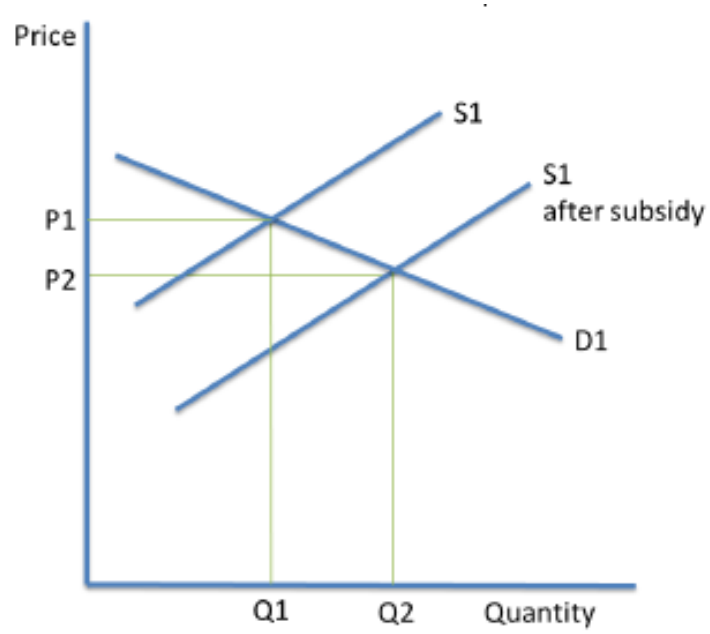
- Since the tax is a percentage of the cost of the good, the absolute value of the tax increases as the price of the good increases.
  For example, with VAT at 20%, a good costing £10 will have £2 of tax. A good costing £100 will have £20 of tax. This causes the supply curve to pivot.
  Increase in cost of production, Fall in supply.
  Amount of tax imposed is the vertical distance between New Supply curve(New equilibrium) to old supply curve.
  With indirect tax, producer may be able to pass on some or all of this tax onto the consumers through higher price. Shifting the burden of tax will depend on the elasticity of demand and supply curve.



- If demand is inelastic, government revenue from the tax is higher than if demand is elastic. This is because demand will only fall slightly with the tax.
- For example, the duty on tobacco and fuel raises a lot of government revenue, because demand for these goods is inelastic.
- Setting the right tax rate: If the tax is implemented with the intention of internalising the externality, it is hard to put a monetary value on the externality.
- Internalising the externality means the individual or firm which causes the negative externality, for example pollution, pays for the damage.
- Cost of collection is high: Taxes could be expensive for the government to collect. For e.g. expensive infrastructure like IT system of billing.
- Some taxes could be regressive, so they impact those on low and fixed incomes the most.
- Taxes could be inflationary: Higher indirect taxes may cause inflation affecting consumers who did not pollute also affects international competitiveness if taxes are higher in one country than other country.

Subsidies

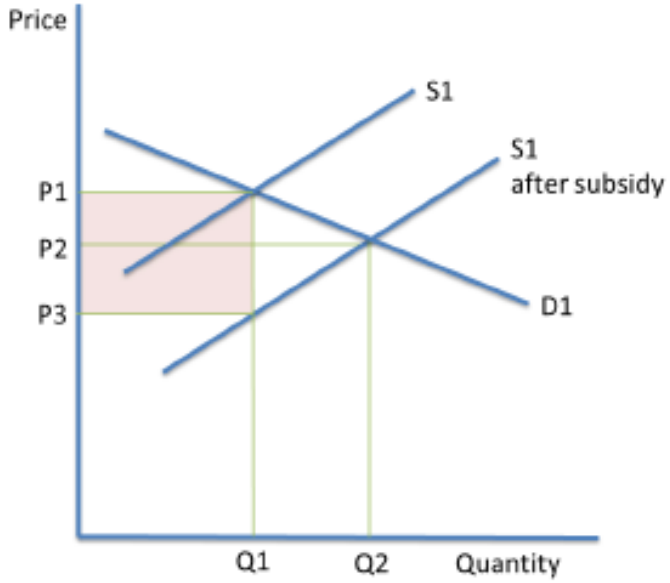
- A subsidy is a payment from the government to a producer to lower their costs of production and encourage them to produce more.
- For example, the government might provide apprenticeship schemes or help farmers by contributing towards their production costs.



- Subsidies shift the supply curve to the right, which lowers the market price.
- The vertical distance between the supply curves shows the value of the subsidy per unit.

Government spending on subsidy

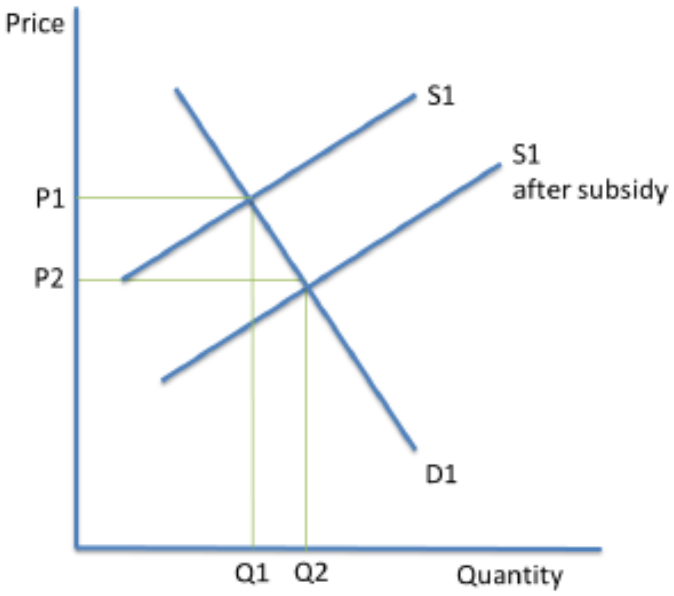
- This is shown by the shaded area and is calculated by the value of the subsidy per unit times the output.



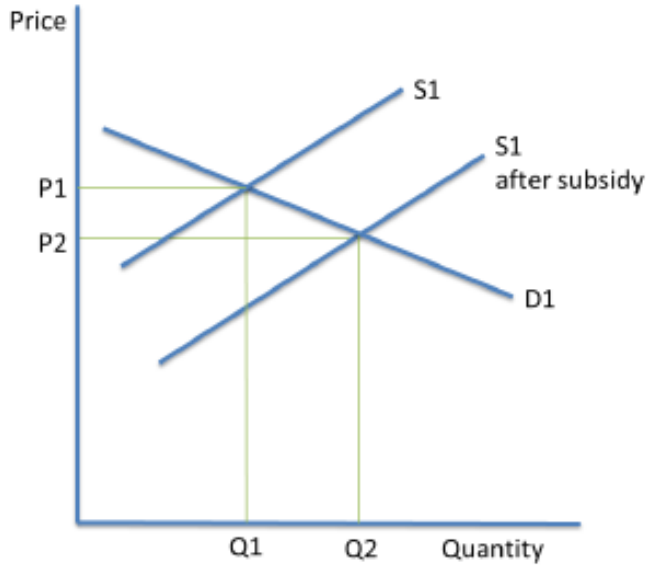
The consumer pays P3 and the producer receives P1, which includes the subsidy.

Effects of subsidies

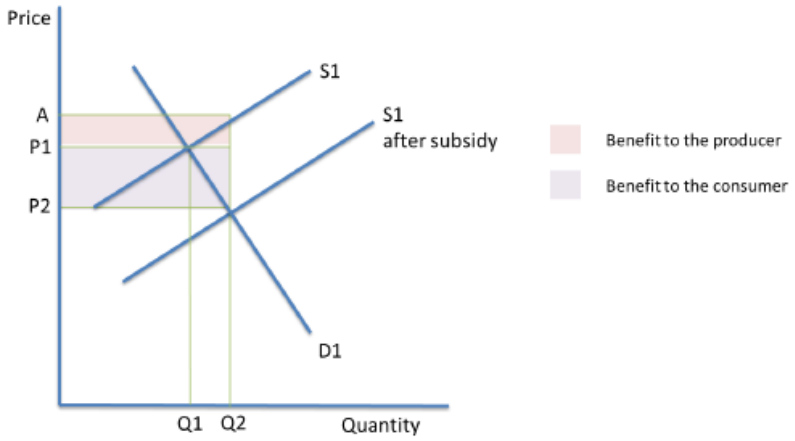
- Subsidies increase output and lower prices for consumers, which could help families on low and fixed incomes.
- They increase the employment rate, by making workers more skilled through apprenticeship schemes and lowering the cost of employing workers.
- They reduce inequality in society, if the subsidy is progressive.
- Subsidies could help control inflation, by keeping costs of production low.
- They could help boost demand during periods of economic decline.
- Subsidies could encourage the consumption of merit goods, which creates positive externalities.
- Long run aggregate supply could increase if the subsidy is aimed towards a capital project.
- There could be government failure, if the government provides an inefficient subsidy or if the subsidy distorts the market price.
- Government revenue could be better spent elsewhere. The opportunity cost of the subsidy should be considered.
- It is usually the tax payer who pays for the subsidy, and they might not receive any direct benefit from the subsidy.
- If demand is price inelastic, the subsidy will have a large effect on equilibrium price.
  This give a greater consumer gain than when demand is elastic.



- If demand is price elastic, the subsidy will have a large effect on quantity, and therefore benefit producers more.



Producer and Consumer Subsidies



- A consumer subsidy encourages consumers to purchase more of a particular good or service. It could be a direct grant or a loan without interest, for example.
- Consumer subsidies affect demand and do not shift the supply curve.
- Producer subsidies lower the cost of production and shift the supply curve.

Types of Market Failure

Market failure occurs when the free market fails to allocate resources to the best interests of society, so there is an **inefficient allocation of scarce resources.** Economic and social welfare is not maximised where there is market failure.

Types of market failure:

- **Externalities**
  An externality is the cost or benefit a third party receives from an economic transaction outside of the market mechanism. In other words, it is the spill over effect of the production or consumption of a good or service.
- **The under-provision of public goods**
  Public goods are non-excludable and non-rival, and they are underprovided in a free market because of the free-rider problem.
- **Information gaps**

It is assumed that consumers and producers have perfect information when making economic decisions. However, this is rarely the case, and this imperfect information leads to a misallocation of resources.

- **Moral hazards**
    - A moral hazard is a situation where there is a risk that the borrower does things that the lender would not deem desirable, because it makes the borrower less likely to repay a loan. It usually occurs when there is some form of insurance for the mistake. For example, if a house is insured, a borrower might be less careful because they know any damage caused will be paid for by someone else.
    - Banks might take more risks if they know the Bank of England or the government can help them if things go wrong. The financial crisis has been regarded as a moral hazard, due to the degree of risk taking.
- **Speculation and market bubbles**
  A market bubble occurs when the price of an asset is predicted to rise significantly. This causes it to be traded more, and demand exceeds supply so the price rises beyond the intrinsic value. The bubble then 'bursts' when the price steeply and suddenly falls to its ordinary level. This causes panic and investors try and sell their assets. It results in a loss of confidence and it can lead to economic decline or a depression.

Externalities

- An externality is the cost or benefit a third party receives from an economic transaction outside of the market mechanism. In other words, it is the spillover effect of the production or consumption of a good or service.
- Externalities can be **positive** (external benefits) or **negative** (external costs).
- The extent to which the market fails involves a value judgement, so it is hard to determine what the monetary value of an externality is. For example, it is hard to decide what the cost of pollution to society is. Different individuals will put a different value on it, depending on their own experiences with pollution, such as how polluted their home town is. This makes determining government policies difficult, too.

Private costs

- Private costs are the costs to economic agents involved directly in an economic transaction.
- Producers are concerned with private costs of production. For example, the rent, the cost of machinery and labour, insurance, transport and paying for raw materials are private costs. This determines how much the producer will supply.
- It could refer to the market price which the consumer pays for the good.

Social costs

- This is calculated by private costs plus external costs.
- It is the cost to society as a whole.
- On a diagram, external costs are shown by the vertical distance between the two curves. In other words, external costs are the difference between private costs and social costs.
- It can be seen that marginal social costs (MSC) and marginal private costs (MPC) diverge from each other. External costs increase is proportionately with increased output.

Private benefit

- Consumers are concerned with the private benefit derived from the consumption of a good. The price the consumer is prepared to pay determines this.
- Private benefits could also be a firm's revenue from selling a good.

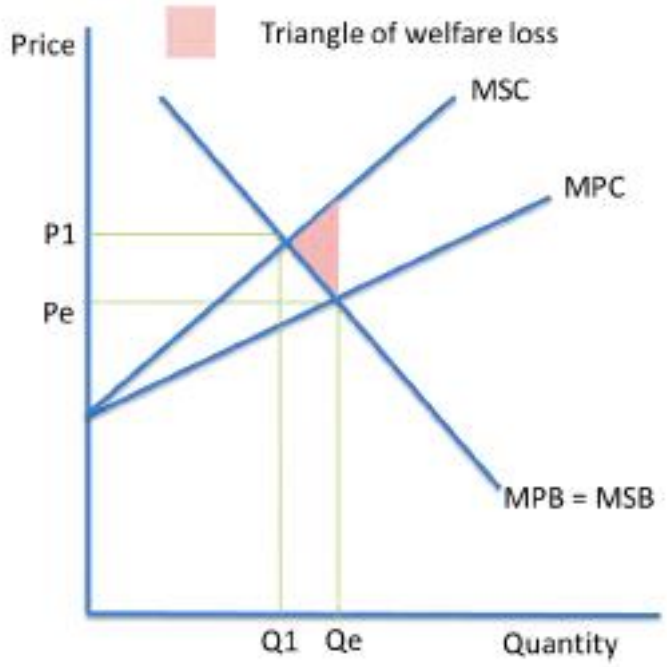
Social benefit

- Social benefits are private benefits plus external benefits.
- On a diagram, external benefits are the difference between private and social benefits.
- Similarly to external costs, external benefits increase disproportionately as output increases.

Social optimum position:

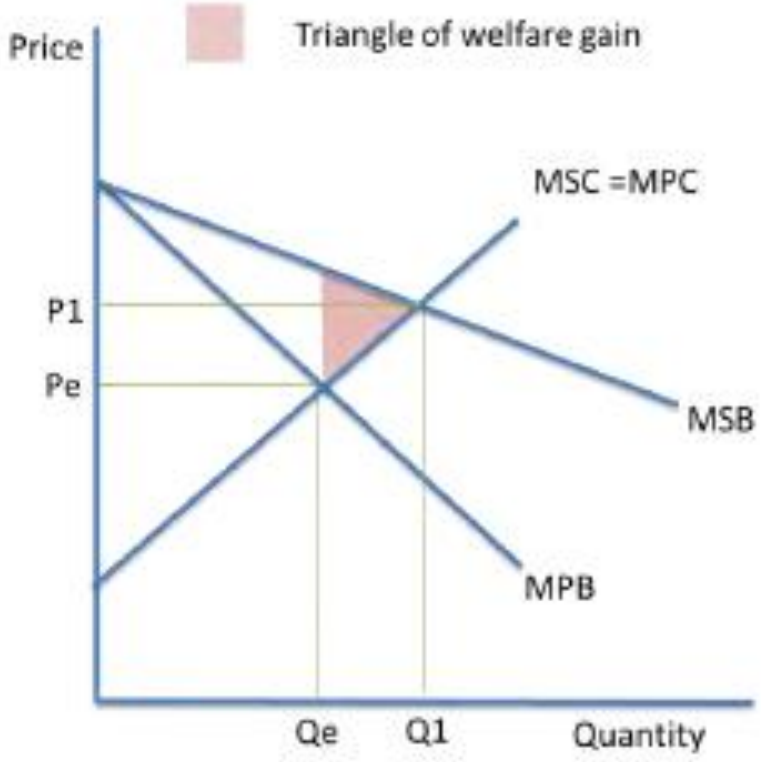
- This is where MSC = MSB and it is the point of maximum welfare.
- The social costs made from producing the last unit of output is equal to the social benefit derived from consuming the unit of output.

External costs (Negative Externalities):



- External costs occur when a good is being produced or consumed, such as pollution.
- They are shown by the vertical distance between MSC and MPC.
- The market equilibrium, where supply = demand at a certain price, ignores these negative externalities. This leads to over-provision and under-pricing.
- With negative externalities, MSC>MPC of supply. At the free market equilibrium, therefore, there are an excess of social costs over benefits at the output between Q1 and Qe.
- The output where social costs > private benefits is known as the area of **deadweight welfare loss**, shown by the triangle in the diagram.
- The market fails to account for the negative externalities that occur from the consumption of this good, which would reduce welfare in society if it was left to the free market.

External Benefits (Positive Externalities)



- An example of an external benefit of consumption of a good or service could be the decline of diseases and the healthier lives of consumers through vaccination programmes.
- Since consumers do not account for them, they are under consumed in the free market, where MSB>MPB. This leads to market failure.
- The triangle in the diagram shows the excess of social benefits over costs. It is the area of **welfare gain.**

Government policies for negative externalities:

- **Indirect taxes:** to reduce the quantity of demerit goods consumed. This increases the price of the good. If the tax is equal to the external cost of each unit, then the supply curve becomes MSC rather than MPC, so the free market equilibrium becomes the socially optimum equilibrium. This **internalises the externality**. In other words, the polluter pays for the damage.
- **Subsidies:** encourage the consumption of merit goods. This includes the full social benefit in the market price of the good.
- **Regulation:** to enforce less consumption of a good. For example, the minimum school leaving age. If there was a compulsory recycling scheme, it would be difficult to police and there could be high administrative costs. Bans could be enforced for harmful goods, although they can still be consumed on the black market. Bans are only useful where MSC > MPB (the MSC curve is above MPB).

- **Provide the good directly:** The government could provide public goods which are underprovided in the free market, such as with education.

- **Provide information:** so there is no information failure, and consumers and firms can make informed economic decisions.
- **Property rights:** this encourages innovation because entrepreneurs can create new ideas, which are protected, and earn profit.
- **Personal carbon allowances:** They could be tradeable, so firms and consumers can pollute up to a certain amount, and trade what they do not use.

Public Goods
Under-provision of public goods

- Public goods are missing from the free market, but they offer benefits to society. For example, street lights and flood control systems are public goods.
- They are **non-excludable** so by consuming the good, someone else is not prevented from consuming the good as well, and they are **non-rival,** so the benefit other people get from the good does not diminish if more people consume the good.
- The non-excludable nature of public goods gives rise to the **free-rider** problem. Therefore, people who do not pay for the good still receive benefits from it, in the same way people who pay for the good do. This is why public goods are underprovided by the private sector: they do not make a profit from providing the good since consumers do not see a reason to pay for the good, if they still receive the benefit without paying.
- Public goods are also underprovided because it is difficult to measure the value consumers get from public goods, so it is hard to put a price on the good. Consumers will undervalue the benefit, so they can pay less, whilst producers will overvalue, so they can charge more.
- Governments provide public goods, and they have to estimate what the social benefit of the public good is when deciding what output of the good to provide. They are funded using tax revenue, but the quantity provided will be less than the socially optimum quantity.
- **Private goods** are rival and excludable. For example, a chocolate bar can only be consumed by one consumer. Moreover, private property rights can be used to prevent others from consuming the good.
- **Quasi (non-pure) public goods** have characteristics of both public and private goods. They are partially provided by the free market. For example, roads are **semi-excludable**, through tolls and they are **semi-non-rival**, because consumers can benefit from the road whilst other consumers are using it (unless it is rush hour).
- Free rider problem:
    - This says that you cannot charge an individual a price for the provision of a non-excludable good because someone else will gain the benefit from it without paying anything. A free rider is someone who receives the benefits without paying for it.
    - Private sector producers will not provide public goods to people because they cannot be sure of making a profit , due to the non-excludability of public goods. Therefore, if the provision of public goods was left to the market mechanism, the market would fail and so they are provided by the government and financed through taxation.

Information Gaps

- **Symmetric information** means that consumers and producers have perfect market information to make their decision. This leads to an efficient allocation of resources.
- **Asymmetric information** leads to market failure. This is when there is unequal knowledge between consumers and producers. For example, a car dealer might know about a fault with the car that the consumer is unaware of. This could lead to a misallocation of resources. Consumers can also know more information than the producer, such as when purchasing insurance policies.
- There could also be imperfect information, where information is missing, so an informed decision cannot be made.
- This leads to a misallocation of resources. Consumers might pay too much or too little, and firms might produce the incorrect amount. For example, monopolies might exploit the consumer by charging them more than they need to.
- Asymmetric information can be linked with the **principal-agent problem.** This is when the agent makes decisions for the principal, but the agent is inclined to act in their own interests, rather than those of the principal. For example, shareholders and managers have different objectives which might conflict.
- Managers might choose to make a personal gain, rather than maximise the dividends of the shareholders.
- Information could be made more widely available through advertising or government intervention. For example, the harmful effects of smoking could be made public through adverts and messages on cigarette boxes.
- Asymmetric information can also lead to the problem of moral hazard. This occurs when a party with superior knowledge alters their behaviour in such a way which benefits themselves whilst disadvantaging the party with inferior knowledge. Moral hazard can be seen in insurance markets.

Role of financial markets

Financial markets are where buyers and sellers can buy and trade a range of services or assets that are fundamentally monetary in nature.

- They exist for two main reasons: to meet the demand for services , such as saving and borrowing, from individuals, businesses and the government and to allow speculation and financial gains.
- One role of the financial market is to facilitate savings, which allows people to transfer their spending power from the present to the future. It can be done through a range of assets, such as storing money in savings account and holding stocks and shares.
- On top of this, they lend to businesses and individuals which allows consumption and investment. They are sometimes referred to as a financial intermediary, the step between taking money from one person to give to another since money from savings is used for investment.
- Also, they facilitate the exchange of goods and service s by creating a payment system. Central banks print paper money, institutions process cheque transactions, companies offer credit card services and banks and bureau de changes buy and sell foreign currencies.

Moral hazard:

This is where individuals make decisions in their own best interests knowing there are potential risks. This can happen in two main ways in the financial markets. Firstly, it will occur where individual workers take adverse risk in order to increase their salary . Any problems they cause will be the problem of the company and not the problem of the individual, the worst that can happen is to lose their job whilst the company may lose millions of pounds. The Global Financial Crisis was caused by moral hazard, when employees sold mortgages to those who would not be unable to pay them back. By selling more mortgages, they would see higher salaries and bonuses but would not see the negative effects if the loan was not repaid. On top of this, financial institutions may take excessive risk because they know the central bank is the lender of last resort and so will not allow them to fail because of the impact it would have on the economy.

Speculation and market bubbles:

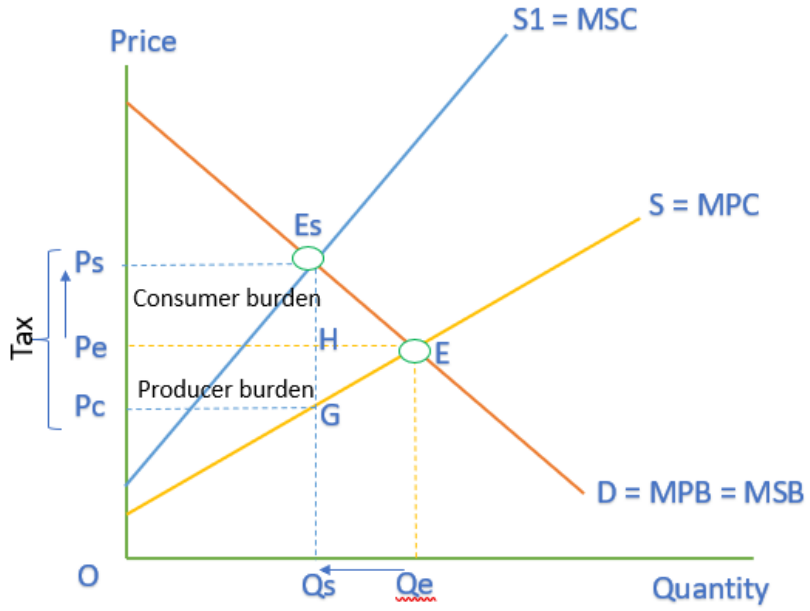
Almost all trading in financial markets is speculative and this leads to the creation of market bubbles, where the price of a particular assets rises massively and then falls. They tend to occur because investors see the price of an asset is rising and so decide to purchase this asset as they believe the price will continue to rise and will profit them in the future. This leads to

prices becoming excessively high and eventually enough investors decide that the price will fall, so they sell their assets and panic sets in, causing mass selling. This is known as herding behaviour. Moreover, the financial market has also caused market bubbles in the housing market by lending too much in mortgages and increasing demand for houses. When this bubble bursts, for example due to a rise in real interest rates, there is a fall in demand for houses and a negative wealth effect, reducing AD, and banks are left with loans that will not be repaid in full.

Government intervention in markets

Indirect taxation:

- When the good has a negative externality, the government can introduce indirect taxation to prevent market failure.
- This will cause a fall in supply and increase the costs to the individual, so the supply curve will shift from S to S1.
- The free market would produce at PeQe, where MPC=MPB, but the social optimum position is PsQs, where MSB=MSC.
- Government imposed tax EsG per unit (vertical distance from Social optimum equilibrium to old supply curve (MPC)) . The tax internalises the externality and social welfare is now maximised.
- Total tax revenue area= PsPcGEs
- Consumer Burden= PsPeHEs
- Producer Burden= PePcGH



Advantages:

● It internalises the externality- the market now produces at the social equilibrium position and social welfare is maximised.
● It raises government revenue, which could be used to solve the externality in other ways such as through education. This may help goods to become more

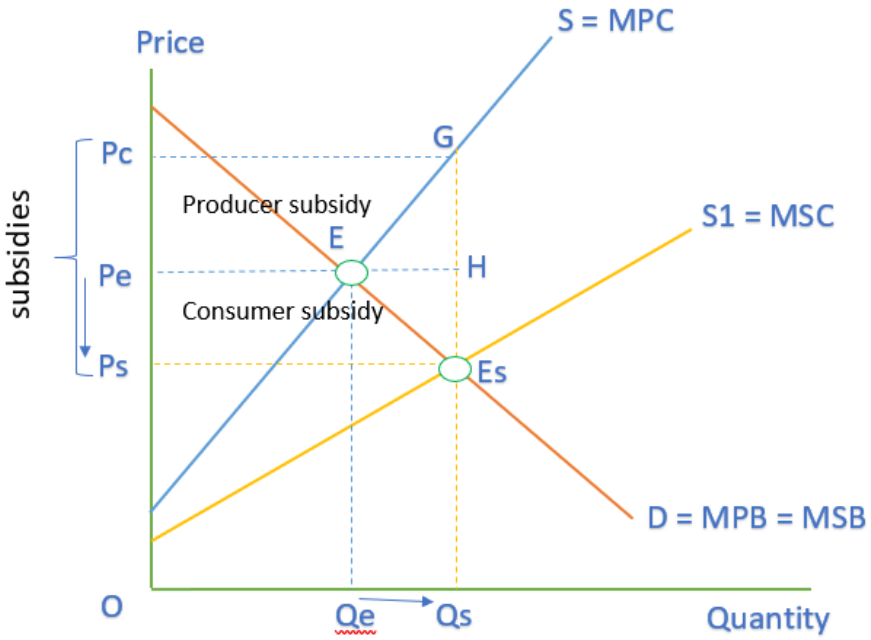
elastic in the long run. The effect will depend on what the government does with the revenue they raise.

Disadvantages:

● It is difficult to know the size of the externality and so it is difficult to target the tax ; the effect depends on where the tax is set. The government suffers from imperfect information when setting the tax.
● There could be conflict between the government goal of raising revenue and solving the externality, which makes setting the tax difficult.
● It could lead to the creation of a black market
● If demand for the good is inelastic, then the tax will be ineffective at reducing output.
● Taxes are politically unpopular and so governments may be reluctant to introduce them.
● They are regressive, meaning they the poor spend a larger proportion of their income on indirect taxes than the rich do.
- Some examples of indirect taxes used for externalities in the UK are: landfill taxes, fuel duties, alcohol duties, tobacco duties, air passenger duties and sugar taxes.

Subsidies:

- In order to solve positive externalities, the government can introduce subsidies.
- Subsidies can also be introduced in order to fix information gaps.
- Since there are external benefits MPC > MSC
- The free market would produce where MPC=MPB at PeQe whilst the social optimum position is where MSC=MSB at PsQs.
- Government gives subsidy of EsG per unit (Vertical distance from Social optimum Equilibrium to old supply curve (MPC))
- This means that social welfare is maximised since the market produces at the output that best allocates resources.



Advantages:

● Society reaches the social optimum output and welfare is maximised.
● They can have other positive impacts , such as encouraging small businesses, bringing about equality and encouraging exports.
● It lowers the cost of production and producers and earn more profits.

Disadvantages:

● The government has to spend a large amount of money, which will have a high opportunity cost.
● As with taxes, they are difficult to target since the exact size of the externality is unknown.
● Subsidies can cause producers to become inefficient, especially if they are in place for a long time.
● Once introduced, subsidies are difficult to remove. Some examples of subsidies are those on: biofuels, solar panels, apprenticeship schemes, wind farms and rail industries.

Maximum price:

- A **maximum price** is a legally imposed price for a good that the suppliers cannot charge above.
- The government might set a **maximum price** where the consumption or production of a good is to be encouraged. This is so the good does not become too expensive to produce or consume.
- Maximum prices **have to be set below the free market price,** otherwise they would be ineffective.
- They are set on goods with positive externalities.
    - For example, they are set on food as a lack of food will have a negative impact on the NHS (National Health Service).
- They can prevent monopolies from exploiting customers.
    - This approach has sometimes been applied to rents for accommodation when prices are too high.
    - For example, in the EU, price caps on roaming charges are in place to make sure it is not too expensive for consumers to use their mobile phones abroad.
- The equilibrium position is P1Q1 but the imposition of the maximum price means there is excess demand of QD-QS, shown by the shaded area.

Advantages

- Can be set where MSB=MSC, so allow for some consideration of externalities, and so help to increase social welfare.
- Maximum price will ensure that goods are affordable.
- Able to reduce poverty and can increase equity/equality
- Maximum prices could lead to welfare gains for consumers by keeping prices low, and they could increase efficiency in firms, since they have an incentive to keep their costs low to maintain their profit level.

Disadvantages

- Maximum prices control the market price, but this could lead to government failure if they misjudge where the optimum market price should be.

- However, it could reduce a firm's profits, which could lead to less investment in the long run. Moreover, firms might raise the prices of other goods, so consumers might have no net gain.
- There is a distortion of price signals and this causes excess demand.
- Excess demand will lead to questions about how to allocate goods.
- It is difficult for the government to know where to set the prices , because of the difficulty of knowing the size of externalities and because it will have implications on the size of excess demand.
- Can lead to the creation of black markets. Maximum prices may also lead to illegal bribes or discriminatory policies in allocating goods.

Examples:

- Maximum prices have been implemented in Manhattan in the from of rent controls on properties. On top of this, there are price caps on milk, toilet paper, medicine, petrol and other key goods in Venezuela: this has led to the creation of a black market and the goods are no longer sold in supermarkets as the firms are unable to make a profit at those prices.

Minimum Price

- A minimum price is a legally imposed price at which the price of the good cannot go below.
- The government might set a **minimum price** where the consumption or production of a good is to be discouraged. This ensures the good never falls below a certain price.
- Minimum prices **have to be set above the free market price,** otherwise they would be ineffective.
- They can be set on goods with negative externalities, so that the price is raised to the social optimum point and consumption is discouraged. Minimum prices would reduce the negative externalities from consuming a demerit good, such as alcohol.
- For example, the government might impose a minimum price on alcohol, so it is less affordable to buy it. The **National Minimum Wage** is an example of a minimum price. Minimum wage leads to a fall in the employment rate. This minimum price will yield the positive externalities of a decent wage, which will increase the standard of living of the poorest, and provide an incentive for people to work.
- They also encourage producers to produce goods, so can be set on goods with social benefits that are underprovided by the market.
- In the diagram, the market equilibrium price is P1Q1. However, the minimum price is set at P2 and as a result QD is demanded but QS is supplied so there is excess supply of QS-QD, shown by the shaded area.

Advantages

- Can be set where MSB=MSC, so allow for some consideration of externalities, and so help to increase social welfare.
- Minimum price will ensure that producers get a fair price.
- Able to reduce poverty and can increase equity/equality.

Disadvantages

- There is a distortion of price signals and this causes excess supply.
- Excess supply will lead to questions about what to do with the surplus goods.
- It is difficult for the government to know where to set the prices , because of the difficulty of knowing the size of externalities and because it will have implications on the size of excess supply.
- Can lead to the creation of black markets.

Example:

In Scotland, a minimum price has been imposed on alcohol. It targets the cheapest drinks, which aims to cut down on binge drinking, but it will have negative effects on poverty for those who are addicted. Minimum prices on Limousines in Nashville have stifled competition as the most price competitive firms are forced out of business.

Tradeable pollution permits:

- These could limit the amount of negative externalities, in the form of pollution, created in industries. Firms will be allowed to pollute up to a certain amount, and any surplus on their permit can be traded.
- This means firms can buy and sell allowances between themselves.
- For example, there could be a limit on the quantity of carbon dioxide emissions released from the steel industry.

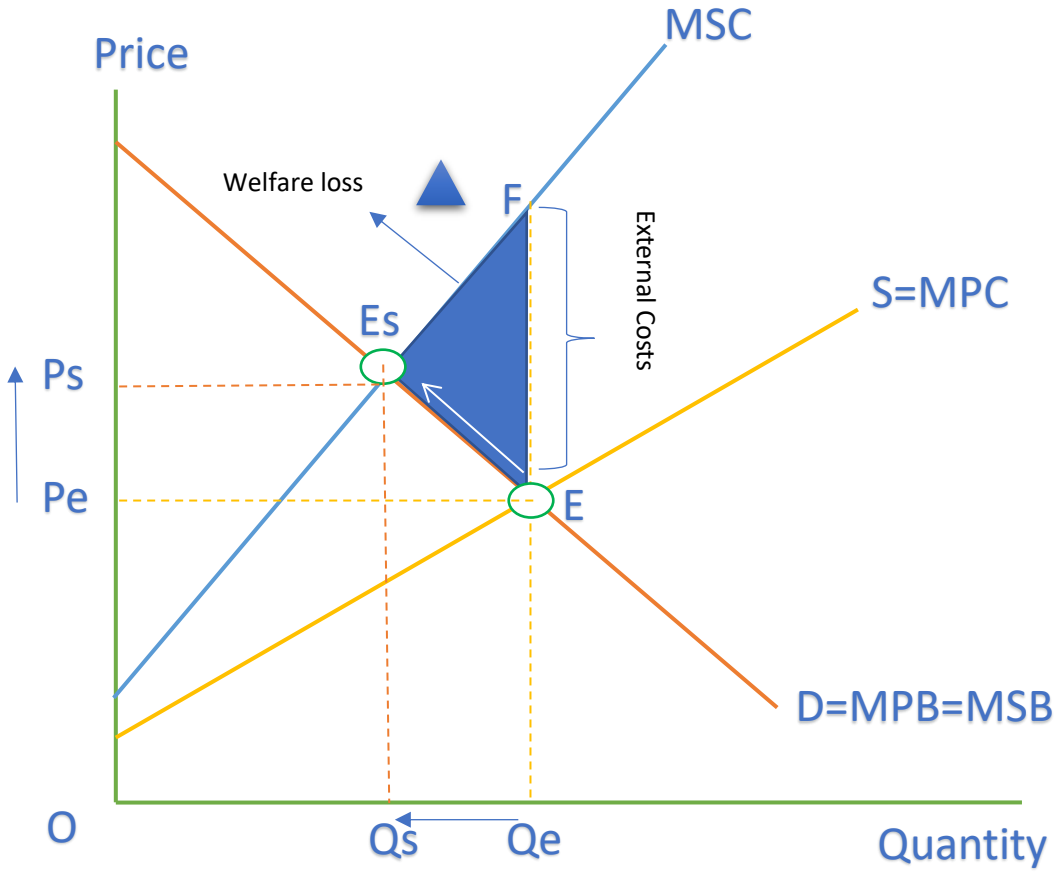
Advantages

- This should benefit the environment in the long run, by encouraging firms to use green production methods.
- The government could raise revenue from the permits, because they can sell them to firms. This revenue could then be reinvested in green technology.
- If firms exceed their permit, they will have to purchase more permits from firms which did not use their whole permit. This raises revenue for greener firms, who might then invest in green production methods.

Disadvantages

- However, it could lead to some firms relocating to where they can pollute without limits, which will reduce their production costs.
- Firms might pass the higher costs of production onto the consumer.
- Competition could be restricted in the market, if the permits create a barrier to entry for potential firms.
- It could be expensive for governments to monitor emissions.

External cost diagram to be used:



- Before the permits firms were over-producing the good at Qe in free market resulting in high level of pollution
- After the government intervention by issuing permits quantity of output declined to Qs resulting in less pollution which was achieved by moving to social equilibrium point. Now social welfare is maximised.
- Resulting in increase in price.
- Higher price reflect that now the firms are paying for these external costs.
- Fall in quantity of pollution, external costs internalised by moving to social optimum level.

State provision of public goods:

Public goods are non-excludable and non-rivalry and so the free rider problem says they will be under-provided by the free market, leading to market failure. As a result, the government provides these public goods directly through tax revenues earned by them. Similarly, the government can provide merit goods.

Advantages:

- This corrects market failure by providing important goods which would otherwise not be provided. It will lead to improved social welfare.
- It can help to bring about equality, by ensuring everyone has access to basic goods.
- There will be benefits of the goods themselves , for example by providing healthcare, the government ensures that the workforce is healthy and so this can improve economic growth.

Disadvantages:

- This is expensive and represents a high opportunity cost for the government. Administration costs are a problem
- Since the market is not involved, the government may produce the wrong combination of goods as consumers can not indicate their preferences. For example, there may be too many soldiers and too few hospital beds: if they were provided by the market, price signals would lead to a shift in resources.
- The government may be inefficient at production since they have no incentive to cut costs.
- Government officials may suffer from corruption and conflicting objectives.

- In the UK, the government provides a number of goods including roads, education and healthcare. The National Health Services suffers from severe underfunding and many schools are having their budgets cut. Moreover, more money is spent on improving railways than roads, even though 92% of all journeys in the UK are made on roads, suggesting incorrect resource allocation.

Provision of information:
When there is asymmetric information, the government provides information to allow people to make informed decisions. They may also force companies to provide information.

Advantages:
● This helps consumers to act rationally, which allows the market to work properly.
● It is best if the government uses this alongside other policies . For example, it can make demand more elastic in the long run and so help indirect taxes to become more effective at reducing output.

Disadvantages:
● This can be expensive for the government to do, incurring an opportunity cost.
● The government themselves may not always have all the information, so it may be difficult to inform consumers.
● Consumers may not listen to the information provided due to irrational behaviour.

Some examples of information provision are labels on cigarette packages and information campaigns on speeding, obesity, drinking and smoking. Consumer protection laws and industry standards help to overcome problems relating to second hand products. The 'traffic light system', where foods are rated green, orange or red on calories, sugar, salt etc. helps to easily show consumers the healthier options. Despite these information campaigns, many consumers still undertake harmful and dangerous activities.

Regulation:
Governments are able to impose laws and caps to ensure that levels are set where MSB=MSC or to ensure that companies provide full information on products. The government can also introduce regulatory bodies. These ensure firms follow regulation and do not exploit their customers or take advantage of market position.

Advantages:
- This can ensure consideration of externalities, prevent exploitation of consumers and keep consumers fully informed. This will help to overcome market failure and maximise social welfare.

Disadvantages:
- Laws may be expensive for the government to monitor, incurring an opportunity cost.
- They don't take into account the different costs of following the laws for different companies. Compared with tradable pollution permits, regulation is a less efficient method of reducing pollution.
- Firms may pass on costs to the consumer in the form of higher prices.
- Excessive regulation may reduce competition in a market and efficiency, by increasing bureaucracy and reducing innovation.
- A number of regulations are in place to correct market failure in the UK such as: EU fishing quotas, smoking bans, minimum ages laws and maximum vehicle CO2 emissions.

Government failure

Government failure is when government intervention in the market leads to net welfare loss and a misallocation of resources. The total social costs arising from the intervention are greater than the social benefit. There are a number of causes of government failure:

Distortion of price signals:

- Some types of government intervention change price signals in the market and distort the free market mechanism. As a result, they keep some companies in business when they are inefficient so the resources should be switched to somewhere else (subsidies) or make consumers pay too much for a good (taxes).
- For example, subsidies keep farmers in employment when they cannot produce cheaply enough to be competitive. The result is that the government keeps them in business when they should close down and find an alternative use for their resources.
- Maximum and minimum prices lead to excess demand/supply and make it difficult to allocate resources.
- The price mechanism aims to allocate resources to their best use and where consumers want and value them most highly. By intervening, the government distorts the mechanism and so resources may be allocated inefficiently.

Unintended consequences:

- Some interventions cause effects which the government did not intend to happen. Consumers and producers may react to new policies in unexpected ways and so the policy doesn't have the effect it should.
- One example is the introduction of the buffer stock scheme CAP (Common Agricultural Policy) in the EU. This was meant to smooth out the price fluctuations but it ended up leading to overproduction in the EU and a fall in agricultural prices in other parts of the world as EU surpluses were disposed of at cheap prices outside of Europe; this was not the intention of the scheme.
- On top of this, targets for treating patients on the NHS has led to a reduction in the quality of care. This is not what the government intended when they introduced the targets.

Excessive administration costs:

● In many cases, a lot of money that is allocated by the government is actually used up on basic administration costs. The social costs may be higher than social benefits, once administration costs are taken into account.

● A lot of money given to the NHS etc. is actually spent on organisational administration rather than putting the money into medical care.

● Excessive administration on the Apprenticeship Levy, which aims to increase the quality and quantity of apprenticeships (on-the-job training), has meant that little money is spent by firms on capital, machinery, raw material.

Information gaps:

- Any decisions that the government makes must be based on some data but the information they have is always going to be limited, for example you cannot accurately predict the number of cancer patients or the number of cars on the road.
- Cost and benefit forecasts of investment are often wrong and so the government invests in a system where the costs are higher than the benefits, so there is welfare loss. It is impractical, and usually impossible, for the government to get every piece of information they need.