

AS Economics

Unit 1: The market system

Unit 2: Market failure

Unit 3: The national and international economy

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Unit 1: The market system

Choice and its consequences

The economic problem

- The economic problem: scarce resources in relation to unlimited wants.
- This leads to these questions (first three are standard):
 - What to produce? Goods/services? Consumer/capital goods?
 - How to produce? Labour/capital intensive?
 - For whom to produce? Equality? Ability to pay?
 - When to produce? Now, or in the future?

Resources

- Resources can be categorised as:
 - Land: Natural resources.
 - Labour: Human resources (workforce).
 - Capital: Man-made aids to production.
 - Enterprise: Organisation and risk taking.
- Combined, via production they produce:
 - Consumables
 - Consumer Durables
 - Capital Goods
 - Services
- Output can be increased via specialisation. Specialisation leads to the need for trade. Money acts as a medium of exchange to allow trade to occur.
- Specialisation in production often involves the division of labour.

} *The factors of production or
INPUTS*

} *OUTPUTS*

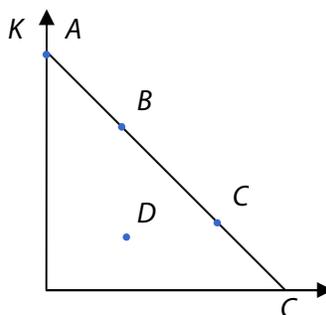
Opportunity cost

Scarce resources and unlimited wants mean that choices have to be made. The true cost of any choice between alternatives is the opportunity cost – “The next best alternative forgone.”

PPC/PPF

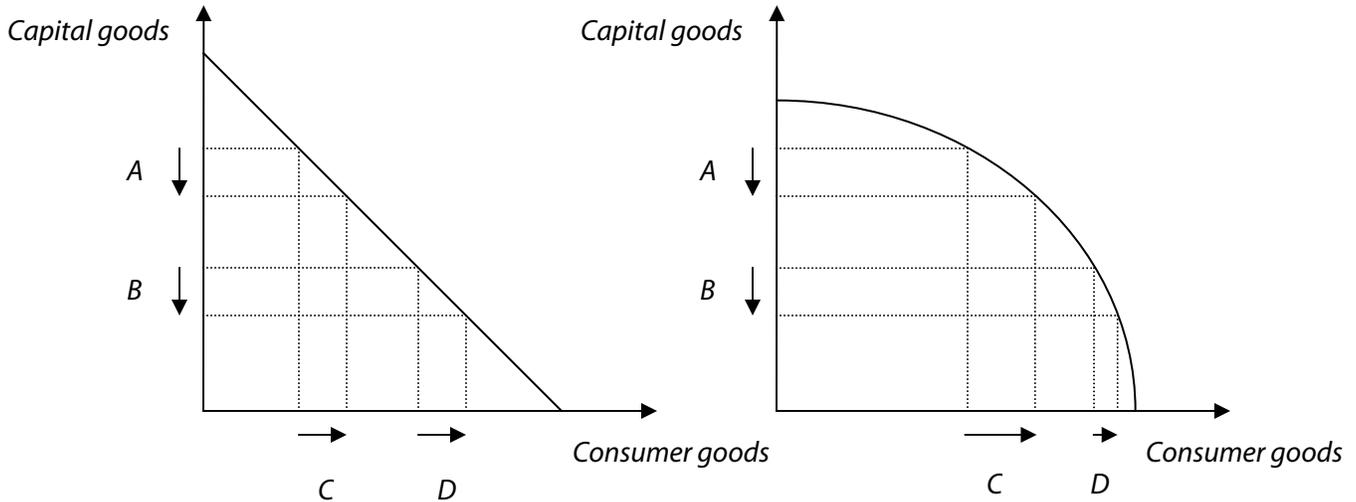
The choice a society has to make can be shown via a production possibility frontier (PPF) (or production possibility curve (PPC)). The maximum output an economy or society can produce using all its resources within the current state of technical knowledge.

- The axes show the two possibilities.
- Point A shows all resources producing capital goods so no consumer goods are made.
- Any point on the PPC means all resources are fully used (A, B, C).
- Any point inside the PPC means some resources are unemployed (D).

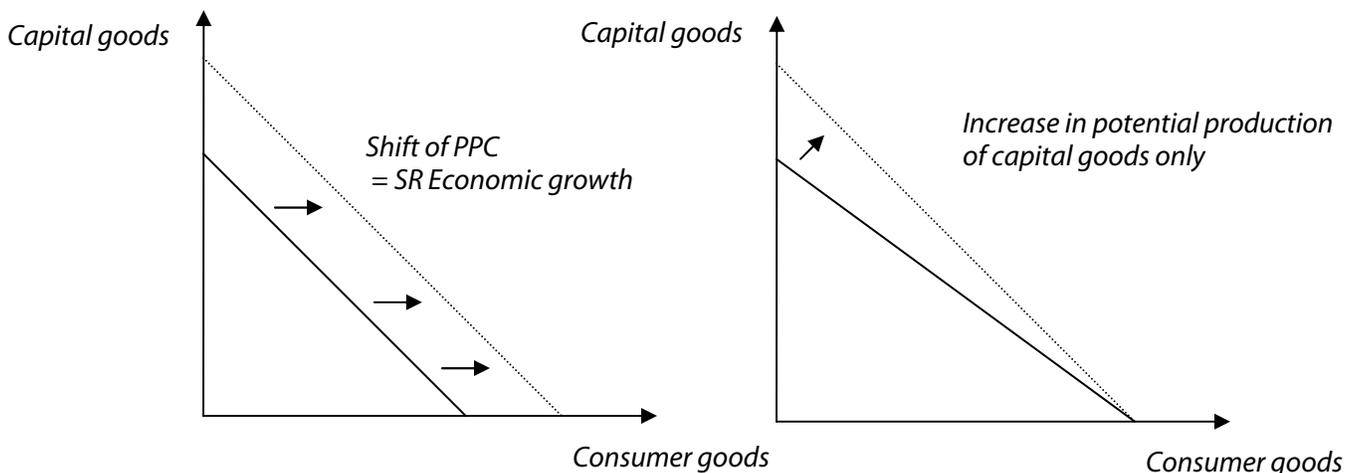


A PPC can show opportunity cost.

- A straight line shows constant opportunity cost, i.e.: You give up the same quantity of capital goods for each additional unit of consumer goods.
A = B, C = D.
- A curved PPC shows increasing opportunity cost, i.e.: for each extra unit of capital goods you give up more and more consumer goods.
A = B, C > D.



- To move production from capital goods to consumer goods involves reallocation of resources. If there was perfect factor mobility (i.e. resources were just as good at producing capital goods as consumer goods) we would have a straight line PPC. This assumption is not realistic so we have the curved PPC demonstrating imperfect factor mobility.
- The PPC will shift if you:
 - Have more/less factors of production.
 - The factors of production become more/less productive.
 - The state of technical knowledge advances.
- An improvement in A, B or C will shift the PPC outwards. This is called economic growth; the society has the potential to produce more.



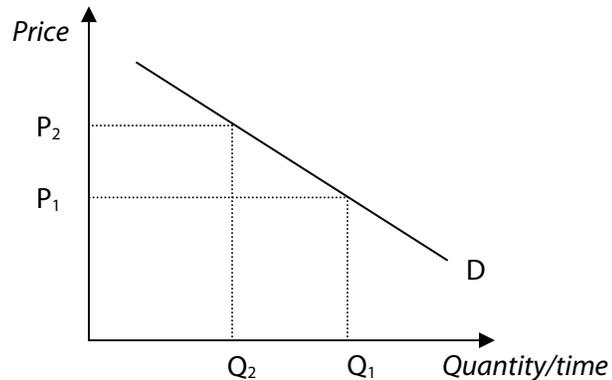
- If you just have improvement in the ability to produce one type of good (e.g. capital) then the PPC will shift only in that axis.

Competitive markets and how they work

Demand

Definition has three elements: Price, Quantity and Time. It is the amount of goods that consumers are willing and able to purchase at a given price over a certain time period. Demand has a schedule and a curve drawn on the assumption that all other factors (other than price) remain unaltered; the *ceteris paribus* assumption.

Price	Quantity/time
1	5
2	4
3	3
4	2
5	1



A change in price causes a movement along the demand curve. An increase in price from P_1 to P_2 leads to a decrease in quantity demanded (or *contraction* in demand) from Q_1 to Q_2 . There is an inverse relationship between price and the quantity demanded per unit of time. As price decreases the quantity demanded will increase (or an *extension* of demand), and vice versa. These are movements along the demand curve.

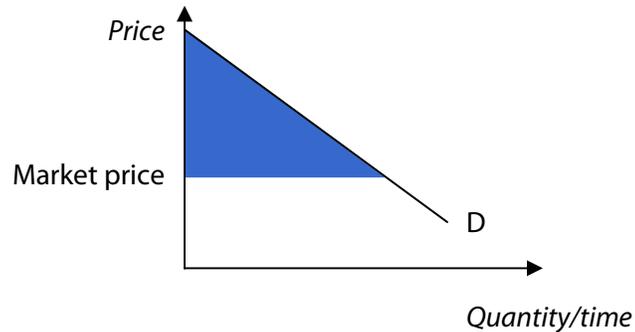
A shift in the demand curve is caused by a change in any of the factors that influence demand, *other than the price of the good or service*.

- Financial ability to pay, influenced by:
 - Disposable income – income after tax.
 - The availability and cost of credit (affected by interest rates).
- Attitudes toward the product, influenced by:
 - Advertising.
 - Taste.
 - Fashion.
 - Brand image/loyalty.
 - Peer pressure
- Price, availability and attractiveness of related products, influenced by:
 - Complements.
 - Substitutes.
- Other factors, specific to a certain products include:
 - Weather.
 - Future expectations.

Consumer surplus

Consumer surplus is the difference between what consumers *would* pay for a product (shown by the demand curve) and what they actually pay (shown by the market price). It is the difference between the total value consumers place on what they consume and the payments they actually make to purchase those units. This is represented by the shaded area on the

diagram. Examples of goods with high consumer surpluses include paracetamol and football tickets.



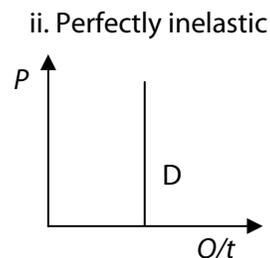
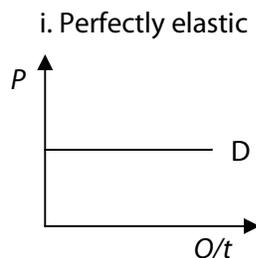
- Consumer surplus... ...decreases as equilibrium price increases
 ...increases as equilibrium price decreases
 ...decreases as demand becomes more elastic
 ...increases as demand becomes more inelastic

PED

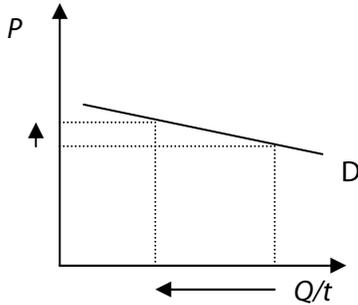
All measures of elasticity measure the change in one variable following a change in another variable. Where a small change in one variable has a more than proportionate effect on another variable the relationships are elastic. Where the change is less than proportionate it is inelastic.

$$\text{Price Elasticity of Demand (PED)} = \frac{\% \text{ Change in quantity demanded}}{\% \text{ Change in price}}$$

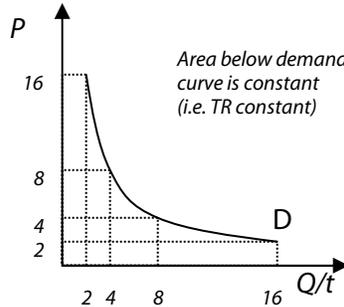
- Price Elasticity of demand is always negative (as an increase in price causes a decrease in the quantity demanded per unit of time), so the negative sign is generally not written.
- The determinants of PED are:
 - The availability of substitute goods:
 - Many substitutes → High PED (Elastic)
 - Few substitutes → Low PED (Inelastic)
 - The proportion of income spent on the good or service:
 - High proportion of income usually implies elastic PED.
 - The time period considered:
 - Over a short time period most goods are reasonably inelastic.
 - Over a longer time period many goods are more elastic.
 - Habitual consumption:
 - Addictive products have very inelastic PEDs.
- Some important values of PED:



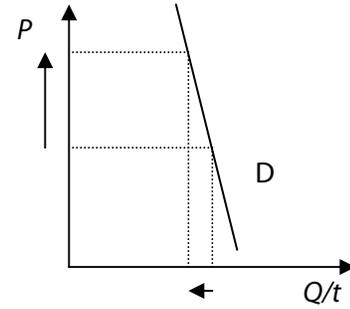
iii. PED > 1, Elastic



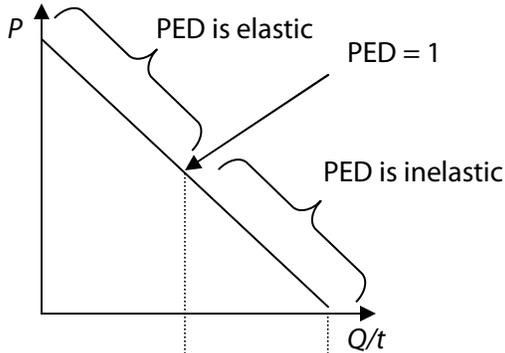
iv. PED = 1, Unitary elasticity of demand



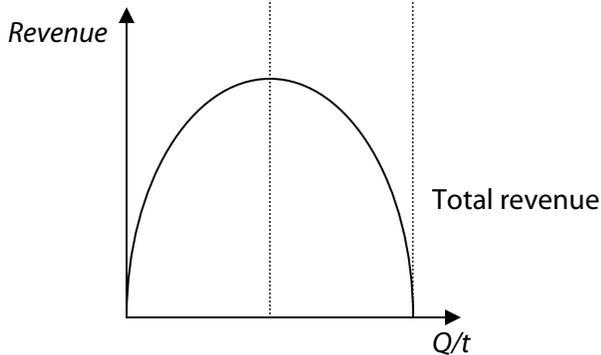
v. PED < 1, Inelastic



- PED and Total revenue ($TR = P * Q_{\text{sold}}$):
 - If a firm knows its PED it can see the effect of a change in price on its total revenue using this diagram:



- If PED is elastic:
 - An increase in price causes a decrease in total revenue.
 - A decrease in price causes an increase in total revenue.
- If PED is inelastic:
 - An increase in price causes an increase in total revenue.
 - A decrease in price causes a decrease in total revenue.
- Revenue is therefore maximised when PED = 1.



YED

$$\text{Income Elasticity of Demand (YED)} = \frac{\% \text{ Change in quantity demanded}}{\% \text{ Change in income}}$$

The sign of the YED shows:

- Positive YED demonstrates that that product is a 'normal good,' i.e.: that as income increases the quantity demanded per unit of time increases (people buy more of this type of good when they have a higher income). These are generally branded products.

- Negative YED demonstrates that that product is an 'inferior good,' i.e.: that as income increases the quantity demanded per unit of time decreases (people buy less of this type of good when they have a higher income). These are generally un-branded products.

The larger the number the larger the influence a change in income has.

XED

$$\text{Cross Elasticity of Demand (XED)} = \frac{\% \text{ Change in quantity demanded of one good}}{\% \text{ change in price of another good}}$$

The sign of the XED shows:

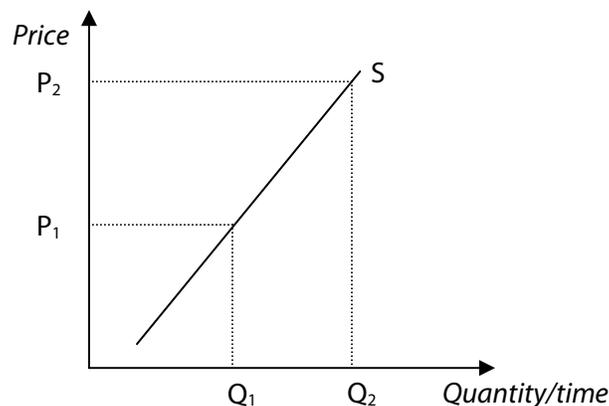
- Positive XED shows the goods are substitutes.
- Negative XED shows the goods are complements.

The larger the number the closer the relationship between the two goods.

Supply

Definition has three elements: Price, Quantity and Time. Supply has a schedule and a curve drawn on the assumption that all other factors (other than price) remain unaltered; the *ceteris paribus* assumption.

Price	Quantity/time
1	2
2	4
3	6
4	8
5	10



A change in price causes a movement along the supply curve, i.e.: an increase in price from P_1 to P_2 leads to an increase in quantity supplied from Q_1 to Q_2 . Price and Quantity demanded are directly proportional, as Price increases Quantity demanded per unit of time also increases.

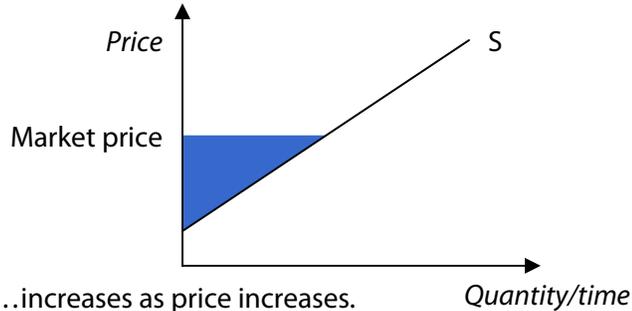
A shift in the supply curve is caused by:

- Changes in the firms costs of production:
 - Increased costs make the supply curve shift to the left.
 - Decreased costs make the supply curve shift to the right.
- The nature of the industry:
 - Easy access (i.e. low barriers to entry) shift supply to the right if the company is in a profitable industry.
- Indirect taxes and subsidies:
 - Increase in indirect tax shifts the supply curve to the left.
 - Increased in subsidies shifts the supply curve to the right.
- Other factors:
 - Weather (for agricultural products).

- The ease with which producers can shift production from one good or service to another, for example potatoes to carrots.

Producer surplus

Producer surplus is the difference between the price they would supply their product at (shown by the supply curve) and the price they actually get (i.e.: the market price). It is the difference between the revenue required by firms to supply and what they receive.



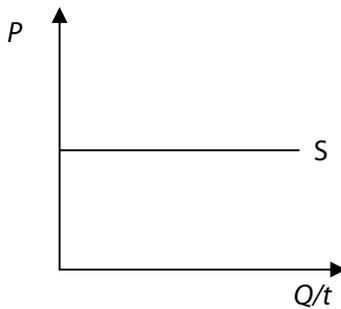
- Producer surplus...
- ...increases as price increases.
 - ...decreases as price decreases.
 - ...increases as supply becomes more inelastic.
 - ...decreases as supply becomes more elastic.

PES

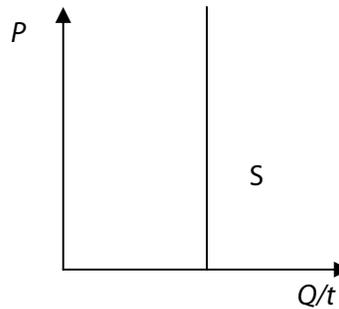
$$\text{Price Elasticity of Supply (PED)} = \frac{\text{Quantity Change}}{\text{Price Change}}$$

- Price elasticity of supply is always positive as an increase in price brings about an increase in the quantity supplied per unit of time.

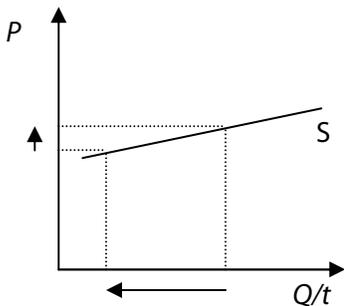
i. Perfectly elastic, PES = ∞



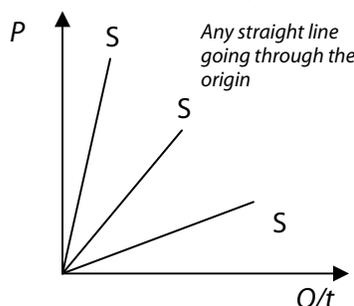
ii. Perfectly inelastic, PES = 0



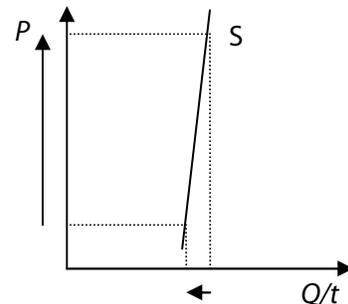
iii. PES > 1, Elastic



iv. PES = 1, "Unit elastic" or "unitary elasticity of supply"



v. PES < 1, Inelastic



- The determinants of PES are:
 - The level of stocks available:
 - High stock levels give elastic PES values.
 - Low stock levels give inelastic PES values.
 - The ease with which production can be increased:
 - Spare capacity (easy to increase production) gives elastic PES values.
 - No spare capacity (hard to increase production) gives inelastic PES values.
 - The time period considered:
 - During a short time period most supply curves are reasonably inelastic, is not perfectly inelastic.
 - Over a longer time period supply curves are generally more elastic.

Equilibrium

The price the free market sets, where there is neither excess supply or excess demand and there is no tendency to change, *ceteris paribus*. This is the price at which the supply and demand curves cross.

Firms and how they operate

Costs

George rents half a soccer pitch for £50, and decides to grow vegetables. Initially he has to do everything himself; digging, sowing, watering, fertilising and harvesting.

George employs Jack to help; both take a wage of £10. Specialisation becomes possible as Jack is particularly good at digging and their total produce more than doubles.

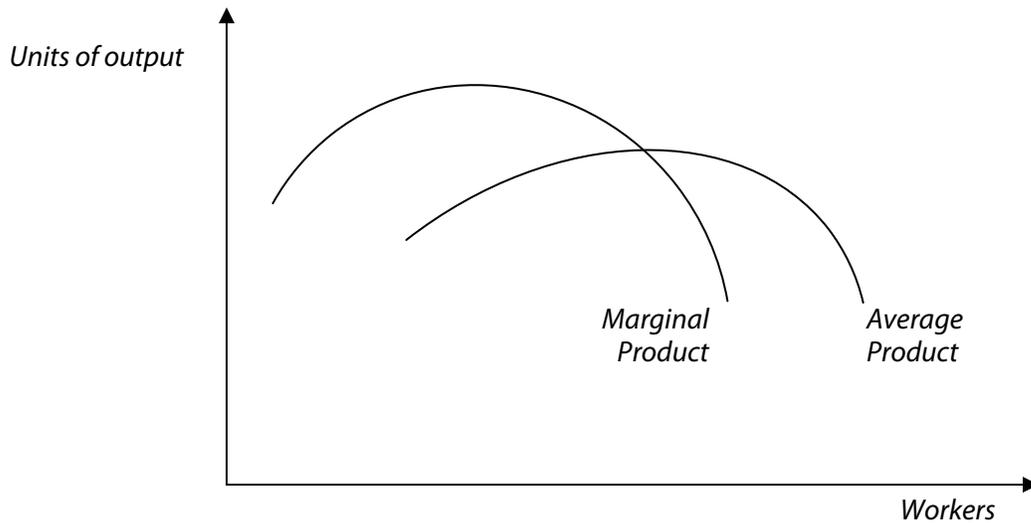
Hannah is employed next and is a world watering champion and further specialisation allows their produce to grow still further.

Gaz is employed as an extra worker but total produce didn't increase by as much as before as their work starts to overlap.

As additional workers are employed total produce actually falls as they overwork the land due to the law of diminishing returns, a short run concept.

Labour	Total produce	Productivity per worker (Average product)	Marginal product
0	0	0	0
1	20	20	20
2	50	25	30
3	90	30	40
4	120	30	30
5	140	28	20
6	150	25	10
7	140	20	-10

This will generate a graph which can be generalised by the following:



The marginal product cuts the average product at its highest point, i.e.: where each worker is producing the highest capacity.

To summarise, as more of the variable factor, labour, was added to the fixed factors of land and capital the additions to output increased before decreasing and eventually becoming negative. This is the law of diminishing returns.

$$\text{Average Product} = \frac{\text{Total Product}}{\text{Number of workers}}$$

$$\text{Marginal Product} = \frac{\text{Change in total product arising from the addition of an extra worker}}{\text{extra worker}}$$

The costs incurred on George's farm can be broadly categorised into two groups, fixed costs and variable costs.

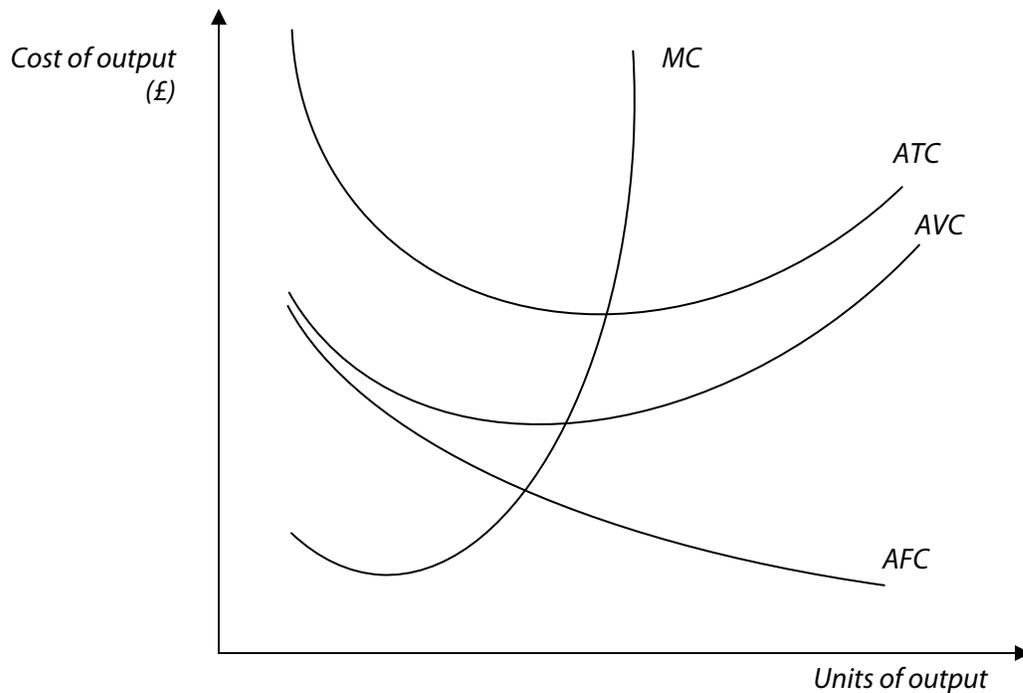
- Fixed costs are costs that remain constant irrespective of output. Examples include:
 - Rent for the land.
 - Capital (i.e. tools).
- Variable costs are costs that change depending on the level of output. Examples include:
 - Wages for labour.
 - Seeds.
 - Water.

The farm operates by adding variable units of a variable factor (in this case labour) to fixed amounts of fixed factors (in this case land and capital). Here we expect the law of diminishing returns to happen. This is a *short run* situation.

Output	Fixed costs	Average fixed cost (AFC)	Variable costs	Average variable cost (AVC)	Total cost	Average total cost (ATC)	Marginal cost (MC)
0	£60	-	£0	-	£60	-	
1	£60	£60	£50	£50	£110	£110	£50
2	£60	£30	£80	£40	£140	£70	£30
3	£60	£20	£105	£35	£165	£55	£25
4	£60	£15	£152	£38	£212	£53	£47
5	£60	£12	£225	£45	£285	£57	£53
6	£60	£10	£330	£55	£390	£65	£105

$$AFC = \frac{\text{Total fixed cost}}{\text{Output}} \quad AVC = \frac{\text{Total variable cost}}{\text{Output}} \quad ATC = \frac{\text{Total cost}}{\text{Output}}$$

When plotted a generalisation of the AFC, AVC, ATC and MC gives:



The MC curve cuts the AVC and ATC curves at their minimum points.

Economies of scale

Economies of scale are the advantages of 'being big.' As the size of production plant increases, unit costs fall. Economics of scale is a long run concept, where no resources are fixed. Economics of scale can take the following forms:

- Purchasing – ‘bulk buying’
- Marketing – dominance over advertising
- Technical – more complicated machinery and capital for use in production
- Managerial – firms attracting highly skilled specialised staff
- Financial – ability to borrow money from banks at a lower cost.

Diseconomies of scale are the disadvantages of being too big and cause the unit cost to rise after a given level of output (the MES, minimum efficient scale, the lowest point on the LRATC curve). This can happen due to:

- Lack of/poor communication
- Lack of/poor organisation
- Low morale/motivation among workers

Profit maximisation

Private firms are in business to gain the reward for entrepreneurship, profit. Profit is maximised at the point where there is the greatest difference between the total cost of production and the total revenue received from selling what has been produced.

Profit maximisation occurs when a firm is allocatively efficient, that is $MR (P) = MC$, the cost of producing the last good or service is equal to the amount the consumer is willing to pay. Here no profit is made, so total profits have been maximised.

Other objectives

In practise many firms do not maximise their profits for a number of reasons.

- For many firms it is simply impossible to know where this output level lies, to aim for sales revenue maximisation is much easier to quantify.
- Supernormal profits in an industry can attract other companies into entering the industry and so reduce market share.
- Alternatively a firm may aim to increase market share by aiming for sales maximisation, operating at a loss in the short run. This can often be seen when a large company branches out to offering different goods and services and is used to gain market share.
- Satisficing; a state where a company aims to keep share holders happy and other parties involved in the economic transaction. Large firms can choose to give money to charity and take care of the environment at the expense of some profit.

Market structure

Features	Perfect Competition	Monopolistic Competition	Oligopoly	Monopoly
Number of firms	Large number	Large number	A few big firms dominate the market	Single firm in theory, >25% of market in practise
Ability to enter/leave	Complete freedom of entry	Few barriers to entry/exit	Considerable barriers to entry/exit	Very high barriers to entry
Contestability	Highly contestable	Highly contestable	Little contestability	No contestability
Abnormal profits	Only in the short run then they are competed away	Only in the short run then they are competed away	Possibly; barriers to entry prevent new entrants but competition may lower them	Yes, in both the short run and long run (due to ability to prevent new entrants)
Motivation	Profit maximisers	Profit maximisers	May or may not be profit maximisers; may pursue other objectives; satisficing	Profit maximisers
Pricing	Price TAKER	Price MAKER	Price MAKER	Price MAKER
Products	Homogenous	Differentiated	Differentiated	Single product with lack of close substitutes
Concentration ratio (3 or 5 firm)	Very, very low	Very, very low	Very high	not applicable in theory (1 firm); very high in practise
Type of competition	Price competition only	Price and non-price competition	Mainly non-price competition (e.g. advertising, brand proliferation)	No competition in theory
Availability of substitutes	Lots of other products which are exact substitutes	Lots of substitutes but not exact due to branding	A few substitutes available but consumers may have high brand loyalty	No substitutes available
Consumer choice?	Yes, from lots of identical products	Yes, from lots of similar, but not identical products	Limited choice from a few suppliers	No choice; a single product which is unique
Other			The firms are <i>inter</i> -dependent and liable to collide	

Barriers to entry

Barriers to entry reduce contestability in a market, the ease with which firms can enter and leave the market. Barriers to entry, the difficulties faced by a firm entering a market, can be categorised as follows:

- Legal: Where the law prevents firms entering the market entirely (such as the Royal mail in delivering mail under 60g) or restrictions on entering the market in various forms of regulation including patents prohibiting the manufacturing of some goods and services by more than one company.
- High costs of capital necessary for the industry, for example aeroplanes are very expensive as is mining equipment. There is a large risk involved in buying this capital for the entrepreneur.
- Large firms taking advantage of economies of scale can have much lower costs so new entrants operating at break-even point cannot compete with the price of the larger producers (including advertising economies of scale where a firm may have an advertising monopoly).
- Strong brand allegiance by consumers to an existing producer.

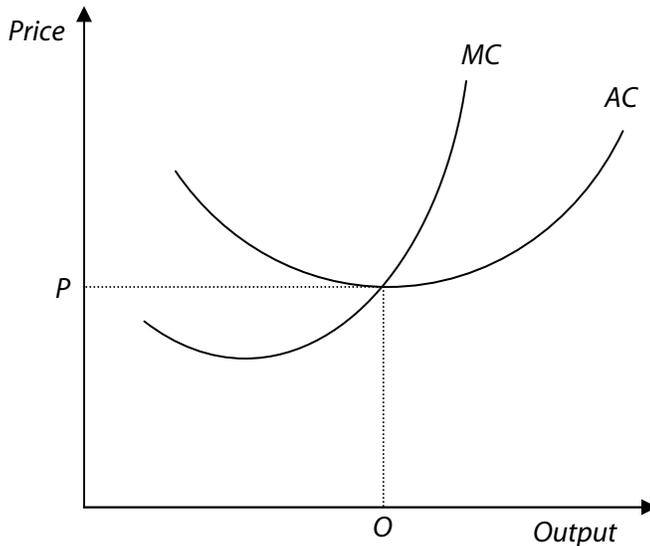
Unit 2: Market failure

Economic efficiency within competitive markets

Any economy is said to be working efficiently...

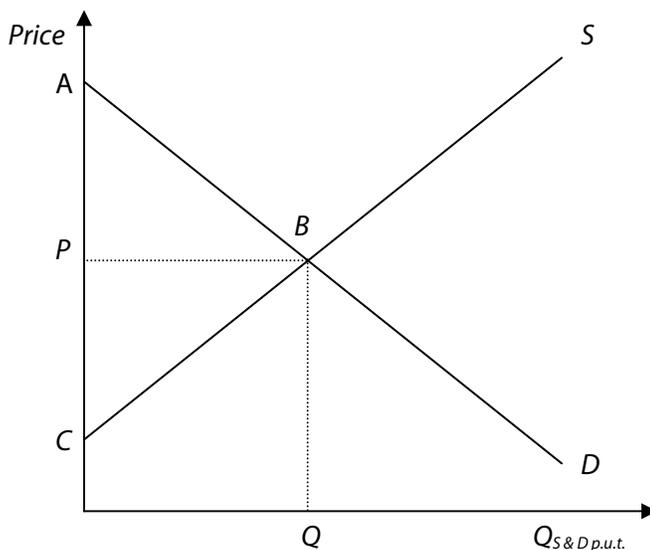
- If scarce resources are allocated in a way that maximises household's utility/welfare.
- If the economy is producing the 'right' goods and services to satisfy as many consumer wants as possible.

Productive efficiency



Where $MC = AC$, at the lowest point on the AC curve. Here goods and services are being produced as cheaply as possible. As firms produce at a lower price this causes an increase in supply. Excess supply causes the price to drop and so demand increases, increasing the consumer surplus. At the lowest point on the AC curve consumer surplus is maximised so the economy is also *allocatively efficient*.

Allocative efficiency



There is an equilibrium price at P . Here consumer surplus is PAB and producer surplus is PBC .

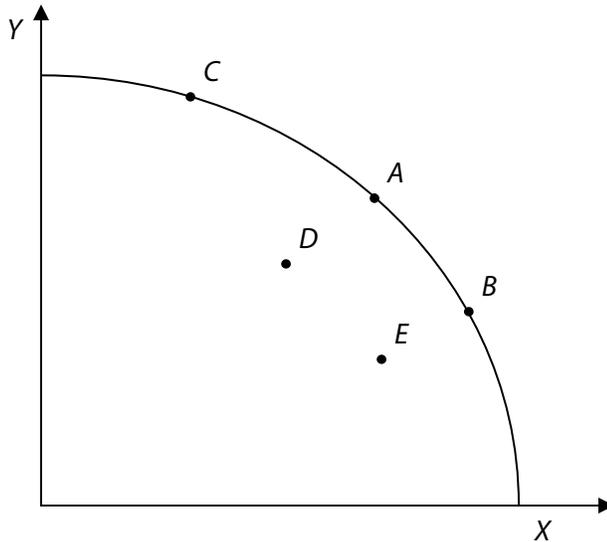
At the equilibrium consumer surplus and producer surplus are maximised. This is *allocative efficiency*.

At this point $P = MC$, i.e. the price the last consumer values a good or service at is equal to the extra cost of producing that good or service. If all markets are in equilibrium (this is a highly theoretical situation) then the economy is allocatively efficient, *but* we don't know if the goods are being distributed evenly.

Pareto efficiency

When no one in society can be made better off without making someone else worse off the economy is said to be Pareto efficient. It is hard to measure Pareto efficiency as the relative worth of one good is hard to quantify against another.

Efficiency and the PPC/PPF



At any point on the PPC the economy is performing efficiently (A, B, C). Point A demonstrates Pareto efficiency – a move to produce more of X or Y will result in a greater than proportionate loss of production of the other. At points inside the PPC (D, E) the economy is working inefficiently.

Efficiency and competition

Perfect competition throughout the economy should lead to maximised efficiency as identical products, no barriers to entry, large numbers of buyers and sellers coupled with perfect knowledge leads to the firms being price takers.

This therefore drives the price down to where $P = MC$ (where the cost of producing the last good or service is the same as the value the last consumer is willing to pay) and as $MC = MR$, this leads to profits being maximised so perfect competition will create allocative efficiency.

Why markets may not work efficiently

Externalities

An externality is a third party effect arising from the production or consumption of a good or service.

Private cost – costs incurred by the supplier.

External costs – costs incurred by anyone other than the supplier.

Social costs = PC + EC

Private benefits – benefits enjoyed by the consumer.

External benefits – benefits enjoyed by anyone other than the supplier.

Social benefits = PB + EB

Obesity and fatty foods

- Impending government report
- Mars bar provencettes at HRSFC
- 66% of males and 53% of females are classified as overweight or obesity

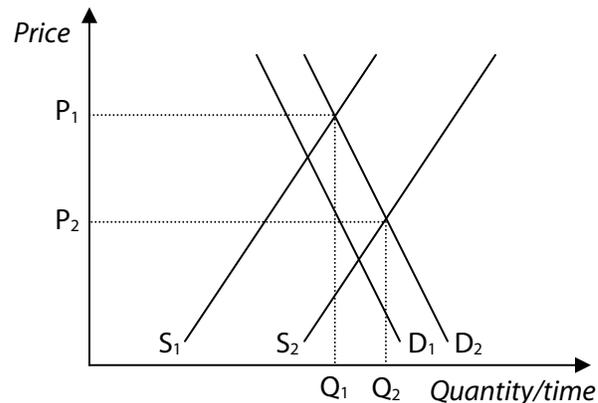
There is a market failure as fatty foods are over consumed.

- Failing to achieve economic efficiency
- In particular, we seem to have *allocative inefficiency* as resources are being allocated to uses that bring about an inefficient overall outcome
- Arguably the market also fails Pareto efficiency

Causes and consequences of obesity

Possible causes	Possible consequences
<ul style="list-style-type: none"> • Overeating • Fatty foods and inappropriate diet • Lack of exercise • Fewer play areas for children • Greater availability of junk food • Increasing popularity of sedentary pastimes • More advertising • Political lobbying • Changing consumer preferences and increasing incomes • Lower food prices in real terms • Lower prices dictated by suppliers 	<ul style="list-style-type: none"> • Greater incidence of cancer, diabetes, weak bones and blindness which costs the NHS £500m a year; opportunity cost couples with greater levels of autism and illness. • Development of new products.

Fatty foods market

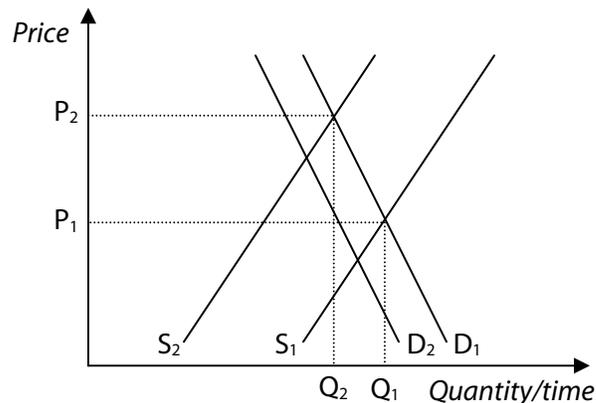


A large increase in supply from S_1 to S_2 is caused by suppliers demanding lower prices from suppliers. A smaller decrease in demand, caused by advertising, higher incomes and consumers having convinced themselves they have less time to cook so they buy prepared meals that are generally higher in fat. This causes a decrease in equilibrium price from P_1 to P_2

and an increase in equilibrium quantity demanded from Q_1 to Q_2 . This is overproduction, causing a health problem, or $Q_2 - Q_1$.

Suppliers only consider the private costs of production. Additional external costs exist such as increasing obesity, putting suppliers out of business. Taking all costs into account causes supply to shift to the left, from S_2 to S_1 . This reduces overproduction. One way of making the firm pay for externalities is through taxation. Alcohol and cigarettes are good examples of where the government aims to get the firms to indirectly pay the external costs in the form of duties. "Fat tax" is being considered as a way for the government to shift supply from S_2 to S_1 for fatty foods.

Healthy foods market



Decrease in demand as consumers buy fatty foods instead, and a larger decrease in supply is caused as consumers leave the market. This causes a higher equilibrium production and a lower quantity demanded, under production $Q_1 - Q_2$.

Consumers only consider private benefits of consumption, adding in the social benefits would increase demand from D_2 to D_1 and under production would be reduced. Healthy foods are subsidised and the government is contemplating a scheme to introduce free healthy food into schools.

Controlling the spending of consumers causes political issues as this is a movement away from positive economics – dealing with facts – to dealing with opinions.

Merit goods are goods or services that are better for us than we realise.

Demerit goods are goods or services that are worse for us than we realise.

The market failure here is in terms of information; there is an overproduction of demerit goods (fatty foods) and underproduction of merit goods (healthy foods).

Externalities in Sweden

The production of tinned herring in Sweden causes externalities as detailed below.

	Arising from production	Arising from consumption
Positive externalities	<ul style="list-style-type: none"> • Creation of jobs in the local area. • Cheap fuel for local public transport reducing consumption of fossil fuels. • Cleaner sea with new waste disposal. 	<ul style="list-style-type: none"> • Healthy population lowers costs of health spending and creates a more productive work force.
Negative externalities	<ul style="list-style-type: none"> • Dirty sea using old waste disposal. 	<ul style="list-style-type: none"> • Disposal of packaging. • Smells from opening fermented fish products.

Market dominance and X-inefficiency

Microsoft is the best current example of x-inefficiency occurring within a monopoly. The market failure is caused by:

- Economies of scale, which gives:
 - Lower costs.
 - Higher profits.
- Barriers to entry
- More competitive in the past.

Aspects of market failure observed in Microsoft:

- Allocative inefficiency as $P > MC$.
- Market dominance which causes a lack of competition.

- Productive inefficiency due to the lack of pressure to cut costs (no competition), referred to as X-inefficiency.

X-inefficiency is a situation where costs are higher than necessary, for unknown reasons (hence the 'x'). Therefore many governments have competition policies to ensure firms do not exploit monopoly power.

Public, quasi-public and private goods



Public goods have two characteristics:

1. Non-excludable – one person cannot stop another from consuming that good or service.
2. Non-rival in consumption – the consumption of an individual does not limit the amount available for others.

Private goods have the opposite characteristics to public goods:

1. Completely excludable.
2. Completely rival in consumption.

For private goods the private benefits are large. This means that consumers are willing to pay a price for the provision of private goods and so private firms enter the market to provide the consumer with the good or service.

Public provision of public goods is more likely than private provision as in a free market public goods are severely under produced or not produced at all. This can be explained using game theory.

The prisoner's dilemma

"You are one of two prisoners being held in separate cells. Soon, you must either plead guilty or not guilty to a crime you have been arrested for, without knowing the plea of your fellow prisoner. The judge and jury know that at least one of you is guilty but aren't sure whether you both are.

"If you both plead guilty, you will each receive a 5-year jail sentence as acknowledging your guilt will be viewed sympathetically by the court. If one of you pleads guilty and the other pleads not guilty, the outcomes will be an 8-year sentence and freedom respectively. If both of you plead not guilty you will receive sentence of 7 years as the courts will see that you both need a form of punishment even though your guilt may be uncertain. There is no way that you can contact the other prisoner to find out how they are going to plead."

The prisoner faces options that can be expressed in the

	Jack	
	Guilty	Not Guilty
Ali		
Guilty	5 / 5	0 / 8
Not Guilty	8 / 0	7 / 7

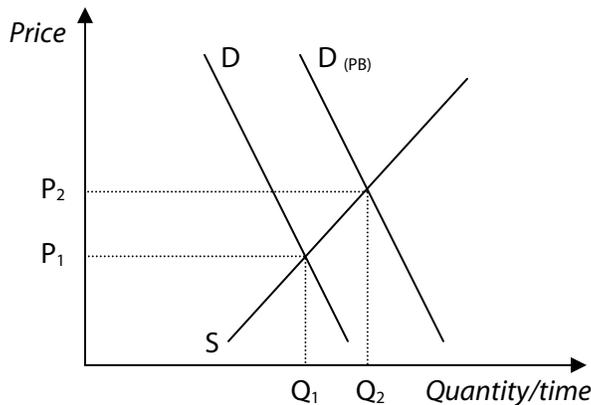
grid to the right. Not guilty is the dominant strategy. By choosing the option that is best for themselves the final outcome is worse for them overall. This is what game theory stipulates; that choosing the best option for oneself will result in a final outcome that is worse for everyone.

This can be used to explain the lack of provision of public goods in a free market as consumers are unwilling to pay. The free rider effect stipulates that the mentality of the individual is that everyone else will pay so the individual does not need to. As everyone takes the attitude the good or service is not provided in the free market, so public goods are usually provided by the public sector, financed through taxation.

De/merit goods

Merit goods:

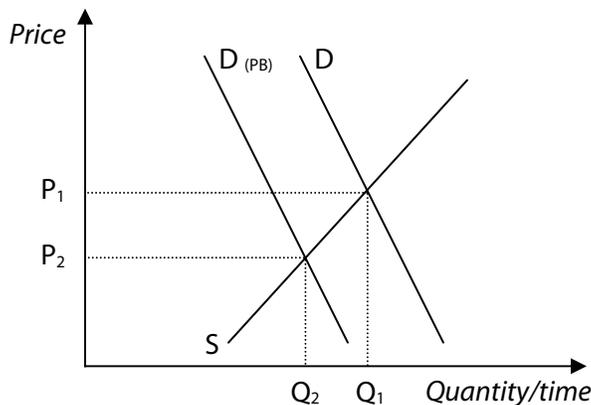
- Have positive externalities.
- Have additional private benefits that the consumer is unaware of.
- Are associated with a tendency to under consume.
- Good examples of merit goods include health and education.



Health and education are under consumed by $Q_2 - Q_1$.

Demerit goods:

- Have negative externalities.
- Have additional private costs that the consumer is unaware of.
- Are associated with a tendency to over consume.
- An example of a demerit good is smoking.



Cigarettes are over consumed by $Q_1 - Q_2$.

Factor immobility

Where the inability of factors of production to be moved from one use to another brings about market failure.

Inequality

Why is this a problem?

- It depends on value judgements, some people may not view equity as a problem.
- However it can be argued that equity issues are a problem as some cannot earn enough money to obtain access to basic goods and services. These individuals can be regarded as living 'below the poverty line.'
 - Absolute poverty is when individuals earn less than a specific sum of money required for a basic standard of living.
 - Relative poverty is income related in relation to some measure of income. Generally the median income is used as the mean is easily skewed by large earners. Earning 50% of the median income may be viewed as relative poverty, for example.
- Others may not have access to certain goods and services, certain aspects of health care and insurance, for example.
- Unequal votes 'cast' through spending patters (e.g. Jacuzzis vs. operations).

Solutions to the problem

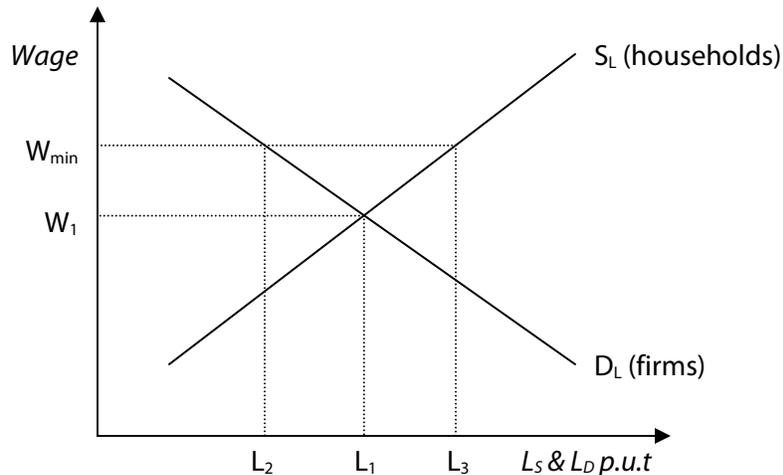
1. Redistribution of income

- Requires a taxation system;
 - Progressive income tax systems (i.e. those that take a higher % of income for higher earners).
 - Regressive expenditure tax system as those on lower incomes spend more of their income so a greater proportion of income goes in tax. Zero-rating on children's clothes, food and lower rates on domestic fuel make the system less regressive.
- Requires a benefit/welfare system;
 - If unemployment benefit is set too high it may distort the working of the labour market especially if a poverty trap exists (where an individual receives more in benefits than they could earn by working). This causes a further market failure.
 - There is no control over what people spend the benefits money on (it is debateable as to if control here is right or wrong) as some may choose to gamble their benefits or spend it on alcohol or cigarettes.
 - Other benefits are 'in-kind' such as a free place in school and child care vouchers.
 - Some benefits are given to all income groups, other benefits are targeted at specific groups such as free prescriptions for the unemployed and students.

So here government intervention can lead to a further market failure.

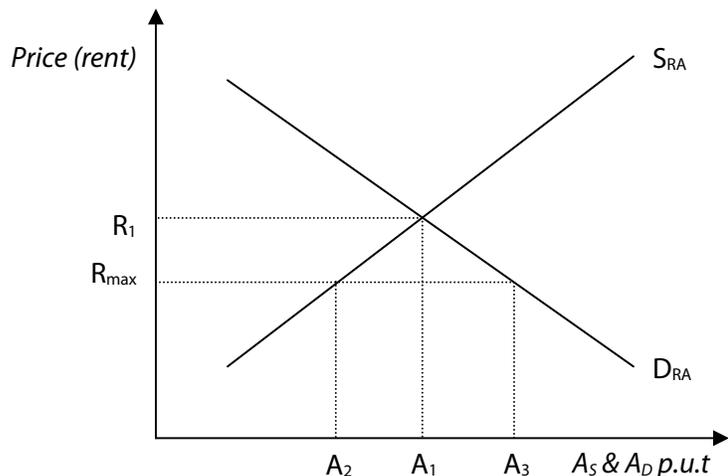
2. Set a minimum wage

- A minimum wage below W_1 would have no effect as W_1 is already the equilibrium wage.
- A minimum wage at W_{\min} will lead to redundancies of $L_1 - L_2$ and an excess supply of labour (i.e. unemployment) of $L_3 - L_2$.



Unemployment can be seen as market failure so government intervention in the form of a minimum wage can cause a further market failure. The extent of this will depend on the elasticity of both supply and demand.

3. Set a maximum price (e.g. rent controls)



- A maximum rent above R_1 would have no effect as the equilibrium in the free market is R_1 .
- A maximum rent at R_{\max} will lead to excess demand.

Therefore another market failure is created in the form of excess demand, so from all three examples above government intervention to solve one market failure can cause another.

Government intervention and further market failure

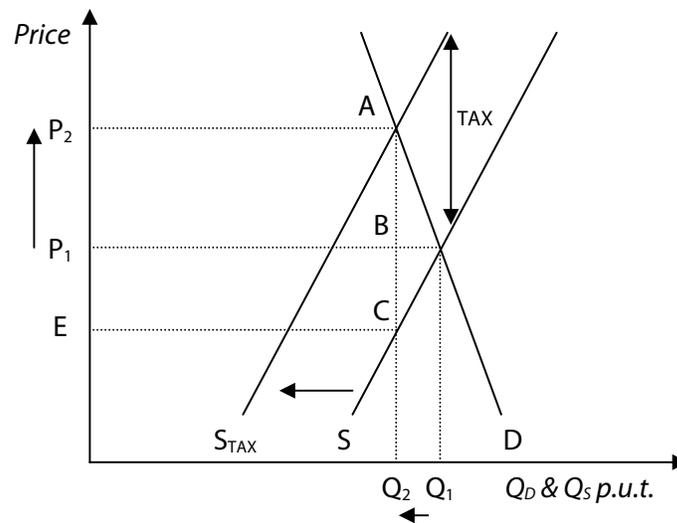
Market intervention by the government can be broadly classified into five categories:

- Financial intervention (e.g. taxes and subsidies).
- State provision (of public and merit goods).
- Redistribution (through taxation and government spending).
- Regulation (break up monopolies, do not allow gambling until 18 years, driving until 17 years).
- Information.

Financial intervention (taxes and subsidies)

An example of financial intervention in the 2004 budget is the increased duty on cigarettes. This is an increased manufacturing cost. The duty causes a decrease in the quantity supplied from Q_1 to Q_2 and an increase in price from P_1 to P_2 . This duty aims to reduce consumption by shifting the supply curve as recent government information campaigns aimed at shifting demand inward were no effective enough.

In the diagram beneath AC demonstrates the cost of the increased tax, so the increase in total government revenue is P_2ACE , P_2ABP is paid by the consumer and P_1BCE by the firm.



The outcome here is increased tax revenue for the government and decreased consumption.

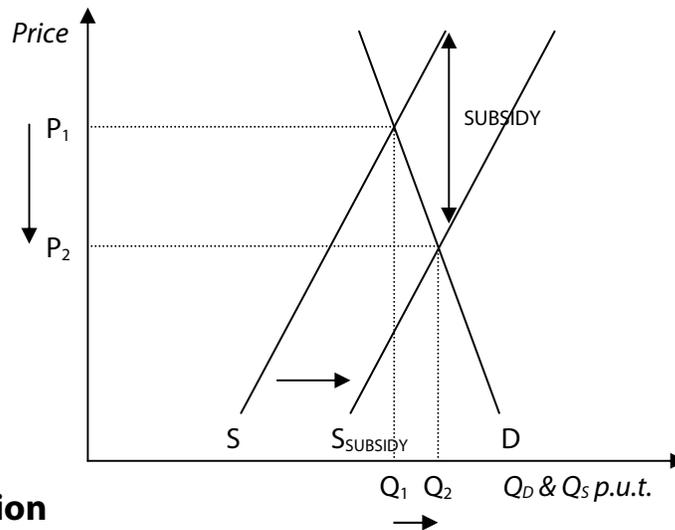
Part of the external cost of producing and consuming cigarettes has been internalised, that is that it has become part of the private cost.

Smaller increases in the duty on environmentally friendlier fuel may switch consumption away from leaded petrol.

An example of a subsidy in the budget is in the increased subsidy on childcare.

External benefits are likely from supplying more child care at a cheaper price. Subsidising should lead to a lower price and a higher quantity consumed. One argument against the increased subsidy is that it benefits all irrespective of income. A solution has been to give childcare 'vouchers' to specific targeted groups.

This should increase supply as shown below causing an increased quantity demanded at a lower price.



State provision

Increased education and health care services provision are examples of state provision in the Budget. Arguably subsidised child care is also state provision, these are quasi-public goods.

Redistribution

An example is the £100 payment to over 70's to help with council tax. Fiscal drag, not increasing tax bands in line with inflation and increasing incomes, causes a redistribution effect from tax payers to pensioners.

	Pre-budget		Post-budget
Income	£20,000	+4%	£20,800
Tax free allowance	£5,000	+2%	£5,100
Taxable income	£15,000		£15,700
<i>Main rate of tax is 22%</i>			
Actual tax paid	£3,300		£3,454
Tax as % of income	16.5%		16.6%

Cost benefit analysis

This approach is used for helping to assess the nature and extent of market failure, to enable decisions to be made concerning those issues.

- Should the government intervene?
- What form should the intervention take?

Step 1: Identify *all* costs and benefits (private and external) associated with an issue.

Step 2: Assign monetary values to the costs and benefits identified.

Step 3: Forecast future costs and benefits.

Step 4: Analyse and interpret all information on costs and benefits.

Step 5: Decision making:

- Yes if social benefits are greater than social costs;
- No if social costs are greater than social benefits.

Unit 3: The national and international economy

Macroeconomic objectives

The government has four key macroeconomic objectives. These are:

- A high, sustainable rate of economic growth,
- Low, stable inflation,
- Balance of payments equilibrium and
- Low unemployment.

The government is aiming for 1-2% inflation using the HICP measure, 3% growth, low unemployment and equilibrium in the balance of payments. Currently the UK is experiencing a balance of payments deficit, very low unemployment (~5%), low growth and low inflation.

Unemployment

What is unemployment?

An economic definition of unemployment is when resources are not utilised to their full potential. This includes resources such as land – not just labour.

Unemployment is more commonly used to describe all those willing and able to work but unable to find a job. This means all members of the UK's labour force ages 16-65 years old.

How is unemployment measured?

There are two key ways in which unemployment is measured.

Claimant count

The first is the claimant count. This measures those who are willing and able to work and eligible to claim unemployment benefit. It is used as a cheap and easy way for the government to obtain figures of both the entire economy and of different regions. The government has power to change regulations

The claimant count can under estimate unemployment because:

- Exclusion of those with savings and those with a working partner.
- Potential applicants being put off by lots of paper work and only a small chance of gaining any benefit.

...and can also over estimate unemployment because:

- Some claim benefit who are not actively seeking work, or who participate in the black market.

Labour force survey

The second way that unemployment can be measured is the labour force survey. It defines unemployment as those actively seeking employment. To calculate the figures a proportion of the work force are asked if they consider themselves to be unemployed.

Compiling this survey is more costly so it is performed less frequently, only once per quarter (3 month period) and does not demonstrate a regional break-down of figures. The labour force survey is independent of the government and is the standard for international comparisons.

The labour force survey generally over estimates unemployment because of the definition it uses.

Does an increase in employment mean that there must be a decrease in unemployment?

Not necessarily, a variety of factors can allow employment to increase without unemployment decreasing:

- Increased participation (particularly of women over recent years).
- School/college leavers taking up employment.
- Employment of migrant workers.
- Part-time worker adopting a "portfolio career" or simply working more than one job.
- Both measures of unemployment are inaccurate.

Types of unemployment

Involuntary

- Demand-deficient or cyclical unemployment: when in the business cycle there is a recession. There is a slow down – a recession – in the entire economy there will be lower incomes in the economy, so consumption will be lower, and so fewer workers will be required to produce these goods. There is usually a time-lag between the business cycle and employment as there is a large cost to businesses associated with firing workers and hiring new workers.

Voluntary

- Frictional or search unemployment: when a worker leaves one job (either voluntarily or involuntarily) and moves to a new job there is a period of unemployment. This is not a problem as long as this period is short lived and the worker has adequate information about getting a new job. In the UK this 'natural rate' of unemployment is ~2-3%.
- Structural unemployment: when an industry has moved on through technological development or tastes have changed so a good or service is no longer required. Good examples in the UK include mining and shipbuilding industries. Seasonal unemployment is a subcategory of this, for example Santa Claus' are not required to work in the summer. Structural employment depends on:
 - Mobility of labour to move from one occupation in a declining industry to an occupation in a growing industry and to move from one geographical location to another area where there may be employment.
 - The pace of change. If this is very quick structural unemployment is likely to be higher.
 - Regional concentration of a declining industry, for example coal mining may mean a particular region suffers more severely.

What problems face the unemployed?

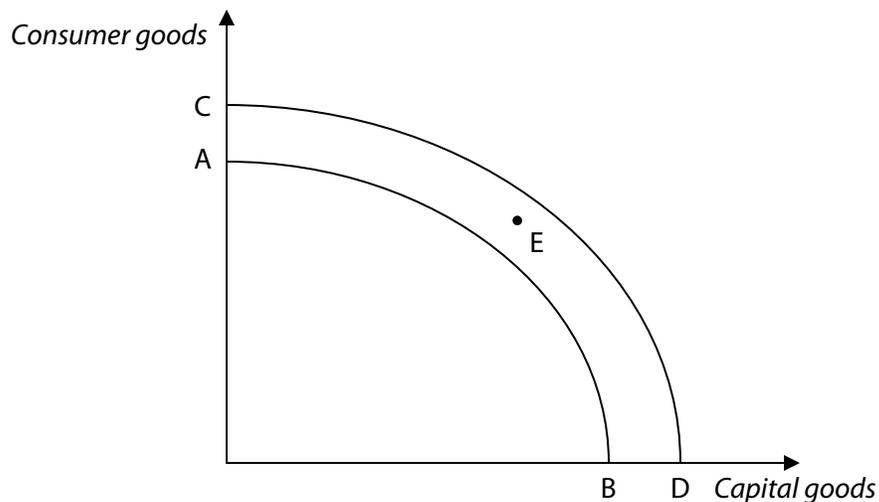
There is a close correlation between perceived job security and psychological well being. Many of those in low paid and insecure jobs suffered similar psychological problems to those out of work.

Some of the psychological effects caused by unemployment include depression and depreciated social skills. Many people out of work find themselves divorcing their partners and do not have access to information about new jobs so have difficulty finding new employment.

Women were more seriously affected by the prospect of there being no work available.

Why might these problems give rise to costs not just for the unemployed but also for society as a whole?

Unemployment is a broad term used to describe those willing and able to work but unable to find a job. Economically unemployment causes a problem as the individual is not active in the production of a good or service within the economy. This means the economy performs below the productive capacity of the economy. This can be best illustrated on a PPF, a 'Production Possibility Frontier,' a diagram that demonstrates all combinations of total output that an economy can produce, using all of its resources in the most efficient manner.



The possible productive capacity of the economy is illustrated by the line. Points enclosed within the area represent an inefficient use or waste of resources. Year on year the productive capacity of the economy grows from AB to CD. Typically for the UK this growth rate has been ~2.5%. However, unemployment causes the economy to be at point E, which is below the productive capacity of the economy, due to the wasted resource, labour. The gap between point E and the line is called the output gap.

As the potential output of the economy continues to grow at ~2.5% unemployment (*ceteris paribus*) means that even if the economy managed to grow at 2.5% it would still fall short of the possible increase in output. It is high impossible to recover this lost output, caused by unemployment.

The cost of unemployment to tax payers is high as the government loses revenue in tax that the individual would have paid, had they been in employment and also in transfer payments made to the individual in the form of benefits. The losses through taxes are high from the VAT on the increased goods and services that an individual would have purchased with their increased income to the NI contributions and income tax. Therefore the tax payers have to pay for both the funding for the transfer payments and the additional taxes the unemployed person would have paid had they been in employment.

There are many further costs to the individual and to the community, as detailed above. Unemployment decreases the income of an individual which leads to decreased spending. In areas of high unemployment this can cause many businesses to close. Households have little

spare money to spend on their gardens and property and an increase in burglaries and vandalism often follows.

Furthermore unemployment makes many feel like 'failures.' This can lead to a variety of effects including marriage break-up, suicide and mental stability. Death rates are generally higher amongst those unemployed than those who have not been out of work.

As people are out of work for longer workers become deskilled, and their skills may be out of date. This can cause problems finding work and can cause a downward spiral. The government aims to help people in this situation by their 'new deal' where training is offered free of charge.

Inflation

Inflation is a sustained change in the overall price level within the economy over a period of time. Generally the term inflation is associated with a positive change, a rise in the price level and the term deflation with a fall in the price level. Inflation is usually expressed as a percentage change.

The old measure of inflation in the UK was the RPI, the RPIX excluding mortgages and the RPIY excluding mortgages and taxation. This was calculated using a weighted basket of goods aimed at representing the average consumer. No consumer however is represented by the 'average' consumer as some goods are mutually exclusive such as all three fossil fuels.

The measure that the government has now adopted is the HICP (harmonised index of consumer prices, or CPI the consumer price index) which makes some modifications on the RPI. These include excluding housing depreciation, council tax and dental charges whilst including university fees and new car prices. The weightings are different, pensioners included and the top 4% of spenders excluded. The geometric (not arithmetic) mean is used to calculate the mean and this generally gives a lower result for inflation than the RPI, which it is believed to be more accurate in keeping with the way other countries measure their inflation.

Balance of payments

The balance of payments is a record of transactions between those in one economy and those in other economies over a given time period, usually one year. There are five sections to the balance of payments, only the current count needs to be understood in detail:

Current account

Made up of the trade in goods and services, inflows and outflows of investment incomes and current transfers. When goods are exported this leads to an inflow, and when goods are imported this leads to an outflow. Investment incomes are the rewards for investment in foreign economies (rent, interest and profit).

Current transfers are usually negative on the UK balance of payments as they often represent aid given to developing countries (a net outflow for the UK).

Capital account

The trade in capital goods, a very minor part of the balance of payments.

Financial account

A record of investment made by UK economies abroad and by abroad economies in the UK.

Net errors and omissions

Statistical errors made in the gathering of data are noted here.

International investment position

A section outlining the ownership of assets owned by the UK abroad and by abroad economies in the UK.

GDP (and the three measures)

GDP is an acronym for Gross Domestic Product, the total value of goods and services produced in an economy over a given time period, usually one year. Since money spent on goods and services is equal to the value of those goods and services, GDP can be measured using total spending (total expenditure) in the economy.

The expenditure method

There are four key groups of people who may spend money in an economy. Firstly the consumers within the economy (Consumption) and businesses based in that economy (Investment). The government will also spend money (Government expenditure), as will consumers and businesses from other economies (Net exports).

Thus, GDP can be calculated as the sum of these components, where net exports are denoted as $(X - M)$, the value of goods and services exported less the value of those imported.

$$\text{GDP} = C + I + G + (X - M)$$

The income method

This calculates GDP at factor cost. It is calculated by summing the rewards from factors of production; rent, wages, profits and interest. Transfer payments are excluded as they are not a reward for the production of a good or service. GDP measured by the expenditure method less tax and adding on subsidies gives the same value as GDP measured by the incomes method (less transfer payments).

The output method

A figure obtained by summing the value added (to avoid double counting) by firms in the UK to goods and services.

GNP

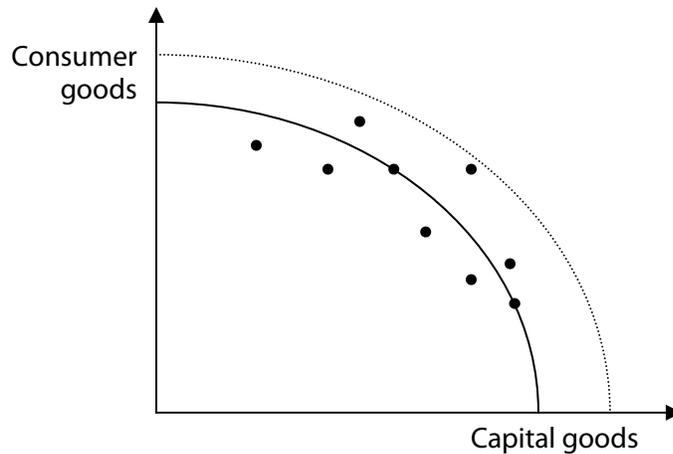
Gross National Product is a more accurate figure for the income generated for the domestic economy. Rewards for factors of production flow both in and out of the UK economy, GNP takes this into account, whereas GDP does not.

Economic growth

In the short run economic growth can be defined as a measure of the change in GDP. Most often this is a positive increase, similar to trend growth. Short run economic growth is a growth in output. This can be represented on a PPC as a movement along or around the PPC, a movement from any of the points on the PPC to any other point.

Growth in output fluctuates around the trend growth for the economy. When this figure is negative for two or more quarters the economy is said to be in a recession, and when the economy is producing at higher than its productive capacity

Long run economic growth is the growth in potential output, the rate the economy could grow by in the long run. On a PPC this is shown as a shift outwards from the solid line to the dotted line.



Conflicts in macroeconomic policies

Problem	Fiscal policy	Monetary policy	Exchange rate policy	Supply-side policy
Inflation	↑ tax rates → ↓ disposable income → ↓ C, ↓ I (AD↓) ↓ government discretionary spending → ↓ G (AD↓)	↑ Interest rates → ↓ C (↓ disc. Income) → ↓ I (↑ opp. cost) ↓ Money supply → credit less available. → C ↓.	↑ Appreciate → Raise interest rates. → Spend foreign currency reserves for GBP. → Lower imported inflation.	↑ AS in LR → Increase private or public investment. → Increases competition, incentives and competitiveness. (short run problem of inflation)
Unemployment	↓ tax rates → ↑ disposable income. → ↓ C, ↓ I (AD↓) → U↓. → ↓ disincentives to work. ↑ government discretionary spending → ↑ G (AD↑) → U↓.	↓ Interest rates → ↑ C (↑ disc. Income) → ↑ I (↓ opp. cost) ↑ Money supply → credit more available → C ↑	↓ Depreciate → Lower interest rates. → Sell GBP for foreign currency. → Increased demand for UK exports → U ↓. → Imports more expensive so UK firms setup in the domestic economy → U ↓.	↑ AS in LR → As above focusing on training of workforce to increase occupational mobility and affordable housing to increase geographical mobility.
Balance of payments deficit	↑ tax rates → ↓ disposable income → ↓ C of luxury imports ↓ government discretionary spending → ↓ G → AD↓ → U ↑. → total NY ↓. → ↓ C of luxury imports.	↑ Interest rates → ↓ C (↓ disc. Income) → ↓ I (↑ opp. cost – could cause long run problems) ↓ Money supply → credit less available. → C ↓.	↓ Depreciate → Exports cheaper so X ↑, but I ↓ as opp. cost is higher so there is a conflict.	↑ AS in LR → Increase competitiveness abroad by investment and by private firms and government.
Lack of growth	↓ tax rates → ↑ disposable income. → ↓ C, ↓ I (AD↓) → U↓ → ↓ disincentives to	↓ Interest rates → ↑ C (↑ disc. Income). → ↑ I (↓ opp. cost). ↑ Money supply → credit more	↓ Depreciate → Overall increase in economic activity causes an increase in growth.	↑ AS in LR → Increase AS so AS expands by LR potential. Use in combination with

	work ↑ government discretionary spending → ↑ G (AD↑) → U↓. → GDP ↑.	available. → C ↑.		demand management policies to allow the UK to achieve its LR potential.
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...and a variety of situations to consider (note the conflicts above in policies):

Problem	Fiscal policy	Monetary policy	Exchange rate policy	Supply-side policy
3% Growth 2% Inflation 4% Unemployment	-	-	-	To decrease the natural rate of unemployment increase training and cheaper housing to reduce occupational and geographical immobility. (See p. 40 of the study guide)
10% Unemployment BoP Deficit	Expansionary.	Expansionary.	Depreciate → X more competitive so X ↑. → M more expensive so M ↓.	↑ AS in LR → Increase occupational and geographical mobility → U ↓. → Make UK businesses more competitive. → Increase labour participation.
4% Inflation 1% Growth	<i>In the short run only growth or inflation can be targeted, a priority choice needs to be made. Supply side policies will help in the long run but will not cure short run problems.</i>			↑ AS in LR (See p. 40 of the study guide)
BoP Surplus 8% Unemployment	Change tariffs.			Aim for freer trade.

AD/AS modelling

Aggregate demand

Aggregate demand is the total amount of demands (or expenditures) in the economy at any given price level. It is calculated by the formula:

$$AD = C + I + G + X - M$$

Where:

C: Consumer expenditure; spending on durable goods, non-durable goods and services.

I: Investment or spending by firms on capital goods.

G: Government spending on current goods and services.

X: Exports, spending by overseas buyers of UK goods and services.

M: Imports, spending by UK buyers of overseas goods and services.

Consumption

Consumption within the UK economy has increased at a reasonably steady rate from ~£170bn per annum in 1955 to ~£500bn per annum in 1998 at constant (1995) prices. Spending on essential items such as food and energy has remained relatively constant whilst spending on durable goods has increased dramatically. Real income has increased approximately 4-fold

and consumption has increased to match this meaning that generally the extra money individual's gain in disposable income is spent on durable goods and not invested.

$$\text{MPC, Marginal Propensity to Consume} = \frac{\text{Change in consumption}}{\text{Change in income}}$$

$$\text{MPC, Marginal Propensity to Save} = \frac{\text{Change in savings}}{\text{Change in income}}$$

$$\text{APC, Average Propensity to Consume} = \frac{\text{Consumption}}{\text{Income}}$$

$$\text{APC, Average Propensity to Save} = \frac{\text{Savings}}{\text{Income}}$$

APS + MPS = 1, APC is inversely proportional to APS; MPC is inversely proportional to MPS.

An individual can have an APC or an MPC greater than one as they can either borrow money (a loan, for example) or spend money that they have previous saved, so meaning that they are spending more money than they are earning.

The six factors that affect consumption and saving in the economy are:

- Wealth – the value of stocks in a household's portfolio may increase so making them feel richer and more able to spend on consumption. Rising house prices allow consumers to borrow more against the (now higher) value of their home and so they can spend the borrowed money.
- Inflation – In the short run a high rate of inflation may cause people to purchase now instead of in the future when they know the same good will cost more.
- The rate of interest – To buy expensive items households borrow money and what is more important to the consumer than the price of the item such as a car or kitchen is the cost of the repayments. High interest rates cause these rates to rise and so consumption to fall.
- The availability of credit – Credit is now widely available yet before the early 1980s the market was highly restricted by the government. Now the main factor affecting the availability of credit is the rate of interest.
- Expectations – Expected increases in the price of goods and services will cause the consumer to spend now. Expected increases in their income will allow the consumer to feel more secure in borrowing larger sums of money.
- The composition of households – Generally older and younger people spend a greater

	APC	MPC
1958	1.02	1.50
1968	0.98	1.49
1978	0.95	0.71
1988	1.01	1.43
1998	0.96	132.0

proportion of their income than those in middle age. For the young this is due to the costs involved in setting up a home. For the old they may run down savings as their pension gives them a much more limited income.

APC tells us the proportion of income being spent on consumption, MPC tells us how much of an increase in income is being spent, i.e.

for every £1 increase how much of that £1 is being spent on consumption.

1958 – Households are spending more than their income. In this period households are dissaving, that is spending their savings. In the 1950s most households were able to own their own property for the first time and labour saving devices were widely available for the first time. Many houses also had television sets. There were prosperous expectations and an average growth for the decade of 3%.

1968 – 2% of income is saved. For every extra £1 earned £1.49 is spent as the consumer feels prosperous.

1978 – 5% of income is saved. For every extra £1 earned only 70p is spent on consumption. Uncertainty for many households about job security after two oil crisis’.

1988 – Households spending slightly more than their income. Higher expectations for the future. For every £1 spent £1.43 is spent. Financed by dissaving and now increasingly borrowing which is a relatively new idea for purchases of consumer durables.

1992 – During a recession so probably similar to the 1978 figure.

1998 – The UK has a high APC and so a low APS. Low savings mean low investment. However there have been very low interest rates so it is easier to borrow and finance large loans in the current economic climate. Bright expectations within the economy as unemployment reaches the natural rate within the economy after a steady decline for many years. The MPC is extortionately large primarily due to house prices, for every £1 increase in income the consumer spends an extra £132 on consumption!

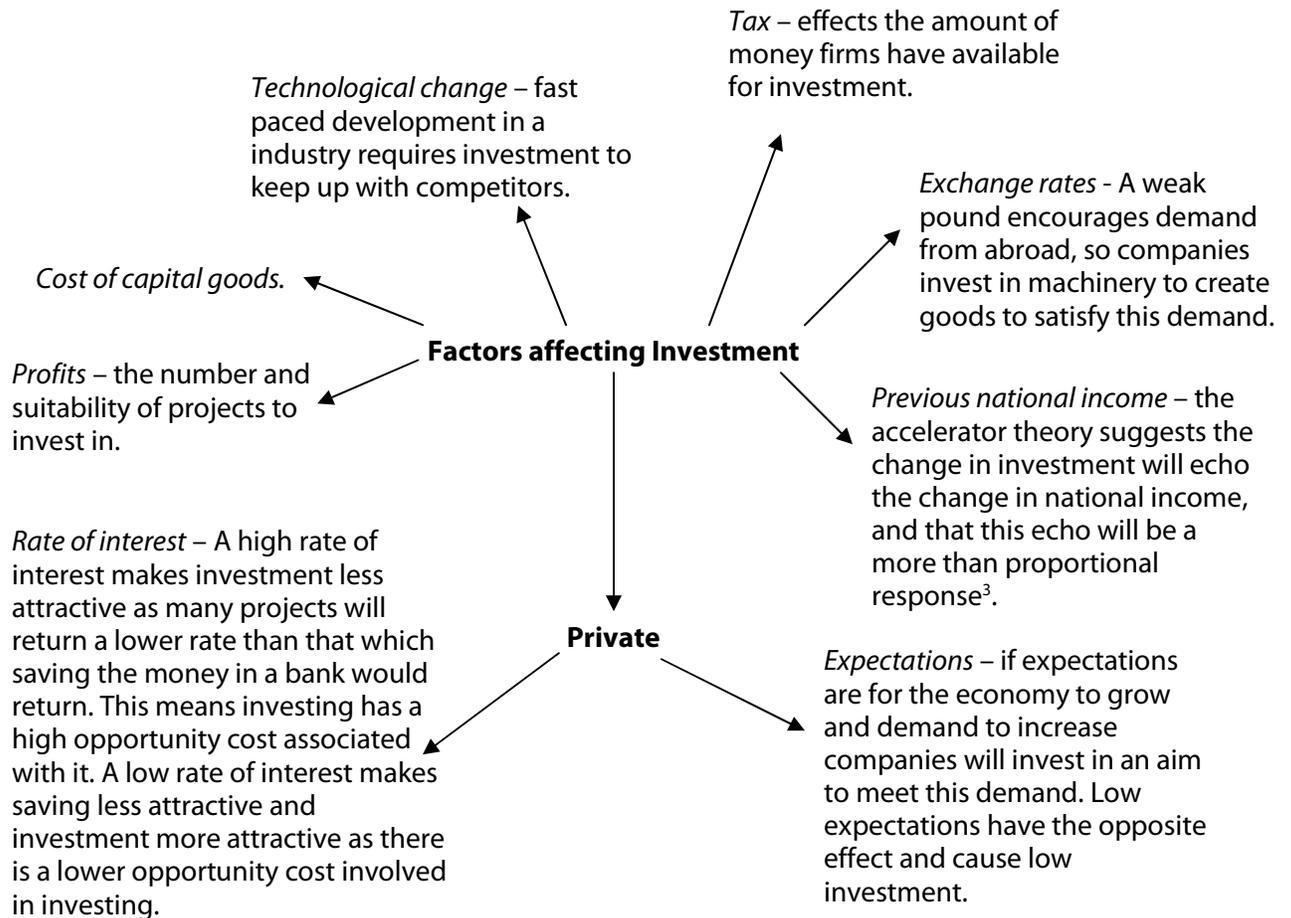
Changes in consumption over recent years in the UK economy

	Disposable income	Wealth		Inflation	Rate of interest	Availability of credit	Expectations¹	Consumption of households
Early 80s	Increased steadily over the period from ~£320bn in 1980 to ~£520bn in 1998.					Fewer restrictions on borrowing money and paying on credit has lead to a massive boom in borrowing. Availability has increased vastly over recent years.	High U caused low expectations so C low.	An aging population has caused an increase in C as older people generally spend more than their incomes as they use up savings. This has increased throughout the period.
Late 80s		High house prices cause C to increase. Strong stock market increases wealth so C increase.		High inflation (double figures). As value of money falls households tend to save APC decreases and APS increases.	15% inflation pushed the roi up. C of durables generally on credit.		All time high consumer confidence caused a vast increase in C.	
Early 90s		Negative equity causes a decrease in C. After black Monday in 1987 there is a weak stock market, causes C to decrease.			Less discretionary income as mortgage payments rise, and lower borrowing so C decreases.		Consumer confidence very low so C decreased.	
Late 90s		Increasing house prices, families feel wealthier so C increases.	Strong stock market performance, C increases.				Growing consumer confidence causes an increase in C.	
Early 00s			Weaker stock market performance, C decreases.	Very low and stable causes APC to increase.	Low and stable causes APC to increase. ²		Confident consumers and low U caused C to rise.	

¹ Is measured using the GfK confidence index, calculated from surveys of the public.

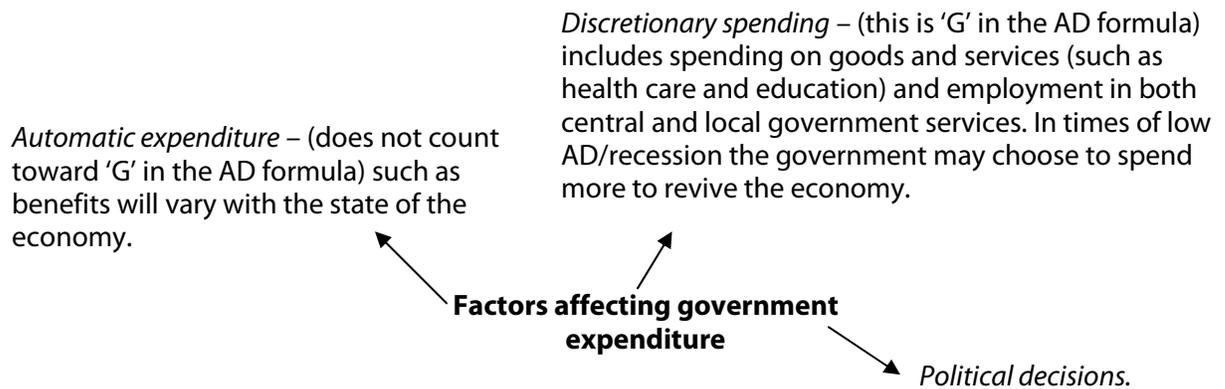
² Average UK citizen now owes ~£4,500.

Investment

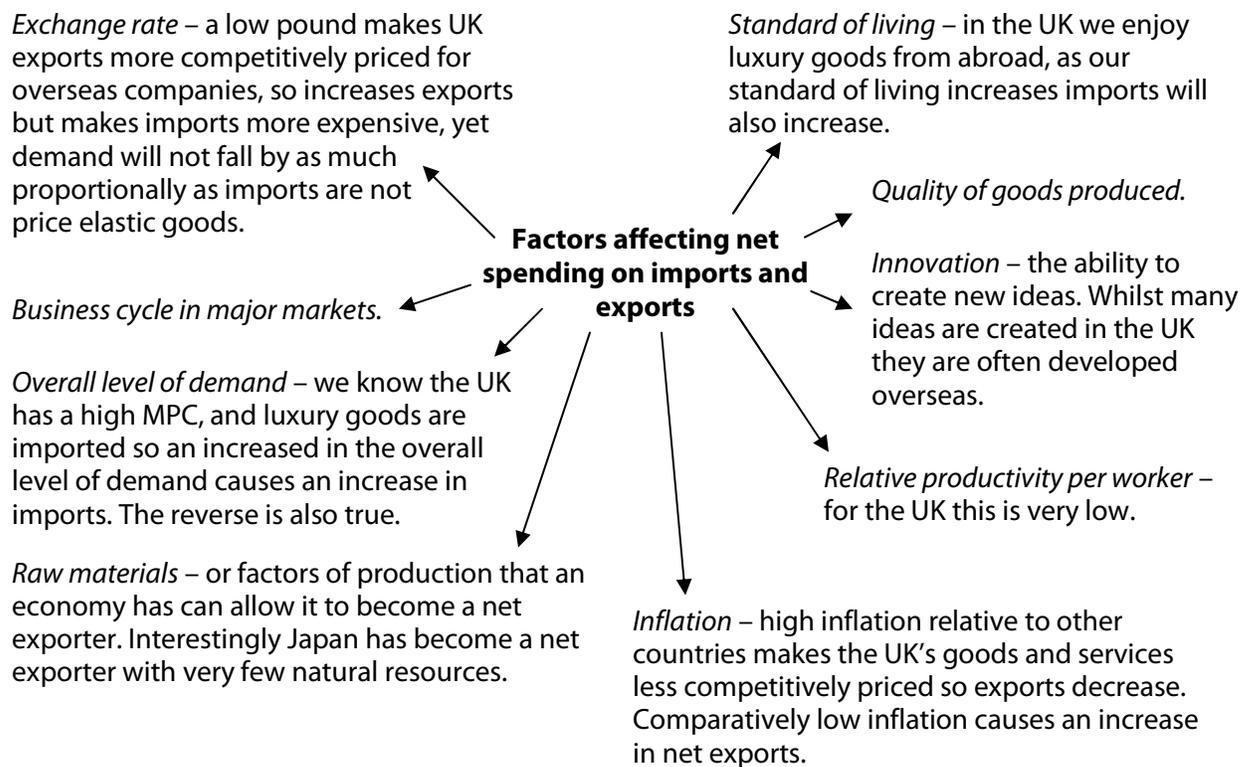


³ See Alain Anderton, "Economics – AS Level" pp.207-208

Government spending



Imports and Exports



High price level (high inflation)

C – decreases as inflation pushes interest rates up and makes saving more attractive⁴.

I – decreases as saving is more attractive for businesses too. Only project offering a higher rate of return than the interest rate will be considered as the opportunity cost of investment has increased.

G – little change although *may* decrease slightly as the repayments on any planned borrowing will be much higher.

$X - M$ – decreases as exports become less competitive overseas and foreign goods become more competitive in UK markets.

High prices therefore cause AD to *decrease*.

Low price level (low inflation)

C – increases as saving is less attractive and repayments on borrowed money are lower.

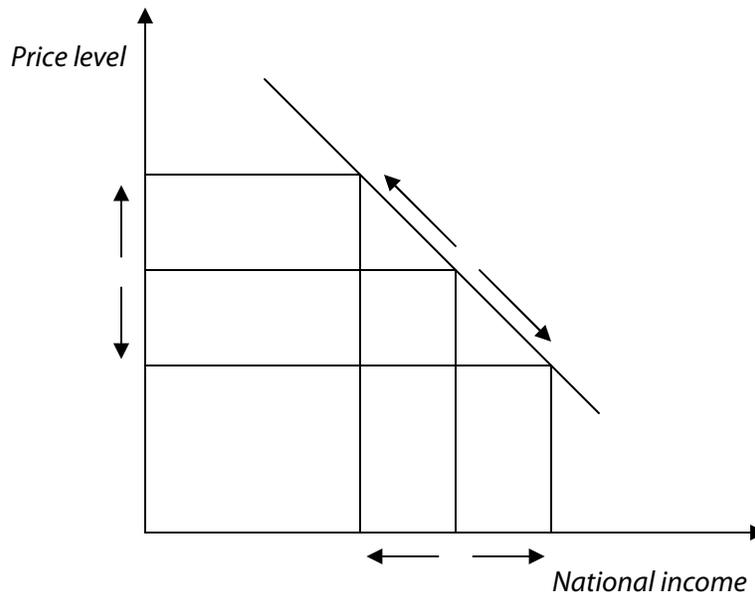
I – increases as saving is made less attractive and the repayments on borrowed money are cheaper for businesses too. The opportunity cost of investment has decreased so it seems more attractive.

G – little change although *may* increase slightly as the government chooses to borrow more.

$X - M$ – increases as exports become more competitive overseas and foreign goods become less competitive in UK markets.

High prices therefore cause AD to *increase*.

This therefore gives the demand curve a downward sloping shape:



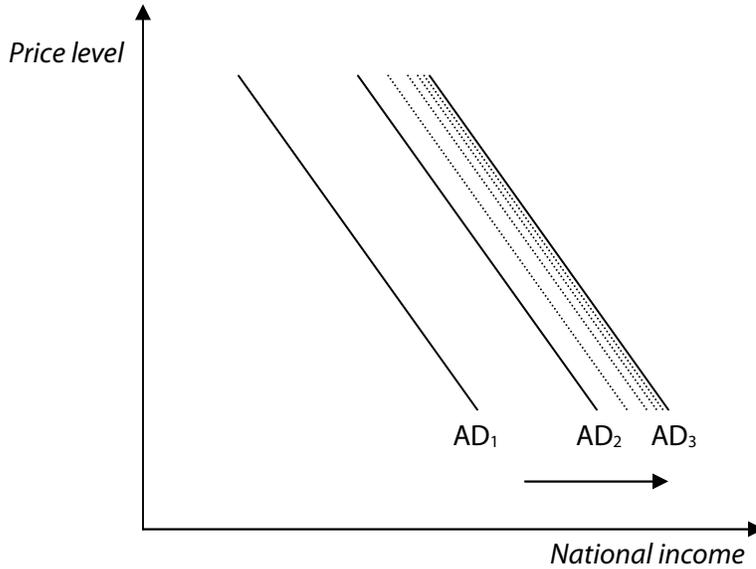
⁴ Consumers also desire to keep the *real* value of their savings the same. To this they must save more.

The multiplier effect

The UK has a very high MPC so money given to factors of production as a reward for participating in the production of goods and services is very likely to be consumed. The average UK MPC is approximately 0.9, so in this 'second round' of consumption about 90% of the income received will be consumed. In consecutive spending rounds the amount of money spent will decrease as the MPC is less than 1. The overall increase in consumption (and so GDP) from an initial investment of £1,000m into the UK economy would be ~£10,000m.

Studies of the UK economy have shown this figure to be nearer to 1.3 times the initial investment due to much of the money spent by household's flows out of the UK economy by buying imports, paying taxes or saving money. Therefore an investment of £1000m is likely to cause an increase in GDP of approximately £1300m.

Initial investment	£1000m
First round	£900m
Second round	£810m
Third round	£729m
Fourth round	£656m
Fifth round	£590m
Sixth round	£531m
Seventh round	£478m
.....
Total	£10000m



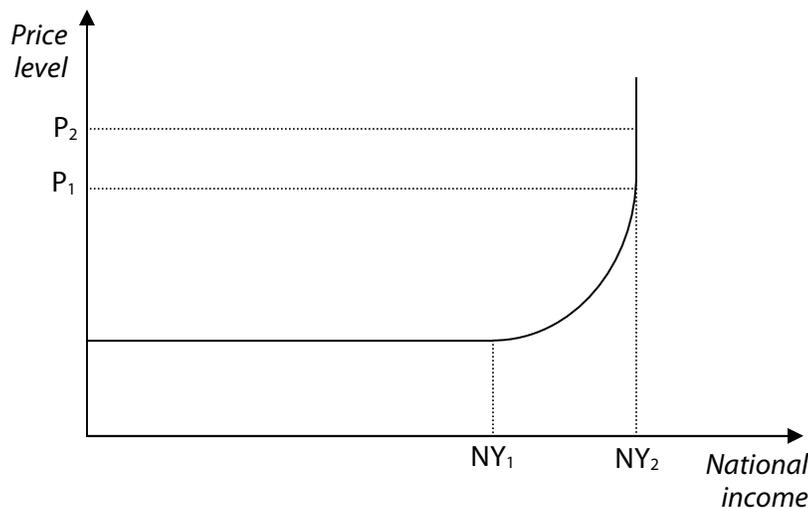
The shift from AD₁ to AD₂ demonstrates the initial investment into the economy, causing an increase in I, and rounds of spending cause C to increase causing an eventual shift to AD₃.

$$\text{Multiplier} = \frac{1}{1 - \text{MPC}}$$

Aggregate supply

Aggregate supply is the total supply of goods and services in the economy. It is measured in pounds and is the equivalent of real national income, or output.

In the short run aggregate supply is upward sloping as firms feel they can increase output and so profit at a higher price. In reality this just causes inflation.

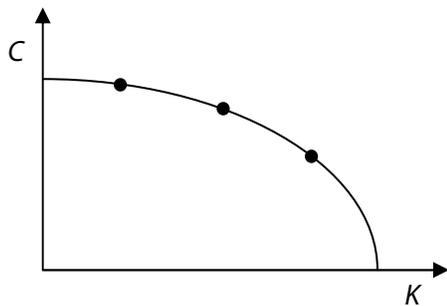


At a low output (up to NY₁) the supply curve is perfectly elastic. This is because the economy is producing far inside its PPC. At this level there is an excess supply of labour (due to high

unemployment of resources at an equilibrium up to NY_1) so all firms can increase supply without raising the price as there is little extra cost involved in them doing so.

Between NY_1 and NY_2 businesses must pay increasingly more for resources as they become increasingly harder to obtain as the economy gets nearer to full capacity. Firms have to pay higher prices to obtain resources as they become more scarce and this increase in cost is passed on to the consumer, causing inflation both cost push and demand pull inflation. As the economy's output increases nearer to full capacity the negative output gap improves.

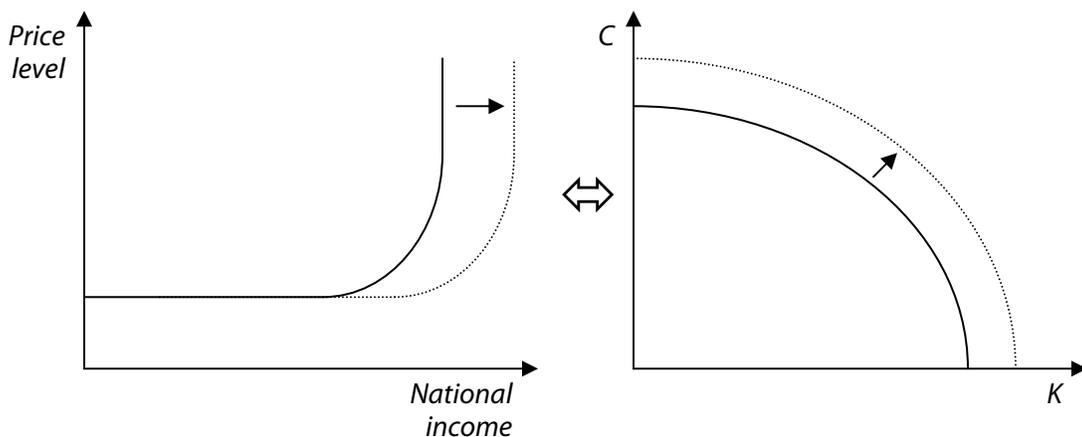
When the economy reaches NY_2 there is only a natural rate of unemployment within the economy. The economy is working at its full capacity so any shift of the market equilibrium outward will cause only demand pull inflation. At price level P_1 the economy is producing on its PPC, at price levels above P_1 , such as P_2 , the economy is overheating.



At NY_2 the economy is operating at full capacity, on its PPC (equal to any of the points on the left hand PPC).

An increase of real output in an economy can be seen on a PPC as a shift outwards. This can also be shown as a shift outwards of the aggregate supply curve. Whereas a shift in aggregate demand is caused by a change in C , I , G or net exports a shift in supply is caused by a change in either the quality or quantity of resources available in an economy.

	<i>Quality</i>	<i>Quantity</i>
Land	Fertilisers or conservation.	Discovery of new natural resources or reclamation.
Labour	Training and education.	Immigrant labour, increasing the pension age, lowering the compulsory schooling age or part time and the unemployed working.
Capital	Research and development.	Investment.
Enterprise	Initiatives.	Training.



The macroeconomic objectives of the government are:

- Low and stable inflation.
- Low unemployment.
- Sustainable economic growth,
- Equilibrium in the balance of payments.

However, to achieve all of these objectives is impossible so the government must make tradeoffs between objectives. Targeting unemployment is likely to cause a rise in inflation as the aggregate supply curve shows; increasingly scarce resources cause firms costs to increase and so inflation.

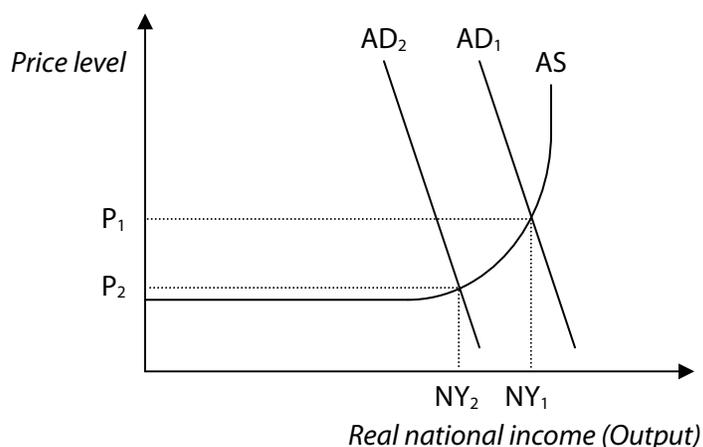
Economic growth will bring about a rise in national income, and as most of the UK's luxury goods are imported this is likely to cause a worsening deficit on the balance of payments. There is also a trade off between the balance of payments equilibrium and inflation as a depreciating exchange rate makes exports most competitive in foreign markets so the balance of payments will work toward an equilibrium level. However a depreciating exchange rate will also cause imports to become more expensive and so inflation in the UK economy.

To manage these changes in supply the government has four key tools (explained from p.45 onwards).

- Fiscal policy – the use of government expenditure and taxation to influence the level of economic activity.
- Monetary policy.
- Supply-side policy.
- Exchange rate policy.

AD/AS Diagrams

Analysing situations using aggregate supply and demand diagrams to explain changes in output and inflationary pressures is important. For example, a substantial increase in the world price of oil may bring about the following effect.



Oil has very price inelastic demand in the UK economy so an increase in the price of oil will lead only to a small fall in quantity demanded per unit of time so the value of imports will increase, causing a decrease in AD from AD_1 to AD_2 . This causes a decrease in national income from NY_1 to NY_2 and a decrease in price level from P_1 to P_2 .

The instruments of macroeconomic policy

Fiscal policy

Fiscal policy is the manipulation of government spending and taxation to achieve macroeconomic objectives.

Monetary policy

Monetary policy is the attempt by the government or central bank to manipulate the money supply, supply of credit, interest rates or any other monetary variables to achieve the fulfilment of policy goals such as price stability.

The government has four key macroeconomic policy objectives; to have low and stable inflation, low unemployment, high and stable economic growth and to maintain a current account equilibrium.

To achieve these objectives in the UK economy the Bank of England manipulates interest rates and the money supply.

The impact of low interest rates on the economy

Aggregate demand, in the short run:

Consumption increases as credit is more available, discretionary income increases and saving is less attractive to consumers. Investment will also increase as the opportunity cost of investment is lower. Government spending is likely not to change as much spending is planned in advance however low interest rates make payments on the national debt lower so will give the government a budget surplus.

If the rate of interest in the UK is lower than in other economies hot money will flow out of the UK which will cause depreciation in the value of the pound. This will make exports more expensive and exports cheaper abroad. This will cause net exports to increase, although imports are likely to decrease by a proportionally small value as imports to the UK are price inelastic.

Aggregate supply, in the long run:

As investment becomes more attractive in the short run for businesses in the long run the economy should benefit from this by increasing the productive capacity of the economy.

Link between economic growth and interest rates

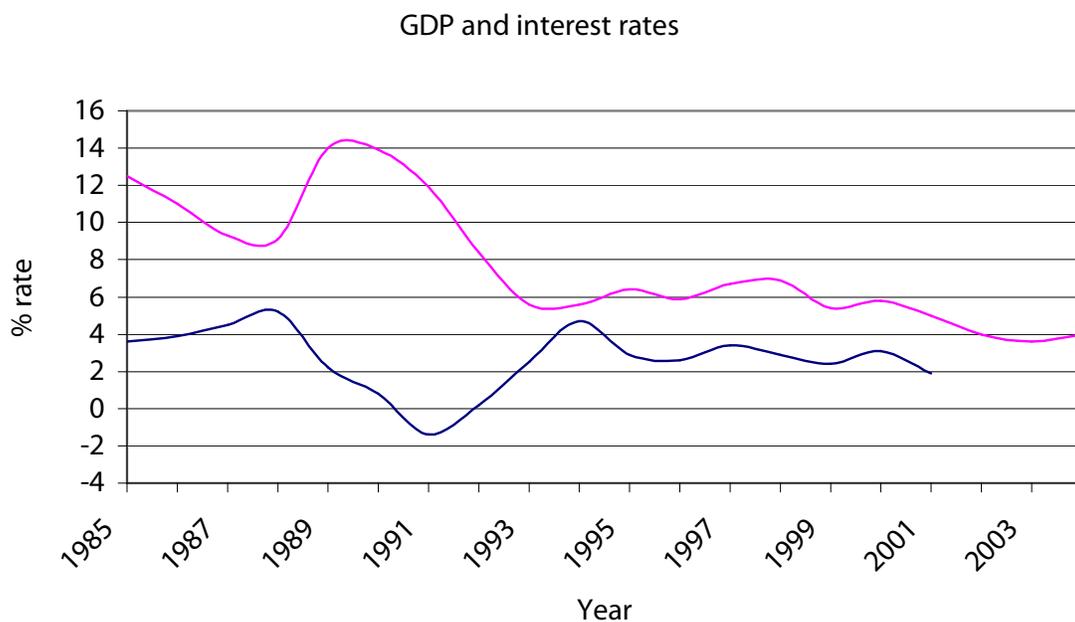
Since 1997 the goal of monetary policy has been solely price stability. The target of 2.5% inflation \pm 1% is the goal the government sets the Bank of England.

Year	GDP Growth	Base rate of interest
1985	3.6	12.5
1986	3.9	11.0
1987	4.5	9.3
1988	5.2	9.1
1989	2.2	14.0
1990	0.8	13.9
1991	-1.4	11.9
1992	0.2	8.4
1993	2.5	5.6
1994	4.7	5.6
1995	2.9	6.4
1996	2.6	5.9
1997	3.4	6.7
1998	2.9	6.9
1999	2.4	5.4
2000	3.1	5.8
2001	1.9	5.0
2002		4.0
2003		3.6
2004		4.0

During the UK's time in the ERM the goal was to maintain the exchange rate within the restrictions of the ERM. Before the ERM the main goal was to maintain the availability of credit. To do this the government can limit the proportion of their funds banks can lend out.

Has the economy been more stable since the Bank of England took over monetary policy in 1997?

The goal the Bank of England has been set by the government is price stability – to control inflation has been achieved. Whereas when the government was in control of interest rates typically an expansionary fiscal policy would be used before an election to improve political popularity during the governments term a deflationary policy would need to be implemented to curb the inflation resulting from the earlier policy this is no longer true. It has been suggested that the government control caused instability in the business cycle however now interest rates are controlled by an independent body this should not be the case.



Lower darker line represents year on year increase in GDP per annum, upper lighter line represents base rate of interest.

Exchange rates

The exchange rate is the value of the pound in relation to that of other currencies. It is determined by supply and demand. The demand for pounds comes from:

- Foreign investors (“hot money”) moving into the UK.
- Purchase of exports (including visitors on holiday in the UK).
- Speculators who believe the pound will rise in value.
- Government selling foreign currency reserves to buy pounds.
- UK investors moving funds into the domestic economy from abroad.

... and the supply for pounds comes from:

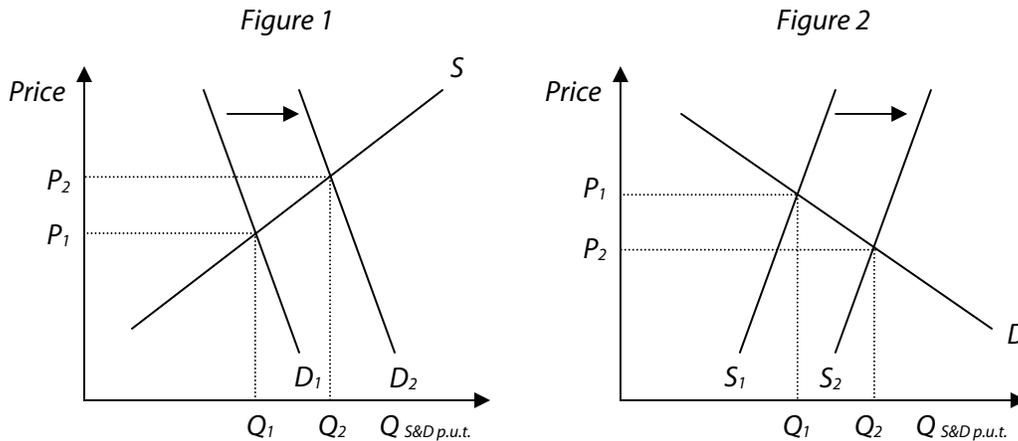
- UK citizens/firms importing goods (including buying overseas holidays).

- Speculators who expect the value of the pound to decrease.
- Government selling pounds to buy foreign currency for reserves.
- Foreign investors withdrawing funds from the UK.
- UK investors moving funds abroad.

What tools can be used to control the exchange rate and how do they work?

Interest rate

If this is higher than other economies then individuals with hot money may move their money into the UK. This will cause an increase in demand for pounds (*Figure 1*). This will cause a shift from D_1 to D_2 , an increase in quantity demanded per unit of time from Q_1 to Q_2 which results in an increase in price from P_1 to P_2 . This is referred to as appreciation of the pound. If the interest rate is lower than in other economies the opposite will happen (*Figure 2*). Funds will flow out of the UK economy and cause an increase in supply from S_1 to S_2 , an increase in quantity demanded per unit of time from Q_1 to Q_2 which results in a decrease in price from P_1 to P_2 . This drop in the price of the pound is called depreciation.

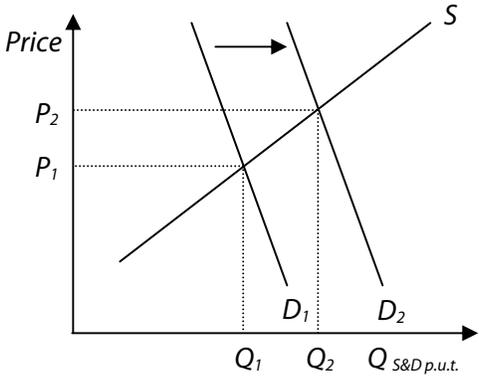
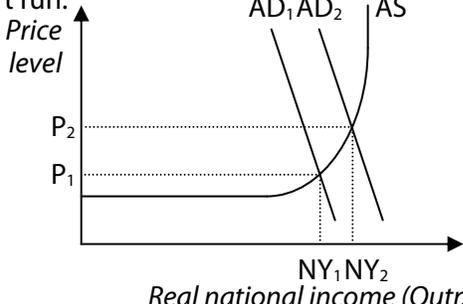


Government spending

The only control the government now has on exchange rates is through exchanging its foreign currency reserves for pounds, or selling pounds for its reserves. This has a very small effect and is not sustainable (such as during the ERM period) and due to the vast amount of currency traded daily any effect caused by the government trading its reserves would be minimal.

Using the exchange rate to achieve macroeconomic objectives

Macroeconomic objective	Change to exchange rate	How would it work? Any problems?
Low and stable inflation <i>Aim to eliminate imported inflation if lots of raw materials, goods and services are imported from abroad</i>	Appreciate.	By increasing the base rate of interest relative to other economies and the government selling its foreign currency reserves to buy pounds the demand for pounds will increase. This will cause appreciation which will make imports less expensive and as the UK is very

		<p>reliant on imports this will ease the pressure of inflation.</p>  <p>The effect depends on the exchange rate and proportion of consumer goods that are imported.</p>
<p>Low unemployment and sustainable growth</p>	<p>Depreciate.</p>	<p>By decreasing the rate of interest or the government increasing its foreign currency reserves UK exports become cheaper for overseas citizens, which causes an increase in demand for UK exports which will utilise more resources in the UK economy which should cause a shift in aggregate demand a lower unemployment in the short run.</p>  <p>Price level</p> <p>Real national income (Output)</p>
		<p>This will cause the problems associated with inflation as the economy nears its productive capacity which causes inflation as shown above and the increase in the price of exports causes imported inflation as UK consumers now with an increased national income buy more luxury imported goods. In the long run new firms should enter the market in the UK to provide the goods and services which are expensive imported luxuries. This should cause long run sustainable growth.</p>
<p>Balance of payments equilibrium UK – reduce the deficit Japan – reduce the surplus</p>	<p>Depreciate for the UK, appreciate for Japan.</p>	<p>For the UK imports would become more expensive and exports more competitive. This will lead to problems of inflation in the short run as demand for imports is very inelastic but should encourage new UK based firms to enter the market to supply to the domestic economy.</p> <p>For Japan imports become cheaper and more competitive than home produced goods and services so imports increase and exports become less competitive so exports decrease.</p>

		For both economies there will be a time lag whilst firms enter the market for the UK and leave the market or adapt in Japan. In the UK there will also be the short run problem of higher inflation.
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The two tools that the government can theoretically use to bring about changes in the exchange rate are interest rates and government spending. However, in the UK the government does not control the rate of interest. This is the job of the Bank of England (whose main goal is price stability), and the government adjusting its foreign currency reserves is politically unpopular. The UK is officially a free floating currency, meaning the exchange rate is governed entirely by supply and demand. Use of government foreign currency reserves to distort the exchange rate the market sets would be regarded as 'dirty floating.'

There are three ways a currency can be exchanged on currency markets. Either free floating, like the UK pound where the rate is determined entirely by supply and demand, managed floating where a target is aimed for, such as the UK economy during the ERM in preparation for the EMU. For those economies that entered the Euro the exchange rates were irrevocably fixed, referred to as a fixed exchange rate.

Supply side policy

Supply side policies are government policies designed to increase the productive capacity of the economy, so shifting the LRAS curve outwards. These can be broadly categorised into:

Encouraging competition: Through privatisation of state owned assets and deregulation of industries. This happened lots during the time Thatcher was Prime Minister and most industries that have been privatised have also been deregulated. The NHS has not been privatised, although the industry regulations allow other providers of health care. Water services is probably the only example of an industry that has been privatised but not deregulated.

Providing incentives: Removing or decreasing disincentives to work such as unemployment benefits. It is debateable as to how effective decreasing benefits is at increasing participation in the work force.

Increasing competitiveness: Investment in education, research and development making the UK competitive with overseas economies.

Effects in the short run

The effects here are minimal. The government may increase its government discretionary capital expenditure as more is spent on investing. Firms may also be encouraged to increase their investment by being offered subsidies or tax relief for doing so. Therefore in the short run there may be a small increase in aggregate demand which may, if the economy is near full employment cause inflation.

Long run effects

Supply side policies aim to increase aggregate supply by increasing either the quantity or quality of the resources in the economy. Primarily this takes the form of increasing capital through investment, encouraging entrepreneurship and improving the quality of labour.

Labour: Aim primarily to increase occupational mobility through improving skills of the workforce.

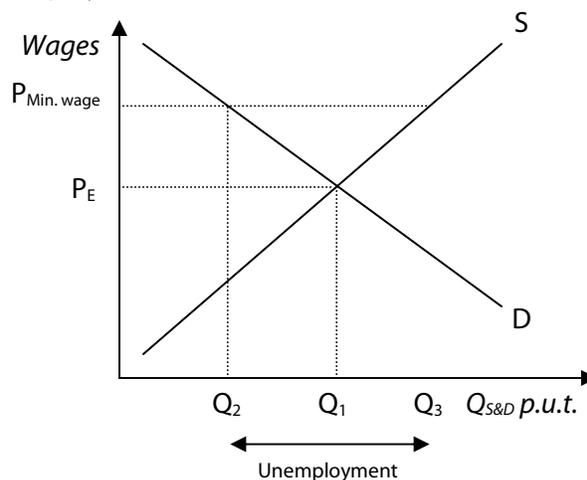
- Remove trade unions.
- Reduce welfare benefits.
- Reduce minimum wage.
- Decrease tax rates on income.
- Reduce taxes on labour.
- Reduce costs of changing jobs.
- Increase training and education.

Capital:

- Decrease taxes to increase profits, so encourage more entrepreneurship and investment.
- Encourage lending to private firms for investment.
- Remove tariffs to increase efficiency.
- Encourage small firms to enter the market to encourage competition and keep prices low.
- Privatisise state owned assets and deregulate industries letting the free market allocate scarce resources.

In the recent budget the government has chosen to implement the following supply side policies:

- Increased child care subsidies, this will hopefully lead to increased participation in the work force.
- Raised the minimum wage, arguably this may act as an incentive to enter the workforce which will lead to increased participation. However, some of those who are unemployed may be willing to work for less than the minimum wage and so the minimum wage creates an excess supply of labour of $Q_3 - Q_2$, which is unemployment.



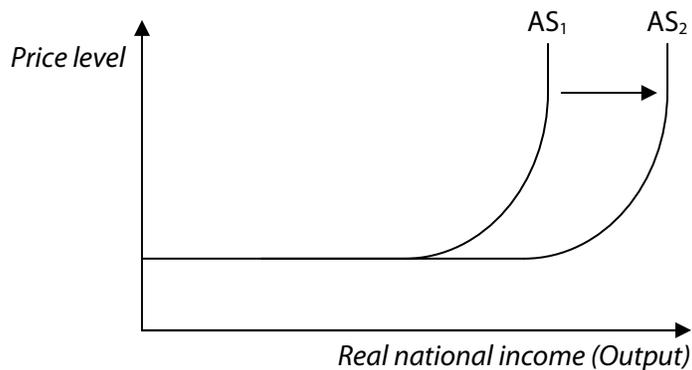
- More spending on research, through a 10 year framework to boost research and development within the UK. Increased investment improves the quantity and quality of resources. Increased research and development into high value output will help resolve the balance of payments situation as when eastern European countries join the EU the UK will have further cheap competition from abroad.

- Increase housing, in the short run this will increase the demand for builders and so increase aggregate demand a small amount but in the long run this policy is aimed at increasing the geographical mobility of labour within the economy.
- Changes in taxes and duties may change business practises.
- Improving the UK's infrastructure should make the UK more competitive as fewer hours will be wasted travelling and delivery will become cheaper.
- Reforms to regulations on businesses will reduce costs to businesses and free up scarce resources used in regulation for another application.
- More British films being made through subsidies. This may help exports.
- Reforms to local growth authorities giving them more power to achieve their own goals.

How effective is government funding at increasing growth?

Government funding has a large effect if...

- More jobs are created in the local area.
- Local multiplier effect causes this to increase and so cause a shift outwards in aggregate supply from AS_1 to AS_2 .



- Lower businesses costs as...
 - More use of labour.
 - More investment.
 - More training.

Government funding has less of an effect if...

- Profits are repatriated abroad rather than reinvested locally if the investment is FDI (foreign direct investment).
- Requires more than money. Local councils need to agree with the expansion. If local planning permission for example is not granted the move may be unpopular.
- May be limited government funding split between many regions. A fraction of the money allocated may reduce incentives to companies.
- For those who want to trade with Europe a base anywhere other than the south east is not an option they would consider. Europe accounts for ~50% of the UK's trade so companies want to situate themselves near the channel tunnel.

Free trade and protectionism

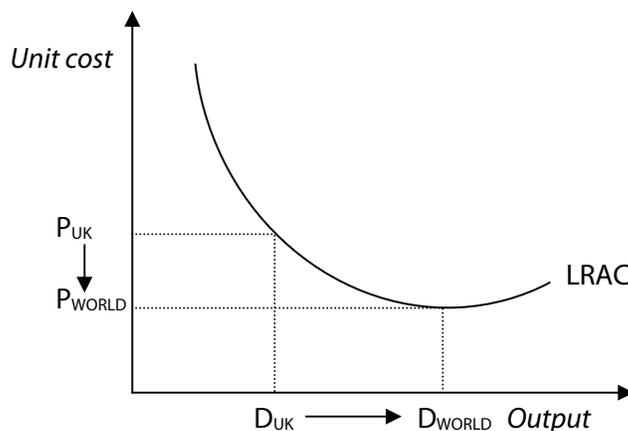
Types of trade

Inter-industry trade: Where different economies specialise in producing different goods and services then trade, e.g. France makes bread and the UK meat.

Intra-industry trade: Where one economy is both an exporter and an importer of the same good or service. For example, the UK exports cars and unrefined oil but imports different models of cars and refined oil.

Why does trade take place?

- Different countries have different availability of resources (factor endowments), for example India has excess labour whereas the UK has a shortage. Economies with large resources can specialise, for example agriculture for an economy with lots of land.
- Access to different levels of technology allows easier production of some goods and services.
- Differentiated products are offered by different economies so goods are imported to increase consumer choice for different types of apples and cars.
- To exploit economies of scale to create lower unit costs. Very large companies may choose a variety of smaller factories around the world instead of one large factory so as not to exceed their MES (minimum efficient scale – output at which the unit cost is lowest).



Trading allows UK companies to increase demand from D_{UK} to D_{WORLD} and so decrease their unit cost from P_{UK} to P_{WORLD} .

Gains from trade

(See Anderton p. 263 and study guide p. 67)

Free trade is the international exchange of goods and services without barriers such as quotas and tariffs.

- *Specialisation:* Economies specialise in producing what they are best at.
- *Economies of scale:* As above, allow an extension in the LRAC curve which causes a fall in unit costs.
- *Choice:* Consumers can choose from differentiated products produced in different economies.

- *Innovation*: Increased competition (from suppliers in other economies) leads to pressure to innovate and increase efficiency.

Under free trade, Adam Smith said that economies should specialise according to absolute advantage. (See Anderton p.88)

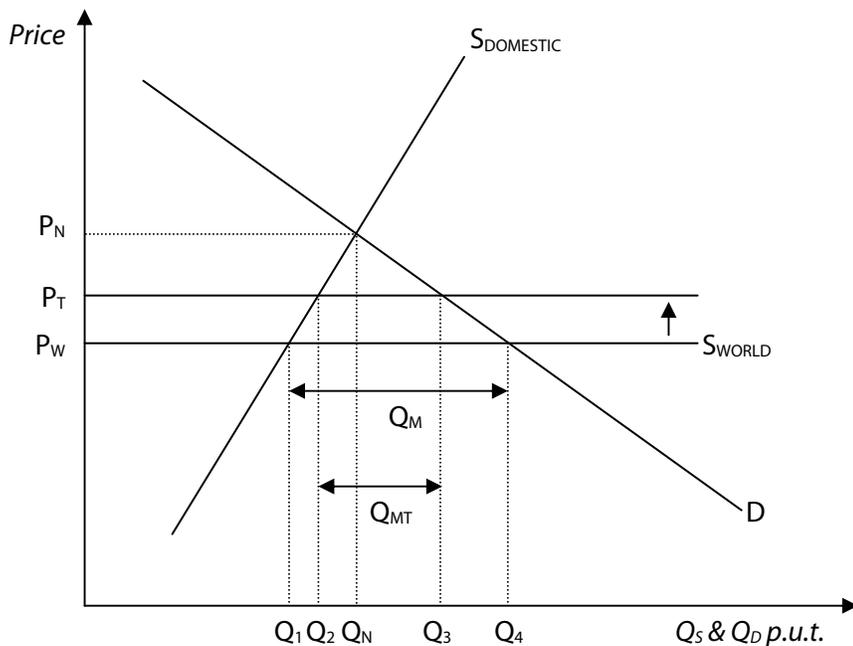
Absolute advantage is when a country can produce a good more cheaply in absolute terms than another country. That is, what a country can produce given its factor endowment. If an economy is said to have an absolute advantage this means that it can produce more than another economy or produce the same output at a lower absolute cost.

In reality one economy may be better at producing many goods than another economy – the economy may have an absolute advantage in the production of all goods. Trade can still be worthwhile if one economy has a comparative advantage. A comparative advantage is the opportunity cost of producing that item, the production of another good or service forgone. If one economy can produce good A by sacrificing the production of good B, yet another economy can only produce good A by sacrificing the production of two good B's the first economy is said to have a comparative advantage over the second.

The terms of trade and price ratio (the ratio of export prices to import prices) will determine whether trade is beneficial. However whilst specialisation brings rewards of increased productivity for all involved the benefits, the extra production, may appear predominantly or exclusively in a single economy or a minority of economies involved in the trade. As long as no economy is worse off through trading it is still likely though that trade will take place.

Tariffs

Clothing in Kenya: Using tariffs on imported clothing



Clothing is produced in Kenya, but the market equilibrium is a higher price than world supply. World supply is modelled as being perfectly elastic as there are large stocks of clothes.

By allowing free world trade the supply curve shifts to S_{WORLD} , and so the equilibrium price decreases from P_N to P_W and quantity consumed within the economy increases from Q_N to Q_4 . However domestic production falls from Q_N to Q_1 , and the quantity marked on the diagram as Q_M represents the level of imports if free trade is implemented.

This can be undesirable for an economy that has infant industries. A tariff is one form of protectionism. For industries with high fixed costs a reduction in output mentioned above due to world trade will cause a proportionally large increase in unit costs as illustrated to the left the movement from O_1 to O_2 causes a proportionally larger increase in unit costs from U_1 to U_2 .

Thus a tariff can be viewed as desirable to protect infant industries and so raise domestic production to a higher output, lowering unit costs. Increase domestic production will create more jobs and lower unemployment, which may help to achieve macroeconomic objectives in the short run. The size of the tariff can vary, but as illustrated above a tariff of magnitude $P_W P_T$ causes a decrease in total quantity demanded and supplied from Q_4 to Q_3 , an increase in domestic production of $Q_1 Q_2$ and lower imports down to $Q_2 Q_3$ from $Q_1 Q_4$. So, whilst the tariff benefits domestic producers as it increases their production total consumption is lower and the consumer is paying a higher price. The consumer surplus is also lower when a tariff is imposed so the consumer in Kenya is worse off.

Non-tariff protectionism

Briefly, these involve:

Quotas

A legal restriction on the value or amount of a good or service that can be imported.

Subsidies

Reducing the cost of domestic production of a good or service through financial help.

Exchange controls

Limiting the availability of foreign currency, yet since 1979 this is not an option for the government as all restrictions were removed.

Voluntary Export Restraints

Agreements between two economies to limit trade.

Arguments for and against protectionism

Free trade is the unrestricted exchange of goods and services between economies whilst protectionism is where restrictions are placed on these exchanges.

If an economy adopts free trade, economically they stand to gain many benefits. When there are no restrictions on trade companies compete globally. Competition brings about efficiency and innovation as consumers have choice over a variety of differentiated products produced in different economies. Consumers are also likely to pay a lower price and so will have an increased consumer surplus.

Further efficiency can be gained as specialisation occurs. Economies will produce according to absolute and comparative advantage where an economy produced goods at a lower factor cost or a lower opportunity cost. This will cause world output to increase and so the overall

standard of living in the world to increase. As in total more goods and services are being produced.

As economies trade globally and specialise they can benefit from economies of scale as the firms can increase their output to satisfy demand in the global economy not just the domestic economy. The reduction in unit costs as output increases. This means consumers can pay a lower price and/or the entrepreneur gets more profit, a greater reward for the risk taking which encourages further entrepreneurship.

An economy implementing free trade policies can therefore stand to gain increased efficiency brought about by increased competition.

However a sudden implementation of free trade policies can cause problems for an economy as factor immobility may cause high unemployment and firms encounter high barriers to entry in the form of economies of scale for firms in other economies already trading globally or in larger domestic economies.

Arguably therefore protectionist policies can be very useful in the short run and certainly cause the government to be more popular domestically.

Protecting declining industries and new start up industries can help keep unemployment at manageable levels and lead to increased international competitiveness. Protectionism is the raising of trade barriers against imports and can take a variety of form including tariffs, subsidies and quotas.

A further case for protectionism is for defence industries and those industries related to defence for the case of national security. These industries should be protected by law allowing operation only by firms directly under the control of the state or state authorities themselves.

In conclusion therefore while protectionist policies have some temporary applications there are few economic gains from protectionist policies. For the domestic economy consumers will pay higher prices and suffer a lower consumer surplus and firms may suffer retaliation from foreign countries and so may find it hard to export their goods and services. The world market will also suffer as world output will be lower than the potential as barriers prevent economies specialising according to absolute and comparative advantage.

What's come up in past exam papers (Jan 01 – Jan 04)

Unit 1

5.1.1	Jan 01	Jun 01	Jan 02	Jun 02	Jan 03	New Spec.	Jun 03	Jan 04
Economic problem								
Resources		✓						
Opportunity cost	✓				✓	✓	✓	✓
PPC	✓		✓	✓	✓			
5.1.2								
Demand	✓	✓	✓	✓	✓	✓	✓	✓
Consumer surplus		✓					✓	
PED	✓	✓	✓	✓		✓	✓	✓
YED		✓						✓
XED							✓	
Supply			✓		✓		✓	
Producer surplus								
PES		✓						
Equilibrium			✓	✓	✓			
5.1.3								
Costs	✓			✓	✓	✓		
Economies of scale								
Revenue								
Profit maximisation						✓		
Other objectives				✓		✓		
Market structure		✓	✓		✓		✓	✓
Barriers to entry			✓	✓		✓	✓	✓

Unit 2

5.2.1	Jan 01	Jun 01	Jan 02	Jun 02	Jan 03	New Spec.	Jun 03	Jan 04
Productive efficiency	✓				✓			
Allocative efficiency	✓	✓						✓
Pareto efficiency								
Efficiency and a PPC								
Efficiency and competition	✓							
5.2.2								
Externalities	✓	✓	✓	✓		✓	✓	✓
Market dominance (and X-inefficiency)								
Public goods			✓	✓		✓		✓
De/merit goods	✓ (M)				✓ (M)			
Factor immobility								
Inequality	✓						✓	
5.2.3								

Private/external costs and benefits			✓	✓	✓			
Taxes/subsidies		✓	✓	✓		✓	✓	✓
Price controls (max/min)							✓	
Regulation					✓		✓	✓
Information provision								
Competition policy								
Cost benefit analysis (CBA)								
Government failure					✓			

Unit 3

5.3.1	Jan 01	Jun 01	Jan 02	Jun 02	Jan 03	New Spec.	Jun 03	Jan 04
Unemployment			✓	✓	✓	✓	✓	
Inflation		✓	✓		✓		✓	
Balance of payments			✓	✓		✓	✓	
Economic growth	✓	✓	✓	✓	✓			
GDP (+ 3 measures)				✓		✓		
Conflict in macro policies								
5.3.2								
Aggregate demand	✓	✓	✓	✓	✓	✓	✓	✓
Aggregate supply			✓	✓		✓		
AD/AS diagram	✓	✓	✓	✓	✓	✓	✓	✓
Multiplier								
Equality								
5.3.3								
Fiscal policy	✓		✓			✓	✓	✓
Monetary policy	✓			✓			✓	✓
Exchange rates		✓				✓		✓
Interest rates	✓	✓	✓	✓		✓		
Supply side policies		✓			✓		✓	
5.3.4								
Gains from trade					✓			✓
Tariffs		✓		✓		✓		
Non-tariff protectionism		✓		✓		✓		
For/against protectionism	✓				✓			