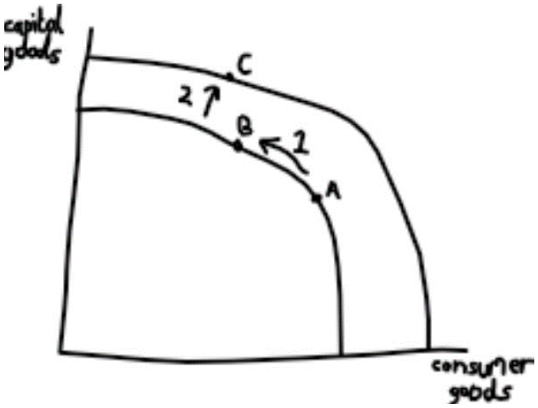


-Sometimes the PPF is drawn in terms of **capital goods and consumer goods.**

-Here, increasing production of capital goods increases potential to produce consumer goods, resulting in an outwards shift of the PPF, thus leading to economic growth

-So, whether to produce more capital or consumer goods is an example of a **conflicting objective.** Economic planners have a responsibility to the future of economic growth, **but** also have a responsibility to provide consumption goods for the present generation.

-So, **PPF diagrams illustrate different features of the fundamental economic problem, such as:** resource allocation, opportunity cost, unemployment of economic resources and economic growth.

4.1.2 Individual economic decision making

Consumer behaviour

Utility theory

Utility is a measure of the satisfaction that we get from purchasing and consuming a good or service. **Total utility:** The total satisfaction from a given level of consumption. **Marginal utility:** The change in satisfaction from consuming an extra unit

Standard economic theory believes in the idea of diminishing returns/theory of diminishing marginal utility i.e. the marginal utility of extra units' declines as more are consumed – known as **diminishing marginal returns.** If marginal utility is falling, then consumers will only be prepared to pay a lower price. This helps to explain the downward sloping demand curve for a good or service

Utility maximisation for consumers is when consumers aim to generate the greatest utility possible from an economic decision.

Rational economic decision making and economic incentives

Economic agents respond to incentives, which can allocate scarce resources to provide the highest utility to each agent. E.g. for the entrepreneur of a firm, the incentive to taking risks is profit. When incentives are not given properly, resources will be misallocated.

Prices in market economies are often the incentives given to buyers and sellers which determine their decisions

However, **social and emotional factors** also influence decisions and demand. Social awareness, norms and pressures also influence people's decisions. Likewise, emotional factors influence demand. E.g. binge drinking or eating at times of personal insecurity.

The importance of the margin when making choices

- If the value of **PES is between 0 & 1** the supply curve is said to be **price inelastic.** A given % change in price causes a smaller % change in quantity supplied.
- If the value of **PES is equal to 1** the supply curve is unit elastic. A given % change in price causes a proportional % change in quantity supplied.
- If the value of **PES is greater than 1** the supply curve is **price elastic.** A given % change in price causes a larger % change in quantity supplied.

As such, a steep supply curve is inelastic and shallow supply curve is elastic.

Factors influencing elasticity of supply

1) **Time** – in the short run, difficult to switch from producing one type of good to another. So, the longer the time period, the higher the PES
2) **Length of Production Period** – if firms can convert raw materials into finished goods very quickly (hours rather than months for example) then supply is likely to be more elastic
3) **The ease of switching between alternative methods of production** – the easier it is, the more elastic supply tends to be
4) **Availability of spare capacity** – if firms are operating below capacity, they are likely to be able to increase quantity if required. So spare capacity leads to a higher PES
5) **Perishability and ease of accumulating stocks** – if stocks can be stored easily, and at low cost, firms can respond quickly to a change in demand (elastic). Conversely, if goods are perishable they must be sold regardless of price (inelastic).
6) **No. of firms in a market & barriers to entry** – The more firms in the market, and the greater the ease at which a firm can enter/leave, the greater the elasticity of supply

Interrelated Goods and Markets

Joint Demand – the price of one market affects the demand in complement/substitute markets, dependant on CPE

a) **Complement** – the price of good X rises, meaning the demand for good Y falls. The extent of the change in demand is dependent on the CPE.
b) **Substitutes** – the price of good X falls, which means demand for good Y also falls

Composite Demand – When several different groups demand the same good for different purposes. E.g. oil for petrol, heating, diesel etc. An increase in demand for the good from one particular group decreases supply for other sectors who demand the good, increasing the price for them. And vice versa.

Derived Demand – Means that demand of one good occurs as a result of demand for another. For example, milk is bought to make cheese. Thus, here an increase in the Quantity (demand or supply driven) leads to an increase in demand for its inputs

Competitive Demand – state of affairs observed between the markets for goods that can be readily substituted for one another. E.g. where a buyer could choose either of two competing products and still receive roughly the same level of satisfaction.

Joint Supply – When two goods are predominantly produced from the same input. Thus, here if quantity (again demand or supply driven) for 1 good increases, we need more of the input, so supply of all other goods jointly supplied increases. E.g. Cows are used for beef and leather. If quantity of beef increases, more cows, so supply of leather also increases.

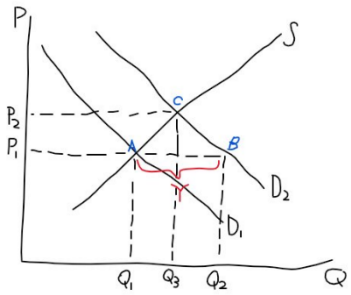
How Markets Work – The Price Mechanism (3.1.5.1/part of 4.1.8.1 of syllabus)

- **Adam Smith's Invisible Hand** ('Invisible hand of the price mechanism') is where the hidden hand of the market operating in a competitive market through the pursuit of self-interest allocated resources in society's best interests. Remains a view held by free-market economists.

1) **Signalling Function**
   - Prices signal to economic agents (consumers, firms and factor owners) changes in preferences and needs / scarcities and surpluses to demonstrate where resources are required.
   - Prices provide info. Allowing buyers/sellers to plan economic activities around changing market conditions. If prices are rising, this a signal to suppliers to expand production to meet high demand.
   - Likewise, if there is excess supply, the price mechanism will price mechanism eliminates the surplus by allowing prices to fall.
2) **Incentive function**
   - Higher prices act as an incentive to raise output because the supplier stands to make a better profit. When demand and thus prices are low, an incentive is provided to cut back on output (wait for future higher prices)
   - For example, high wages create incentives for people to acquire new skills and supply labour
3) **Rationing Function**
   - Given scarcity of resources, rationing is required.
   - When there is a shortage, prices rise, leaving only those willing and able to pay. The price thus rations demand
4) **Allocative function**
   - Allocative function directs resources from markets experiencing excess supply (low prices) into markets with excess demand (higher prices).

The Price Mechanism in Action: An Increase in Demand

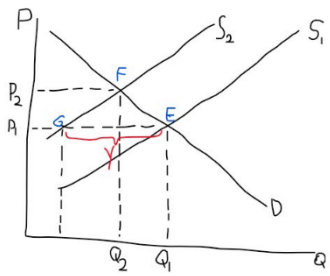
Y = excess demand



- Demand for product increases, creating excess demand at old price P1. (shown by AB)
- To get rid of excess demand, the price rises to P2
- Increase in price reduces quantity demanded from B to C **(rationing function).** It will also encourage existing firms to produce more **(incentive function)** and encourage more firms to enter the market **(signalling function)**
- New equilibrium is reached at C with a higher quantity and price

The Price Mechanism in Action: A decrease in Supply

Y = excess demand



- Supply for product decreases, creating excess demand at old price P1 (shown by EG)
- To get rid of excess demand, the price rises to P2

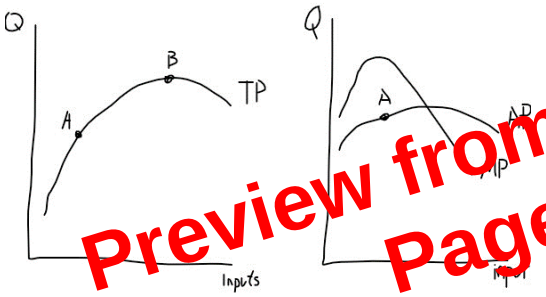
- **Marginal Product:** The amount of extra total product produced by adding an extra unit of the variable factor.

(Short run) Law of diminishing returns

- The **law of diminishing returns** is a short run (when at least one factor of production is assumed to be in fixed supply) phenomenon.
- Normally assumed the quantity of capital inputs is the factor that is fixed. Production can be altered by changing the demand for variable inputs such as labour, or raw materials.
- **In the short run, the law states as we add more units of variable input to fixed amounts of land and capital, the change in total output will at first rise and then fall**
- What happens to marginal product is linked to the productivity of each extra worker. At first, each additional worker has plenty of capital to use, and as a result marginal product my rise. Beyond a certain point, fixed factors of production become scarcer, and capital input becomes diluted among the larger workforce. As such marginal productivity tends to fall – until it is negative, at which point total product falls.

If Marginal Product is positive, Total Product is rising. If Marginal Product is negative, Total Product is falling. Total Product is at its max when Marginal Product is zero.

When Marginal Product starts to fall diminishing returns has set in – when Marginal Product declines below existing Average product then Average Product will fall.



(Long Run) Returns to Scale

In the Long run, all factors of production can be changed, so the law of diminishing returns does not apply. Instead we look at **Returns to scale.** Looks at how **the output of a business responds to a change in all factor inputs.**

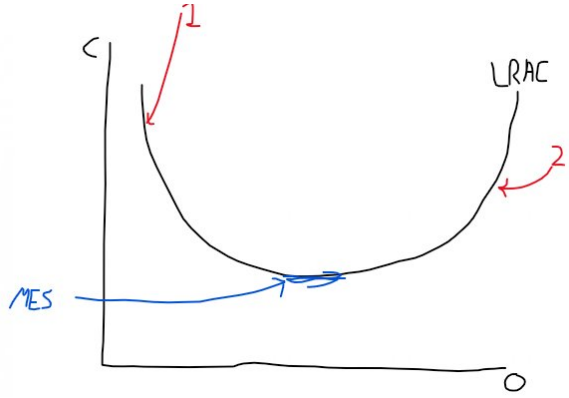
E.g. If a factory worker doubles the amount of labour employed, does output more than double (desirable), double (satisfactory) or less than double (undesirable)?

- **Increasing Returns:** % change in output > % change in inputs
- **Decreasing Returns:** % change in output < % change in inputs
- **Constant Returns:** % change in output = % change in inputs

The nature of the returns to scale affect the shape of a business's average cost curve – when there are sizeable increasing returns to scale then we expect to see economies of scale from long run expansion.

In the long run businesses will be looking for an output that combines labour and capital in a way that maximises productivity and reduces unit costs towards their lowest level – this may involve

The **Long run average cost curve** is derived from all the short run cost curves (at different levels of output) and is known as an envolope curve.



The points of tangency between the LRAC and SRAC curves do not occur at the minimum point of the SRAC curve except at the point where MES is achieved. Is linked to the idea of returns to scale and dis/economies of scale.

1. Economies of scale = increasing returns to scale

2. Diseconomies of scale =decreasing returns to scale

MES: The **minimum efficient scale.** The lowest level of production where all internal economies of scale have been exploited. The lowest point on the LRAC curve and the output range over which a business achieves productive efficiency. Comprises a range of output levels. Where the **ratio of fixed to variable costs is high – higher MES (i.e. achieved a higher levels of output).**

-Higher MES relative to size of market demand – the closer the industry to a monopoly. In industries where the ratio of fixed to variable costs is high, scope to reduce average cost by increasing the scale of output. Likely to result in a oligopoly or monopoly, as economies of scale act as barriers to entryas existing firms, having achieved more cost savings, lower prices to prevent other newer firms coming in

-**Lower MES relative to size of market demand – the closer the industry is to being competitive.** In contrast, may be limited opportunities of for economies of scale and MES therefore occurs at lower levels of ouput,, and is therefore a small % of market demand. Thus more competitive, with more competitors able to achieve MES.

Economies and Diseconomies of Scale

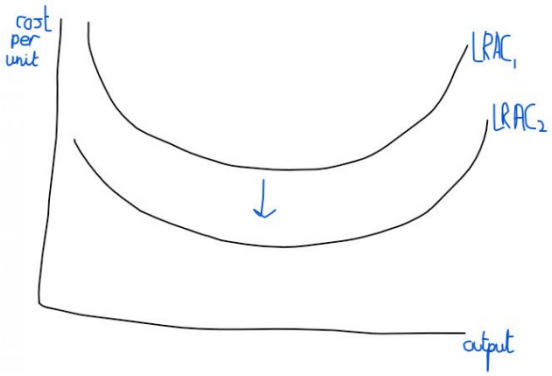
Economies of Scale: reductions in long run average cost resulting from expanding the scale of production and exploiting increasing returns to scale

Internal Economies of Scale (e.g. the 6 below): relate to the firm itself.

1. **Technical Economies of Scale**
   - Larger firms can afford to invest in expensive machinery. Moreover, machinery only efficient (fully utilised) once output is large enough –indivisibilities.
   - Spreading R &D costs.
   - Vertical Integration. Larger firms buy up line of production, saving money on transport, time etc. (no need to pay excess to firms (looking for profits) when out-sourcing.
2. **Managerial Economies of Scale**
   - The larger the firm,the larger the benefit of specialisation within management, e.g. sales director, H.R director.
3. **Marketing Economies of Scale**
   - Spreading the fixed cost of promotion over a larger scale of output
4. **Purchasing Economies of Scale**
   - When large businesses receive a discount because they are buying in bulk
5. **Financial Economies of Scale**

External Economies of Scale: cost saving resulting from the growth of the industry of which the firm is a part of (internal is cost saving resulting from the growth of the firm itself)

1. **Geographical concentration:** Where firms from the same industry re clustered and as such the area is geared towards the needs of that industry.
2. **Technological Breakthrough**



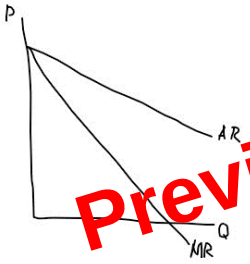
These lead to a shift in the LRAC curve (see right, showing the shift caused by external economies of scale), where as internal economies of scale lead to a movement along the curve.

There are also **external diseconomies of scale**, perhaps if too many firms concentrate in an area leading to labour shortages, scarce land and thus higher rent, congestion on the road.

Average Revenue, total revenue and profit

Revenue: The income generated from the sale of output in product markets over a given time period

- **Total Revenue:** price x quantity demanded
- **Average Revenue:** total revenue divided by output (so in effect price per unit). Thus is in effect the firm's demand curve.
- **Marginal Revenue:** change in revenue from selling one extra unit of output



Average revenue is equal to price charged, so long as the price charged is equal for all levels of output.

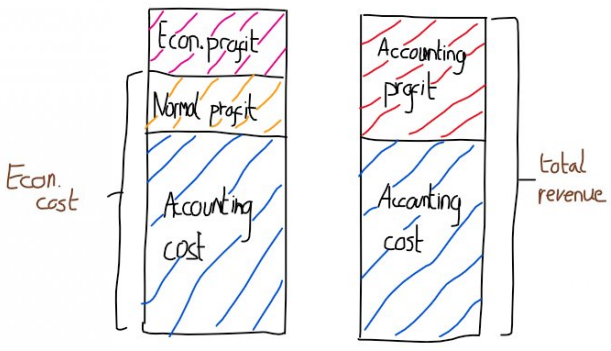
Total revenue is maximised when marginal revenue = zero. This is at the mid-point of the demand (AR) curve. For a business with a downward sloping AR – and when MR is zero, the price elasticity of demand is 1.

Also, when demand is price inelastic, a fall in price will lead to a decrease in total revenue. When demand is price elastic, a fall in price will lead to an increase in total revenue.

Profit (4.1.4.7)

There are three types of profit, 1) accounting 2) normal 3) abnormal

-Accounting costs are just the normal costs incurred, such as wages and money spent on raw materials, and when taken away from total revenue, give us **accounting revenue.**



-**Normal Profit** is the minimum level of profit needed to keep operating in the long run. If a firm is making a normal profit, it is covering its accounting costs and any opportunity cost. In other words, there is no better (more profitable) alternative available.

2. Collusion lowers the costs of competition e.g. wasteful marketing wars which can run into millions of pounds
3. Collusion reduces uncertainty in a market – and higher profits increases producer surplus/shareholder value – leading to higher share prices.

Given the risk of new entrants being attracted to the market by joint monopoly profits, collusive oligopolists are also likely to adopt strategies to discourage new entrants. E.g. Limit pricing: existing firms set price below monopoly profit maximising level ata price just low enough to deter new entry.

Legal forms of business collusion – i.e. cooperation

Not all instances of collsuive behaviour are deemed illegal by the EU Competition Authorities:

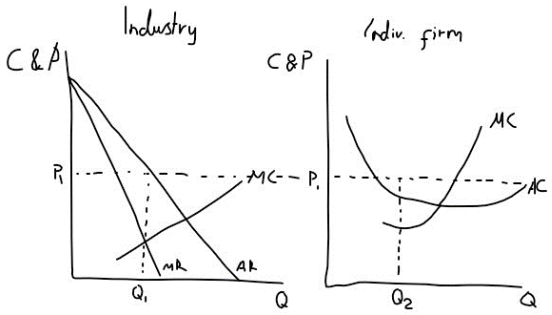
1. Practices are not prohibited if the respective agreements 'contribute to improving the production or distribution of goods or to promoting technical progress'.
2. Development of improved industry standards of production and safety which benefit the consumer – a good example is joint industry standards in Europe for mobile phone chargers
3. Info sharing designed to give better info to consumers
4. Research joint ventures and know-how agreements which seek to promote innovation. The EU has introduced 'R&D Block Exemption Regulation' for this situation

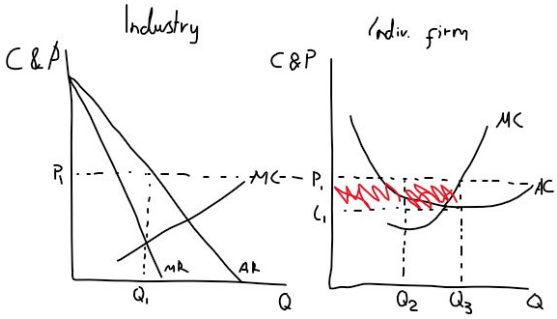
Conditions for open collusion between businesses:

- Weak anti-trust
- Participating firms have a high percentage of total sales
- Firms can communicate well and trust each other
- Product differentiation low
- Entry barriers are high

Cartel analysis

A producer cartel is assumed to fix the cartel price at P1 – the distribution of the cartel output may be allocated on the basis of a quota system. Although the Cartel as a whole is maximising profits, the individual firm's output quota is unlikely to be at their profit maximising point. (see fig. 1 – Q2 = output quota for firm)





So, this means that for any one firm, expanding output and selling at a price that undercuts the cartel price can achieve extra profits – shaded in red section in figure 2. shows the new level of supernormal profit gained from increasing output. However, if one firm does this , it is in each firms interests to do exactly the same, and as every firm does it the result is excess supply and a sharp fall in price (see oil drop and OPEC) – and the cartel agreement has broken down.

	-Discourages investment

Public Goods

Public goods are those which provide benefit to consumers but, if left to the free market, would **not be produced at all,** i.e. there would be complete market failure.

Public goods have two main characteristics, which distinguish them from private goods:

- **Non excludability:** Once a public good is provided to one person, it is impossible to stop someone else from consuming it.
- **Non-rivalry:** One person's consumption of the product does not prevent anyone else from consuming it, nor does it diminish their enjoyment of the product.

Because of these two characteristics, you cannot charge people to use the good, and therefore it's impossible to cover the costs through revenue. Therefore, there's **no incentive for the free market to provide the good**, creating a missing market. Thus the government or a charitable organisation has to provide it.

Technological change can be significance in influencing what is a public good. Satellite encryption, for example, has meant that television broadcasting is now excludable.

The Free rider problem:

- Public goods are non-excludable, so it's difficult to charge people for benefiting from a good or service once it's provided.
- The free-rider problem leads to under provision of a good and therefore market failure.

Quasi-public goods

A good that is a near-public good i.e. it has many of the characteristics of a public good.

1. **Semi-non-rival:** Up to a point, extra consumers using a park, beach or roads do not reduce space available for others. Eventually, they become crowded, diminishing utility/enjoyment.
2. **Semi-non-excludable:** It is possible but often difficult and expensive to prevent non-paying consumers. E.g. fencing a park and charging an entrance fee, building toll booths to charge road usage.

Changing Nature of Public Goods

- Advances in tech are blurring the distinction between public & private goods e.g. encryption allows suppliers to exclude non payers, while the product remains non-rival.
- Tech progress also reduces the cost of smart metering used in road pricing – this makes roads more of a private (excludable) good. The open source/creative commons movement has made much information a public good in nature.

Global Public Goods

These benefit every country, irrespective of which one provides them – they have become more important recently

Examples:

- Security from war

encouragement of a more enlightened and cultured society. Providing the education system provides sufficiently good education across all regions and sections of society, increased education and training spending should open up more **equality of opportunity.**

Merit Goods and Public Goods

Merit Goods	Pure Public Goods
-Provided by the public and private sector.	-Normally funded and provided by the government
-Positive marginal cost to supply extra users.	-Marginal cost close to zero. If provided for one, provided for everyone.
-Limited in supply, opportunity cost	-Largely unconstrained in supply.
-Rivalrous, excludable & rejectable	-Non-rivalrous, non-excludable and non-rejectable

-Under-provision of merit goods and over-provision of demerit goods may also result from imperfect information i.e. if producers/consumers are unaware of the externalities a certain good produces – or of the private benefits they would derive from the product.

Valuing Externalities

A key aspect to externalities is the difficulty assigning values

1. **Shadow pricing:** e.g. the external cost of road congestion could be calculated by multiplying the number of hours lost by the average wage e.g. 1 million working hours lost x £12 hourly wage = £12m
2. **Compensation:** estimate the cost of 'putting right' an externality e.g. the cost of installing double glazing in houses affected by increased road noise from a new motorway.
3. **Revealed preferences:** how much people are willing to pay to avoid an externality (conduct a survey to find the values).

<u>Primary Product Price Instability</u>

Primary products are raw materials, either soft (e.g. agricultural products, fish) or hard (e.g. oil, ores). PP prices have generally declined in real terms over recent decades, but in the short term have been subject to considerable volatility.

Prices are volatile in many commodity markets because:

1. **Inelasticity of Supply:** Supply is inelastic because of a) agricultural growing season b) variable costs are often only a small proportion of total costs e.g. oil platform or coal mine c) food is perishable so there is a lack of spare capacity. If supply elasticity is low, a small change in demand can result in a large change in prices.
2. **Inelasticity of Demand:** Demand is inelastic because a) PP costs often only a small proportion of total production costs b) they often have few close substitutes. If demand elasticity is low, a small change in supply can result in a large change in prices.
3. **Changes in Supply:** Mainly unplanned supply shocks, in agriculture, fishing and mines.

There are two mains types:

1) **Occupational Immobility**
   - Occurs when there are barriers to the mobility of factors between different sectors, leading to factors remaining unemployed, or being used inefficiently.
   - Some capital is specific to the industry it's been designed for.
   - Workers may not have the required skillsets to move jobs. Can lead to a mismatch between the skills of the unemployed and the skills employers are looking for – resulting in **structural unemployment.**
   - Policies to reduce it include training schemes most prominently
2) **Geographical Immobility**
   - Refers to barriers preventing people moving from one area to another to find work.
   - Include things such as family ties, constraints of infrastructure, migration controls, regional variations in house prices, language barriers.
   - Policies to reduce it include investment in transport infrastructure, and reform to housing markets to provide more affordable homes.

Monopoly bit for this section on pg36

<u>Competition Policy</u>

Sometimes market imperfections lead to market failure and therefore necessitate market intervention. Specifically, monopoly and oligopoly markets, and cartels may merit the attention of govt. regulators

The aims of competition policy in countries such as the UK are to promote competition; make markets work better and contribute towards improved efficiency in individual markets and enhanced competitiveness of businesses in overseas markets.

Competition policy aims to ensure:

- Technological innovation which promotes dynamic efficiency in different markets
- Effective price competition between suppliers
- Safeguard and promote the interests of consumers with more choice and lower prices

The main pillars of UK competition policy

1. Anti-trust and cartels
   a. Elimination of agreements that restrict competition including price-fixing by firms who hold a dominant market position
2. Market liberalisation
   a. Introducing competition in previously monopolistic sectors such as energy supply, retail banking, mobile telecommunications and air transport
3. State aid control
   a. Policy analyses state aid measures such as airline subsidies to ensure that such measures don't distort competition in the Single Market
4. Merger control
   a. Investigation of mergers and take-overs between firms which could result in their dominating the market

Examples of anti-competitive behaviour include price fixing and market sharing; predatory and limit pricing; charging excessively high prices; discrimination and patent misuse

- **Policy short termism/myopia:** Govt. may not analyse the long term consequences of a policy e.g. road widening to reduce congestion
- **Regulatory capture:** When a regulatory body is operating in favour of producers rather than consumers.
- **Conflicting objectives:** E.g. cutting taxes v. increasing govt. spending. Every policy has an opportunity cost.
- **Disincentive effects:** E.g. trying to reduce income/wealth inequalities may lead to a reduction in incentives to seek work.
-

Examples of the Law of unintended consequences:

- High capital gains tax – reduces new house buildings, worsening house shortages and affordability
- Bank bailouts – raises the problem of moral hazard
- Import tariffs on steel – hit domestic car and construction firms
- Bio-fuel subsidy – may divert production away from food, causing food price inflation – which then hits the poorest in society worst.

Key points about govt. failure

1. Free market economists are distrustful of intervention. They believe that the price mechanism should be given the freedom to operate.
2. Often we accuse the government of policy failure only with the benefit of hindsight
3. Limited info – no govt. has the resources and info available to ever make fully informed, objective judgements. That is the nature of politics
4. Govt. failure is most likely to occur when decisions are made in the vested interest of special interest groups, at the expense of other groups (the result of a loss of equity).