

OXFORD IB DIPLOMA PROGRAMME



REVISION NOTES

SECOND EDITION

ECONOMICS

COURSE COMPANION

Jocelyn Blink
Ian Dorton

OXFORD

Revision – Introductory concepts

Scarcity: The world's resources are limited, but human wants and needs are unlimited. Therefore scarcity exists. Scarcity is the basic economic problem; because scarcity exists, resources have to be allocated. To the economist, all goods and services that have a price are considered to be scarce relative to people's demand for them.

Opportunity cost: Choices have to be made because scarcity exists, and people do not have infinite income. When a choice is made, something is inevitably sacrificed.

That which is sacrificed is called the opportunity cost. Opportunity cost is the value of something in terms of the next best alternative that was given up.

Free goods: A free good is unlimited in supply. When a free good is consumed, there is no opportunity cost. Free goods have no price.

Utility: Utility is an economics term that refers to the value of something to consumers. Utility reflects the satisfaction that a good brings to a consumer.

The basic economic problem

The choices that have to be made in economics about rationing scarce resources are often expressed in terms of three questions and are known as the basic economic problem.

1. What should be produced (and in what quantities)?
2. How should things be produced?
3. Who should things be produced for?

The problems all relate to the allocation of resources. Resources are also known as factors of production. Factors of production allow an economy to produce its output (goods and services). Economists separate resources into four factors of production.

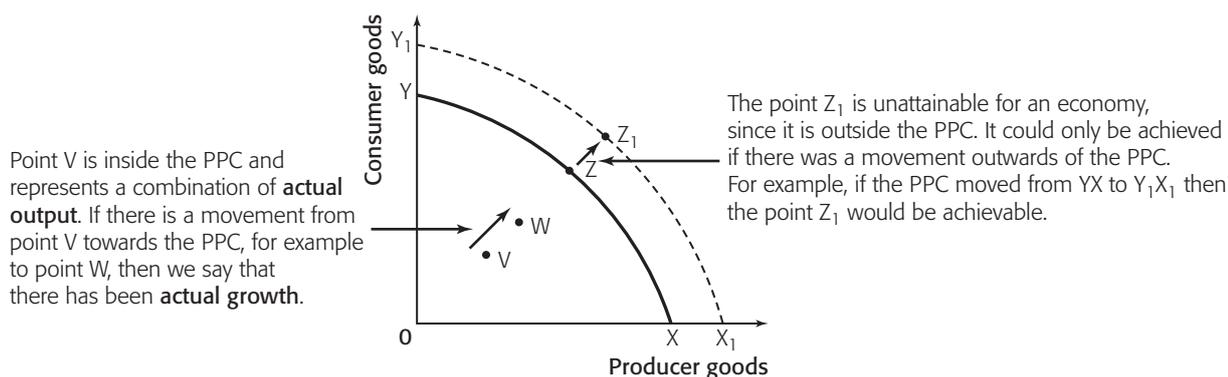
- Land – these are the natural resources (resources that come from nature) that are used to produce goods and services, for example land itself, lumber, trees and oil. The payment to land is rent.
- Labour – these are the human resources that are used to produce goods and services. This includes the workers that produce goods, such as factory workers and the workers that produce services, such as teachers. The payment to labour is wages.

- Capital – this includes all equipment, machinery and factories that are used to produce goods and services. Capital includes anything that was made by humans and is used to make goods and services. The payment to capital is interest.
- Entrepreneurship (management) – this includes the risk-taking and creative activities of people when they are bringing together the other factors of production. The payment to management is profit.

Production possibilities curves (PPCs)

A **production possibility curve** (PPC) shows the maximum combinations of goods and services that can be produced by an economy in a given time period, if all the resources in the economy are being used fully and efficiently and the state of technology is fixed. It is said to show **potential output**.

Any point inside the PPC is possible to achieve, but it means that not all of the factors of production in the economy are being used and/or some of the factors are being used inefficiently. In reality, of course, economies are always producing within their PPCs, since there are





always some unemployed factors of production in a country. For example, there is not a single economy in the world where the entire workforce is actually working at any given time. There will always be some unemployment in an economy, no matter how small.

An outward shift of the PPC can only be achieved if there is an improvement in the quantity and/or quality of factors of production. If achieved, it means that there is an increase in potential output but, of course, this does not necessarily mean that there is an increase in actual output. That would require a movement of the present point of actual output towards the new PPC. If there were to be a fall in the quantity of factors of production, then this would cause the PPC to shift inwards. This might be due to war or natural disasters.

Positive and normative economics

A **positive statement** is one that may be proven to be right or wrong by looking at the facts. A **normative statement** is a matter of opinion and cannot be conclusively proven to be right or wrong. It is usually easy to spot because it uses value-judgement words such as 'ought', 'should', 'too much' and 'too little'.

Positive economics deals with areas of the subject that are capable of being proven to be correct or not. **Normative economics** deals with areas of the subject that are open to personal opinion and belief. While it is easier to be confident in matters of positive economics, it is often more interesting dealing with questions in normative economics, even though a conclusive outcome is very unlikely.

Economic growth, economic development and sustainable development

Economic growth is an increase in a country's national output, measured by an increase in gross domestic product (GDP). It is a one-dimensional concept that includes only a monetary measure of the increase in output.

Economic development is a multidimensional concept and so it is much harder to define. If economic development occurs, then the standard of living of a country's citizens is improving. People enjoy more choices and more freedoms. They enjoy better health, better education and greater access to goods and services.

Though there are many development indicators, a commonly used one is the **Human Development Index (HDI)**. This is a composite measure that sums up three indicators of development: **life expectancy**, to gain an understanding of the health of the population; **literacy and school enrolment**, to gain an understanding of the education of the population; and **GDP per capita (at \$PPP)**, to gain an understanding of the population's access to goods and services.

Sustainable development refers to economic development that meets the needs of present generations but does not compromise the ability of future generations to meet their needs.

Planned and free market economies

Planned economies: In a planned economy, sometimes called a centrally planned economy, or a command economy, decisions as to what to produce, how to produce, and who to produce for, are made by a central body, the government. All resources are collectively owned. Government bodies arrange all production, set wages and set prices through central planning. Decisions are made by the government on behalf of the people and, in theory, in their best interests.

Free market economies: In a free market economy, sometimes called a private enterprise economy, or capitalism, prices are used to ration goods and services. All production is in private hands and demand and supply are left free to set wages and prices in the economy. The economy should work relatively efficiently and there should be few cases of surpluses and shortages.

Individuals make independent decisions about what products they would like to purchase at given prices and producers then make decisions about whether they are prepared to provide those products. The producers' decisions are based upon the likelihood of profits being made. If there are changes in the pattern of demand, then there will be changes in the pattern of supply in order to meet the new demand pattern. A change in the demand of consumers sends 'signals' that bring about a chain of events that re-allocates factors of production and makes sure that the wishes of the consumers are met. The free market system is a self-righting system.

In reality, all economies are **mixed economies**. What is different is the degree of the mix from country to country. Some countries, such as China, have high levels of planning and



government involvement in the economy. Even in the seemingly free economies, such as the USA, the UK, or even Hong Kong, government intervention is very much a part of the economic

system. Government involvement is deemed essential, since there are some dangers that will exist if the free market is left to operate without interference.

Disadvantages of a free market economy	Disadvantages of a planned economy
De-merit goods (things that are bad for people, such as drugs or child prostitution) will be overprovided, driven by high prices and thus a high profit motive.	Total production, investment, trade and consumption, in even a small economy, are too complicated to plan efficiently and there will be misallocation of resources, shortages and surpluses.
Merit goods (things that are good for people, such as education or health care) will be underprovided, since they will only be produced for those who can afford them and not for all.	As there is no price system in operation, resources will not be used efficiently. Arbitrary decisions will not be able to make the best use of resources.
Resources may be used up too quickly and the environment may be damaged by pollution, as firms seek to make high profits and to minimize costs.	Incentives tend to be distorted. Workers with guaranteed employment and managers who gain no share of profits are difficult to motivate. Output and/or quality will suffer.
Some members of society will not be able to look after themselves, such as orphans, the sick, and the long-term unemployed, and will not survive.	The dominance of the government may lead to a loss of personal liberty and freedom of choice.
Large firms may grow and dominate industries, leading to high prices, a loss of efficiency and excessive power.	Governments may not share the same aims as the majority of the population and yet, by power, may implement plans that are not popular or are even corrupt.

Revision – Demand and supply

Demand: The willingness and ability of a consumer to purchase a quantity of a good or service at a certain price (in a given time period).

Supply: The willingness and ability of a producer to produce a quantity of a good or service at a certain price (in a given time period).

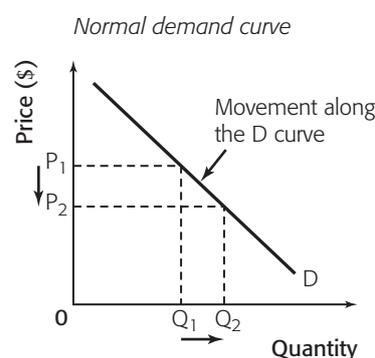
Law of demand: As the price of a good falls, the quantity demanded will normally increase. (The demand curve usually slopes downwards, *ceteris paribus*).

Law of supply: As the price of a good rises, the quantity supplied will normally rise. (The supply curve usually slopes upwards, *ceteris paribus*).

Ceteris paribus: An assumption that means 'all other things being equal'.

Demand and the price of the good or service

A change in the price of the product itself will lead to a change in the quantity demanded of the product, i.e. a movement along the existing demand curve. The phrase '**change in the quantity demanded**' is important, since it differentiates a change in price from the effect of a change in any of the other determinants of demand. (See the diagram on the left below.)



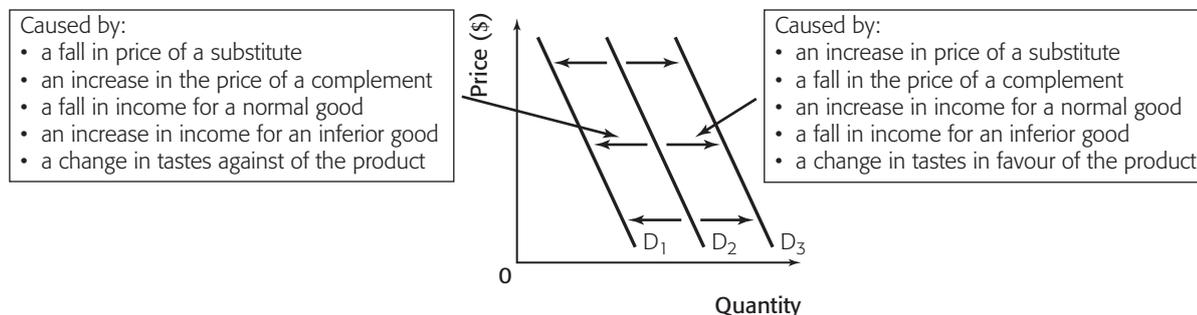
The determinants of demand

There are a number of factors that determine demand and lead to an actual **shift of the demand curve to either the right or the left**. Whenever we look at a change in one of the determinants, we always make the *ceteris paribus* assumption.

Income: Changes shift the demand curve. Outcome depends on whether the goods are normal or inferior.

Price of other goods: Changes shift the demand curve. Outcome depends on whether the products are substitutes or complements.

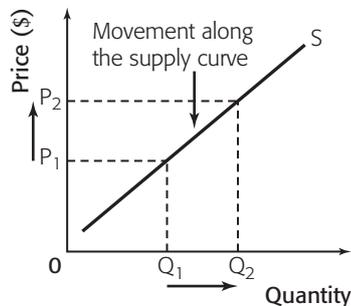
Tastes: Changes shift the demand curve. Outcome depends on whether the change is in favour of or against the product.



Other factors: There are larger factors where changes that may also shift the demand curve, such as changes in the size of the population, changes in income distribution, changes in government policy and seasonal changes.

Supply and the price of the good or service

A change in the price of the product itself will lead to a change in the quantity supplied of the product, i.e. a movement along the existing supply curve. The phrase ‘**change in the quantity supplied**’ is important, since it differentiates a change in price from the effect of a change in any of the other determinants of supply.



The determinants of supply

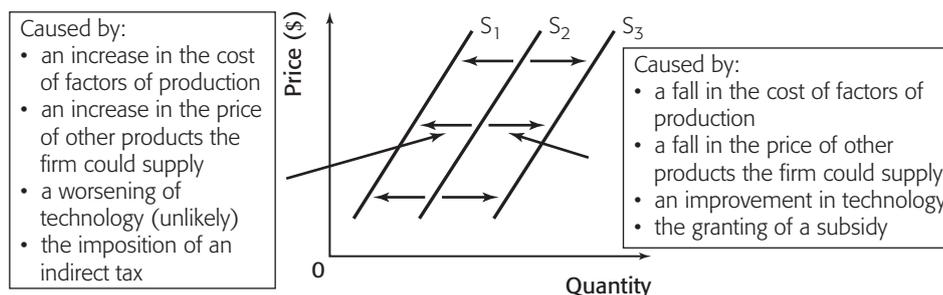
There are a number of factors that determine supply and lead to an actual **shift of the supply curve to either the right or the left**. Whenever we look at a change in one of the determinants, we always make the ceteris paribus assumption.

The cost of factors of production: Changes shift the supply curve. Outcome depends on whether the costs rise or fall.

Price of other products which the producer could produce instead of the existing product: Changes shift the supply curve.

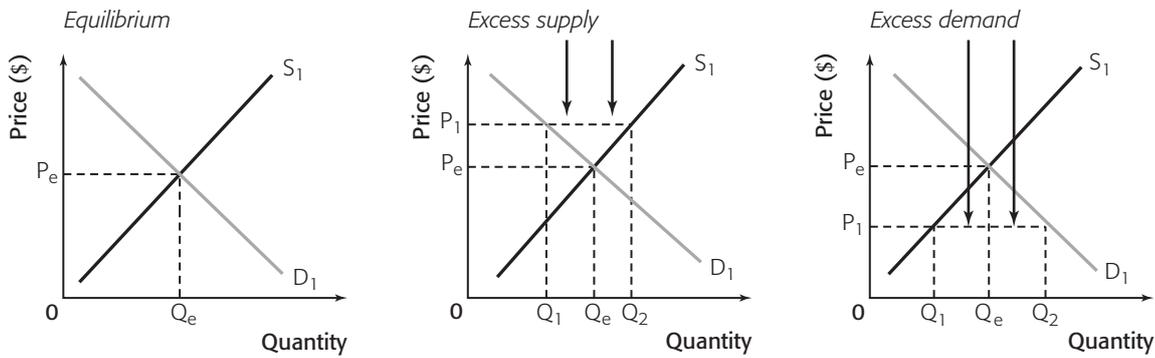
The state of technology: Changes shift the supply curve. Outcome depends on whether the change improves or harms productivity.

Government intervention: There are larger factors where changes may also shift the supply curve, such as the imposition of indirect taxes and the granting of subsidies.

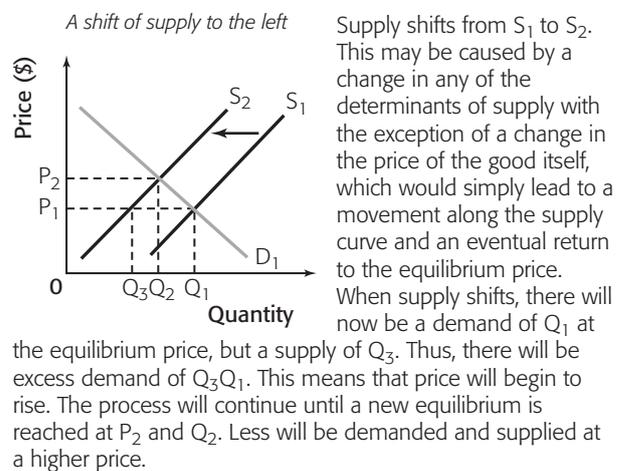
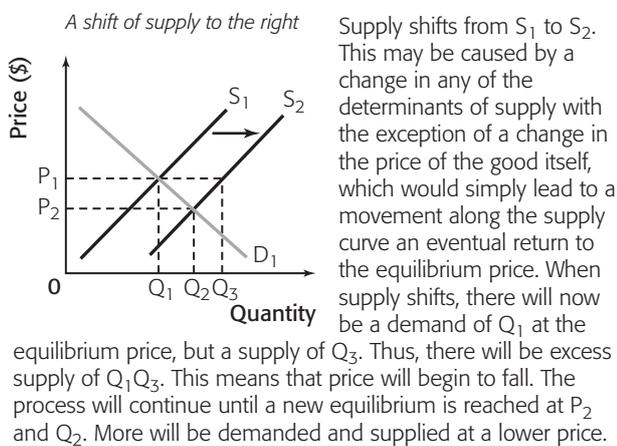
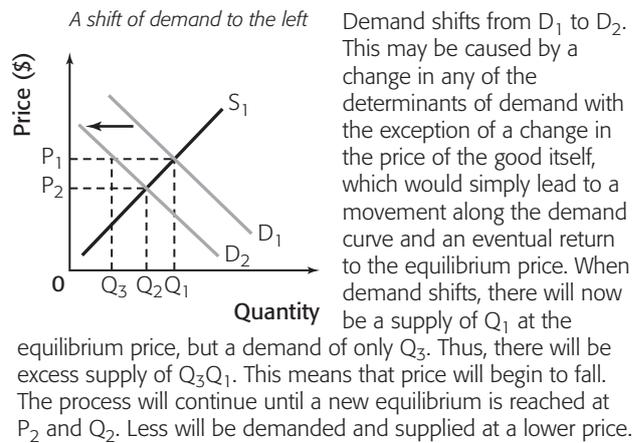
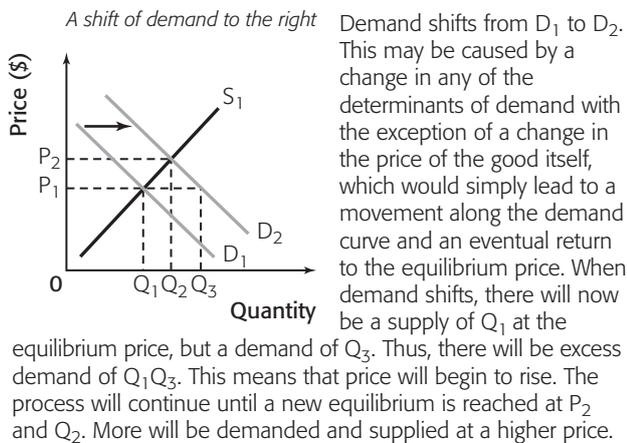


Equilibrium (the market mechanism)

When demand and supply come together, we get the creation of the equilibrium market price and quantity. The equilibrium is self-righting. If a firm tries to raise its price, then there will be **excess supply** at the new price and price will fall back to the equilibrium. In the same way, if a firm tries to lower its price, then there will be **excess demand** at the new price and price will go back up to the equilibrium.



The effect of changes in demand and supply on the equilibrium



Revision – Elasticity of demand and supply

Elasticity: A measure of the responsiveness of how much something changes when there is a change in one of the factors that determines it.

Elasticity of demand: A measure of how much the demand for a product changes when there is a change in one of the determinants of demand.

Price elasticity of demand: A measure of how much the quantity demanded of a product changes when there is a change in its price.

Cross elasticity of demand: A measure of how much the demand for a product changes when there is a change in the price of another product.

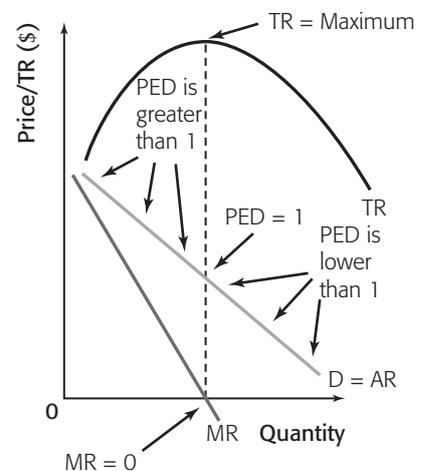
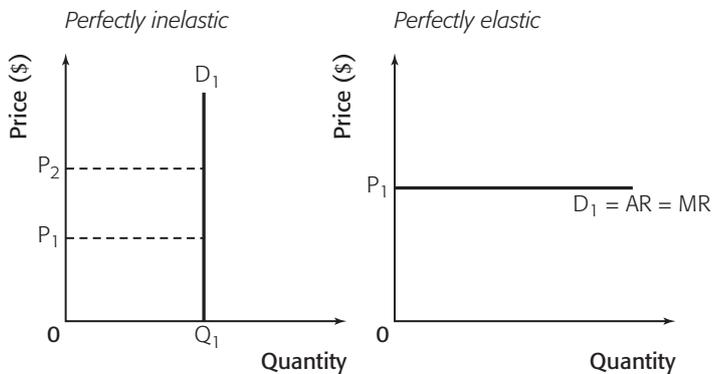
Income elasticity of demand: A measure of how much the demand for a product changes when there is a change in the consumer's income.

Price elasticity of supply: A measure of how much the quantity supplied of a product changes when there is a change in its price.

Price elasticity of demand (PED)

Formula:
$$PED = \frac{\text{Percentage change in quantity demanded of the product}}{\text{Percentage change in price of the product}}$$

The range of values is from zero to infinity. PED is perfectly inelastic when the value is zero. PED is inelastic when the value is between zero and 1. PED is unitary when the value is 1. PED is elastic when the value is between 1 and infinity. PED is perfectly elastic when the value is infinity.



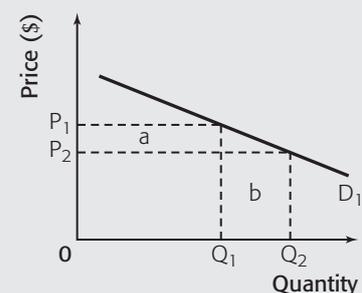
Values of PED for a normal demand curve will fall as the price falls, i.e. as we go down the demand curve.

- If PED is elastic, then total revenue can be increased by lowering the price of the product.
- If PED is inelastic, then total revenue can be raised by increasing the price of the product.
- If PED is equal to 1, then total revenue is being maximized.

The determinants of PED are:

- the number and closeness of substitutes – the more substitutes it has, the more elastic will be the demand for a product
- the necessity of the product and how widely it is defined – the less necessary it is, the more elastic will be the demand for a product
- the time period being considered – the longer the time period being considered, the more elastic will be the demand for a product.

Revenue boxes may be used to show the same relationships, e.g. when demand is relatively elastic, a fall in price from P_1 to P_2 leads to an increase in revenue of $(b - a)$.



Cross elasticity of demand (XED)

$$\text{Formula: XED} = \frac{\text{Percentage change in quantity demanded of product X}}{\text{Percentage change in price of product Y}}$$

The range of values is important. The sign tells us the relationship between the goods.

- If the value of XED is positive, then goods are substitutes for each other, e.g. Coke and Pepsi. The larger the value, the closer the relationship.
- If the value of XED is negative, then goods are complements for each other, e.g. DVD players and DVDs. The larger the value, the closer the relationship.
- If the value of XED is zero, then the goods are unrelated, e.g. strawberries and mobile phones.

The determinants of XED are the relationships between the goods in question, as shown above.

Income elasticity of demand (YED)

$$\text{Formula: YED} = \frac{\text{Percentage change in quantity demanded of the product}}{\text{Percentage change in income of the consumer}}$$

The range of values is important. For normal goods, the value of YED is positive, i.e. as income increases the demand for the good increases. If the value is between zero and 1, then the YED is said to be income inelastic. If the value is greater than 1, then the YED is said to be income elastic.

The sign tells us the type of good that is being considered.

- Necessity goods are products that have low-income elasticity, essential products, e.g. bread.
- Superior goods are products that have high-income elasticity, non-essential products, e.g. foreign holidays.
- Inferior goods are products that have negative income elasticity, because the demand decreases as income increases, e.g. cheap wine or non-brand name jeans.

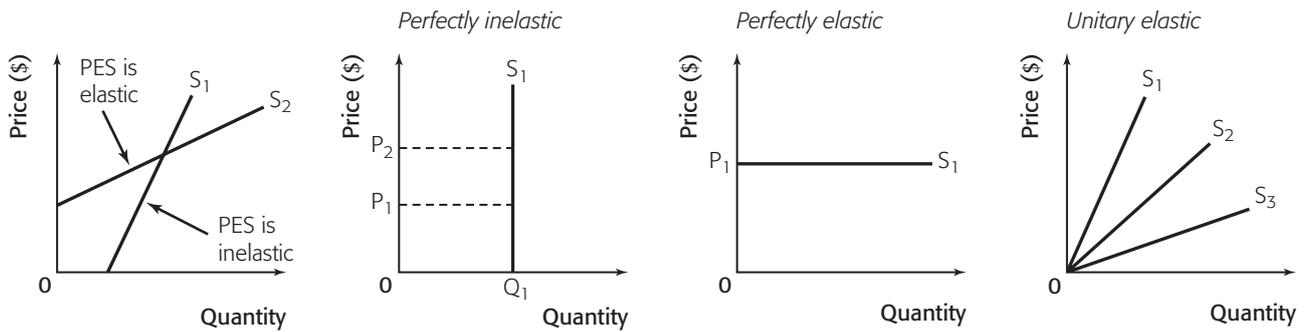
The determinants of YED are the types of goods in question, as shown above.

Price elasticity of supply (PES)

$$\text{Formula: PES} = \frac{\text{Percentage change in quantity supplied of the product}}{\text{Percentage change in price of the product}}$$

The range of values is from zero to infinity. PES is perfectly inelastic when the value is zero. PES is inelastic when the value is between zero and 1. PES is unitary when the value is 1. PES is

elastic when the value is between 1 and infinity. PES is perfectly elastic when the value is infinity.



In international trade, it is assumed that the supply of commodities, such as wheat, available to a country for import is perfectly elastic, because consumers can import all that they want as long as they are prepared to pay the 'world price'.

The determinants of PES are:

- how much costs rise as output increases – if total costs rise significantly as a producer attempts to increase supply, then supply will not be raised and so supply will be relatively inelastic
- the time period being considered – the longer the time period being considered, the more elastic will be the supply of a product. In the immediate time period, PES will be perfectly inelastic. In the short run, as firms can change variable factors, PES will become more elastic. In the long run, when firms can change all factors, PES will be even more elastic.

4

Revision – Government intervention

Maximum (ceiling) price: A price set below the equilibrium price, preventing producers from raising the price above it.

Minimum (floor) price: A price set above the equilibrium price, preventing producers from reducing the price below it.

Commodity agreement: The situation where different countries work together to operate a buffer stock scheme for a particular commodity.

Indirect tax: A tax imposed upon expenditure, e.g. VAT, sales tax or merversteuer.

Subsidy: An amount paid by the government to a firm per unit of output.

Price controls – maximum and minimum prices

Maximum price – the government may set a **maximum price**, below the equilibrium price, which then prevents producers from raising the price above it. This is sometimes known as the **ceiling price**.

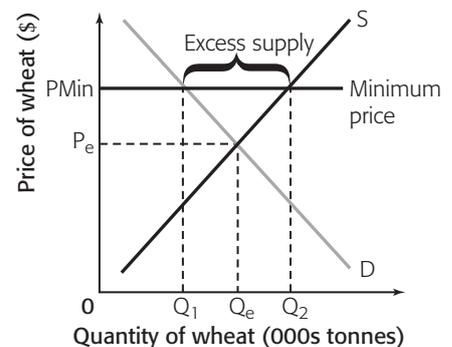
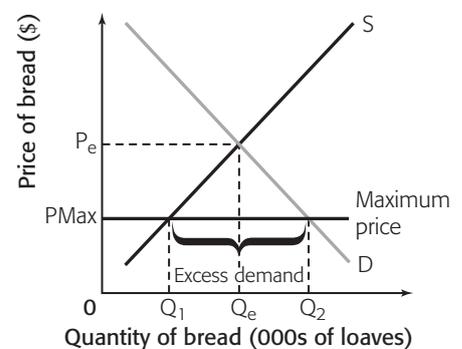
Maximum prices are usually set to protect consumers and they are normally imposed in markets where the product in question is a necessity and/or a merit good. For example, governments may set maximum prices in agricultural and food markets during times of food shortages to ensure low-cost food for the poor or they may set maximum prices on rented accommodation to attempt to get affordable accommodation for those on low incomes. Maximum prices will, however, lead to excess demand.

The excess demand creates problems. The shortages may lead to the emergence of a black market, (an illegal market) and queues developing in the shops. Thus, governments have to act. Essentially, they have two options. First, attempt to shift the demand curve to the left, until equilibrium is reached at the maximum price, but this would limit the consumption of the product, which goes against the point of imposing the maximum price.

Second, attempt to shift the supply curve to the right, until equilibrium is reached at the maximum price, with more being supplied and demanded. There are a number of ways of doing this.

- The government could offer subsidies to the firms in the industry to encourage them to produce more.
- The government could start to produce the product itself, thus increasing the supply.
- If the government had previously stored some of the product (see buffer stocks), then they could release some of the stocks (stored goods) onto the market.

Minimum price – the government may set a **minimum price**, above the equilibrium price, which then prevents producers from reducing the price below it. This is sometimes known as the **floor price**.



Minimum prices are mostly set for one of two reasons: either to attempt to raise incomes for producers of goods and services that the government thinks are important, such as agricultural products; or to protect workers by setting a minimum wage, to ensure that workers earn enough to lead a reasonable existence. Minimum prices will, however, lead to excess supply.

The excess supply creates problems. Producers will find that they have surpluses and will be tempted to try to get around the price controls and sell their excess supply for a lower price. Thus, the government has to intervene. The government would normally eliminate the excess supply by buying up the surplus products, at the minimum price, thus shifting the demand curve to the right and creating a new equilibrium. The government could then store the surplus, destroy it or attempt to sell it abroad.

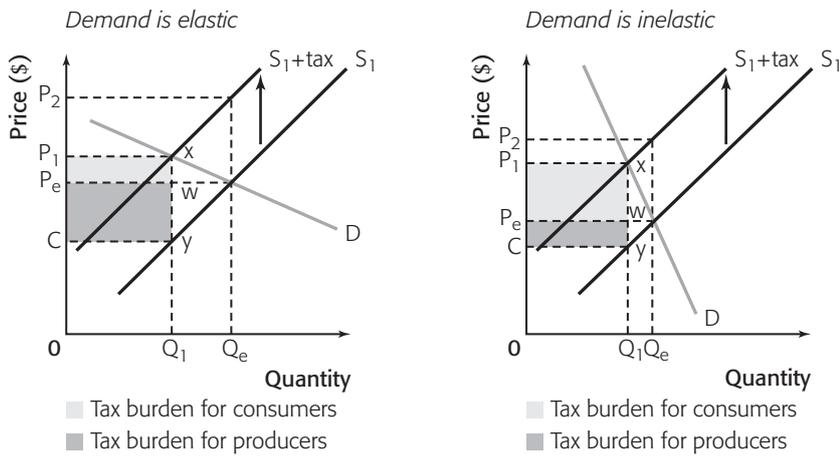
There are two other ways that the minimum price can be maintained. First, producers could be limited by quotas, restricting supply. This would keep price at P_{Min} but would mean that only a limited number of producers would receive it. Second, the government could attempt to increase demand for the product by advertising or, if appropriate, by restricting supplies of the product that are being imported, through protectionist policies, thus increasing demand for domestic products.

If governments do protect firms by guaranteeing minimum prices, there are problems that are likely to occur. Firms may think that they do not have to be as cost-conscious as they should be and this may lead to inefficiency and a waste of resources. It may also lead to firms producing more of the protected product than they should and less of other products that they could produce more efficiently.

Indirect taxes

An indirect tax is a tax imposed upon expenditure. It is a tax that is placed upon the selling price of a product, so it raises the firm's costs and thus shifts the supply curve for the product vertically upwards by the amount of the tax. Less will be supplied at every price because of this. Producers and consumers will, between them, bear the burden of any tax that is put on. The amount that each pays will depend upon the elasticity of demand.

1. If price elasticity of demand (PED) is greater than price elasticity of supply (PES), then the producer will pay more of the tax.
2. If PED is less than PES, then the consumer will pay most of the tax.
3. If demand is elastic, then the producer will pay more of the tax
 $wy > wx$
4. If demand is inelastic, then the consumer will pay most of the tax
 $wx > wy$



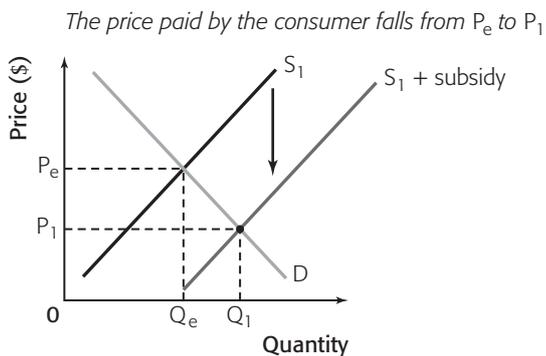
This is why governments tend to place indirect taxes on products that have relatively inelastic demand, such as alcohol and cigarettes. By doing this, the government will gain high revenue and yet not cause a large fall in employment, because demand changes by a proportionately smaller amount than the change in price.

Subsidies

A subsidy is an amount of money paid by the government to a firm, per unit of output. The main reasons for subsidy are:

- to lower the price of essential goods, such as milk, to consumers, so consumption of the product will be increased
- to guarantee the supply of products that the government think are necessary for the economy, such as a basic food supply
- to enable producers to compete with overseas trade, thus protecting the home industry.

If a subsidy is granted to a firm, then the supply curve for the product will shift vertically downwards by the amount of the subsidy, because it reduces the costs of production for the firm, and more will be supplied at every price.



The amount paid by the government to the subsidy is the shaded area. (The amount of the subsidy multiplied by the quantity sold).

5

Revision – Market failure

Community surplus: The welfare of society that is made up of consumer surplus plus producer surplus.

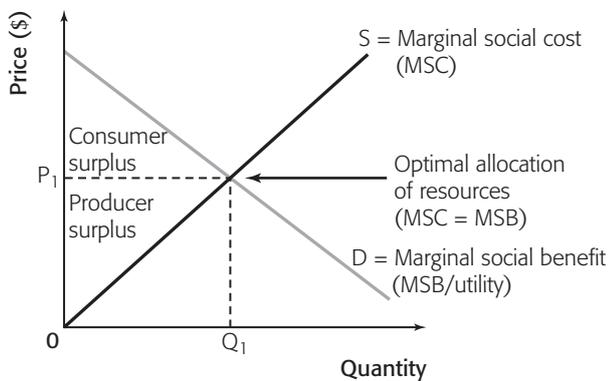
Social efficiency: Exists when community surplus is maximized. It is where $MSC = MSB$.

Market failure: A market is said to be failing when it produces at a level where community surplus is not maximized, i.e. where MSC does not equal MSB .

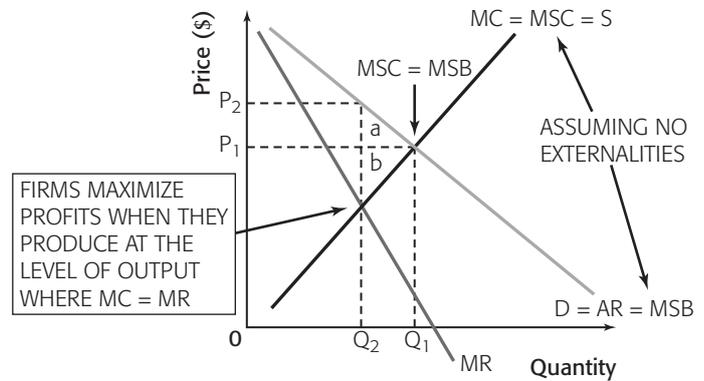
Market failure – imperfect competition

Monopolists, and other imperfect markets, restrict output in order to push up prices and maximize profits. The result is that they do not

produce at the socially optimum level of output, Q_1 , where $MSC = MSB$, as we see below on the left. Instead, they produce at Q_2 , as shown on the right. There is a loss of community surplus of $a + b$.



Consumer surplus + Producer surplus = Community surplus



Governments may try to reduce this market failure by intervening to reduce the power of the monopoly by:

- using legal measures to make the market more competitive, by making mergers and takeovers more difficult to achieve
- setting up regulatory bodies, monopolies watchdogs, to take action if they feel that the public interest is being harmed.

2. They are non-rivalrous – one person consuming them does not prevent another person consuming them as well.

Governments may try to reduce this market failure as follows.

- They may provide the goods themselves, for example national defence or flood barriers. The use of taxes to fund the provision spreads the cost over a large number of people, who would not be prepared to pay individually.
- They may subsidize private firms, covering all of the costs, to provide the goods.

Market failure public goods, merit goods and demerit goods

Public goods are goods that would not be provided at all in a free market. Since they are goods that are considered to be of benefit to society, this lack of provision is considered to be a market failure.

The reason for non-provision is because public goods have two characteristics.

1. They are non-excludable – it is impossible to stop other people consuming them once they have been provided.

Merit goods are goods that would be under-provided by the free market, and so would be under-consumed. Since they are goods that are considered to be of benefit to society, this under-provision is considered to be a market failure. Examples would be education, health care, sports facilities and the opera. All public goods are merit goods.

Governments may try to reduce this market failure by:

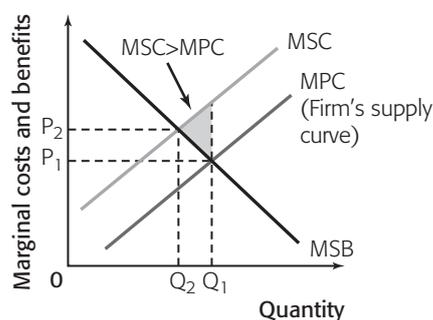
- direct provision of more-important merit goods, such as education or health care
- subsidization of less-important merit goods, such as sports facilities and the opera.

De-merit goods are goods that would be over-provided by the free market, and so over-consumed. Since they are goods that are considered to be harmful to society, this over-provision is considered to be a market failure. Examples would be child pornography, hard drugs, cigarettes and alcohol.

Governments may try to reduce this market failure by:

- completely banning the worst of these goods, for example child pornography and hard drugs
- taxing relatively less-damaging goods, such as cigarettes and alcohol. The level of the tax reflects the level of the damage.

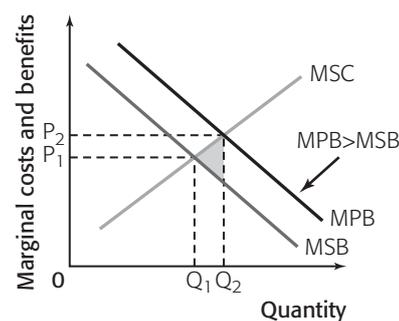
Market failure – negative externality of production



These happen when the production of a good or service creates external costs that are harmful to **third parties**, e.g. when a factory pollutes a river with waste. The costs to society are the costs of the firm plus the external costs that the firm creates, but does not pay for. The good or service is over-produced and so there is a **welfare loss**. The government could:

- tax the firm to recover the external costs
- legislate to ban the firm or to set environmental standards
- issue tradable emission permits.

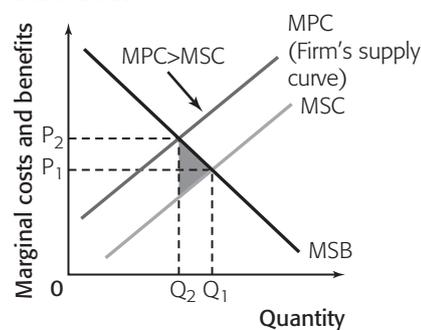
Market failure – negative externality of consumption



These happen when the consumption of a good or service creates external costs that are harmful to **third parties**, e.g. through secondary smoking or cars and air pollution. The benefits to society are less than the benefits to the consumer, because there is negative utility suffered by the third parties. The good or service is over-consumed and so there is a **welfare loss**. The government could:

- ban consumption of the good or service
- impose indirect taxes on the good or service
- provide education and negative advertising to reduce demand for the good or service.

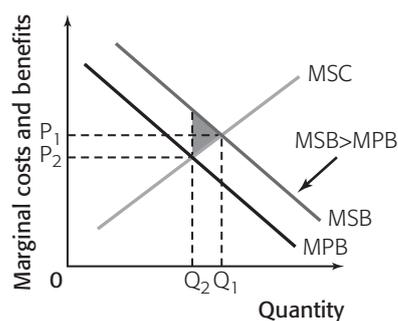
Market failure – positive externality of production



These happen when the production of a good or service creates external benefits that are good for **third parties**, e.g. when a factory provides training for employees. The costs to the firm are production costs plus the external costs of training, which society does not have to pay for. The good or service will be under-produced and so there is a **potential welfare gain**, if output is increased to the point where $MSC = MSB$. The government could:

- subsidize the firm to reduce the firm's costs
- provide the training itself.

Market failure – positive externality of consumption



These happen when the consumption of a good or service creates external benefits that are good for **third parties**, e.g. having vaccinations or using deodorant. The benefits to society are greater than the benefits to the consumer, because there is positive utility gained by the third parties. The good or service will be under-consumed and so there is a **potential welfare gain**, if consumption is increased to the point where $MSC = MSB$. The government could:

- subsidize the supply of the good or service
- use positive advertising to increase demand for the good or service
- pass laws making consumption of the good or service obligatory.

Market failure – other causes

The immobility of factors of production

In a perfect market, in theory, resources move easily between uses, attracted by higher factor payments. In reality, this does not happen so easily and there are shortages of factors and time lags, e.g. coal miners may not quickly become software engineers or workers in eastern Austria may not move to jobs in western Austria. To correct this type of market failure, governments adopt policies that either take work to the workers or take the workers to the work. They will also have to encourage retraining schemes.

Problems of information

Theory tells us that in a perfect market, both consumers and producers have perfect knowledge of the market. In reality, of course,

this is not the case and so decisions are often being made based upon incomplete information. This makes it very hard for marginal costs and marginal benefits to be equated and this leads to market failure. Consumers make decisions to purchase goods that they do not buy often, and so have little knowledge of, such as cars and houses. Producers have to estimate demand over a period of time and so often set an average price to cover a range of possibilities. Governments may try to improve the flow of information to correct this market failure, but this is expensive and may not be possible for all markets.

The creation of inequality

The free market often leads to the existence of large differences in income and wealth between different groups of people in the economy. It may be that society sees the creation of inequality as a failure of the market and may then attempt to use progressive taxation to redistribute income from one group of the population in order to benefit a less fortunate group.

a. Short-termism

Sometimes, short-term decisions are made that may have severe long-term implications. Let us consider two examples.

Firstly the private sector is often blamed for pursuing short-term profit-based objectives at the cost of long-term problems. Firms may use up resources in the short-term at a rate that means that development in the future will not be able to be sustained at the present rate. This reduces the potential for sustainable development.

The second example concerns the public sector – the government. Governments may intervene in the workings of markets in the short-term in order to gain results that will lead to re-election, even though this intervention may go against the long-term best interests of society. They are, in effect, causing a market failure in these markets by their intervention.

Short run: The period of time in which at least one factor of production is fixed. All production takes place in the short run.

Long run: The period of time in which all factors of production are variable, but the state of technology is fixed. All planning takes place in the long run.

The hypothesis of eventually diminishing marginal returns: As extra units of a variable factor are added to a given quantity of a fixed factor, the output from each additional unit of the variable factor will eventually diminish.

The hypothesis of eventually diminishing average returns: As extra units of a variable factor are added to a given quantity of a fixed factor, the output per unit of the variable factor will eventually diminish.

Economies of scale: Any falls in long-run average costs that come about when a firm alters all of its factors of production in order to increase its scale of output.

Diseconomies of scale: Any increases in long-run average costs that come about when a firm alters all of its factors of production in order to increase its scale of output.

Shut-down price: The level of price that enables a firm to cover its variable costs in the short run, where $P = AVC$, if the firm cannot cover variable costs, then it will shut down in the short run (and plan ahead in the long run).

Break-even price: The price at which a firm is able to make normal profit in the long run, where $P = ATC$, so the firm covers all of its costs, including the opportunity cost.

Profit maximizing output: The level of output where marginal cost is equal to marginal revenue ($MC = MR$).

Product and the law of diminishing returns (short run)

The law of diminishing returns causes production eventually to become inefficient as more of a variable factor is applied to fixed factors and so the rate of growth of total product begins to decrease and the output per unit of the variable factor, and from each extra unit of the variable factor, begins to fall. This is shown below.

Total product (TP) is the total output that a firm produces, using its fixed and variable factors in a given time period. Output in the short run can only be increased by applying more units of the variable factors to the fixed factors.

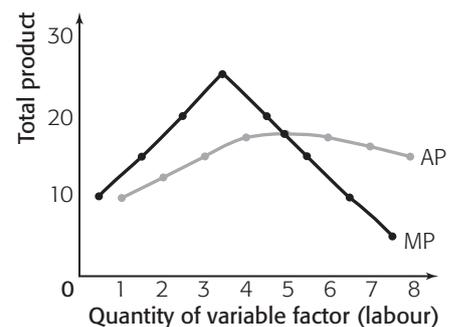
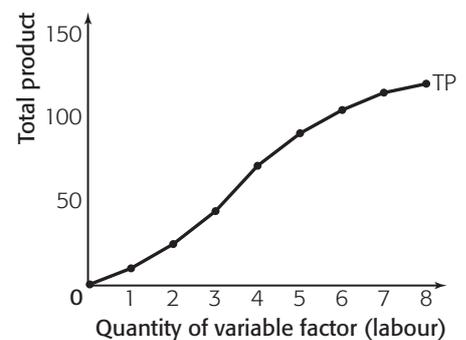
Average product (AP) is the output that is produced, on average, by each unit of the variable factor.

Marginal product (MP) is the extra output that is produced by using an extra unit of the variable factor.

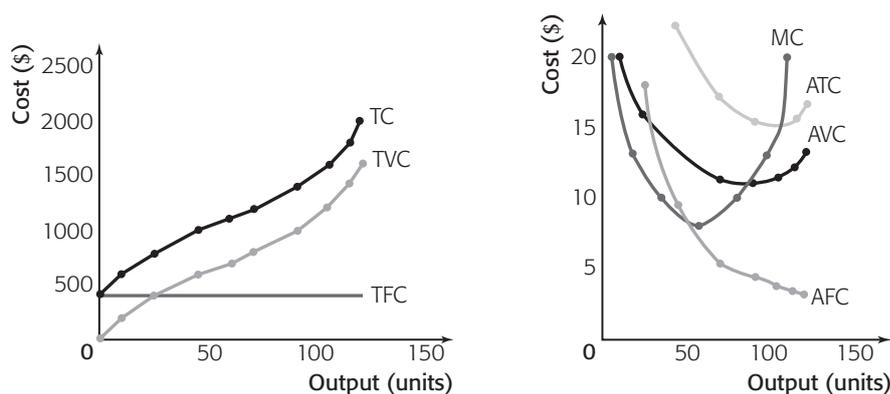
Costs – total (short run)

Total costs are the complete costs of producing output. We use three measures:

- Total fixed cost (TFC)** is the total cost of the fixed assets that a firm uses in a given time period. Since the number of fixed assets is, by definition, fixed, TFC is a constant amount. It is the same whether the firm produces one unit or one hundred units.
- Total variable cost (TVC)** is the total cost of the variable assets that a firm uses in a given time period. TVC increases as the firm uses more of the variable factor.



3. **Total cost (TC)** is the total cost of all the fixed and variable factors used to produce a certain output. It is equal to TFC plus TVC.

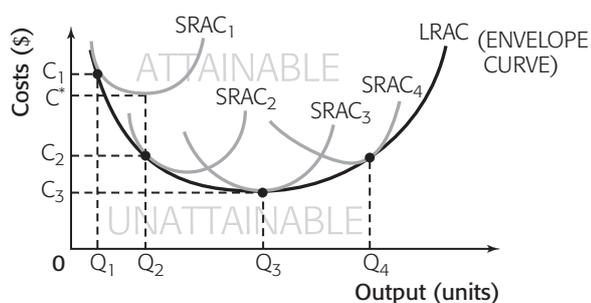


Costs – average and marginal (short run)

- Average costs** are costs per unit of output. We use three measures.
 - Average fixed cost (AFC)**
AFC is the fixed cost per unit of output. As TFC is a constant, **AFC always falls as output increases.**
 - Average variable cost (AVC)**
AVC is the variable cost per unit of output. AVC tends to fall as output increases and then to start to rise again as the output continues to increase. This is explained by the hypothesis of eventually diminishing average returns.
 - Average total cost (ATC)**
ATC is the total cost per unit of output. It is equal to AFC plus AVC. As with AVC, ATC tends to fall as output increases and then to start to rise again as the output continues to increase.
- Marginal cost (MC)** is the increase in total cost of producing an extra unit of output. MC tends to fall as output increases and then to start to rise again as the output continues to increase. This is explained by the hypothesis of eventually diminishing marginal returns.

Costs (long run) and economies and diseconomies of scale

When planning in the long run, an entrepreneur is free to adjust the quantity of all of the factors of production that are used and is only restrained by the current level of technology. This means that in the long run, we look at what happens to costs when **all of the factors of production are increased** in order to increase output. In theory, the long-run average cost curve (LRAC) is an 'envelope' curve, i.e. it envelops an infinite number of short-run average cost (SRAC) curves.



When long-run unit costs are falling as output increases, we say that the firm is experiencing **increasing returns to scale**. This means that a given percentage increase in all factors of production will lead to a greater percentage increase in output, thus reducing long-run average costs.

When long-run average costs are constant as output increases, we say that the firm is experiencing **constant returns to scale**. This means that a given percentage increase in all factors of production will lead to the same percentage increase in output, thus leaving long-run average costs the same.

When long-run average costs are rising as output increases, we say that the firm is experiencing **decreasing returns to scale**. This means that a given percentage increase in all factors of production will lead to a smaller percentage increase in output, thus increasing long-run average costs.

Why do long-run costs increase or decrease as output increases? There are two factors to be considered.

1. **Economies of scale** – these are any falls in long-run average costs that come about when a firm alters all of its factors of production in order to increase its scale of output. Economies of scale lead to the firm experiencing increasing returns to scale. The main economies of scale that may benefit a firm as it increases the scale of its output are **specialization, division of labour, bulk buying, financial economies** and **transport economies**.
2. **Diseconomies of scale** – these are any increases in long-run average costs that come about when a firm alters all of its factors of production in order to increase its scale of output. Diseconomies of scale lead to the firm experiencing decreasing returns to scale. The main diseconomies of scale are **control and communication problems, alienation and loss of identity**.

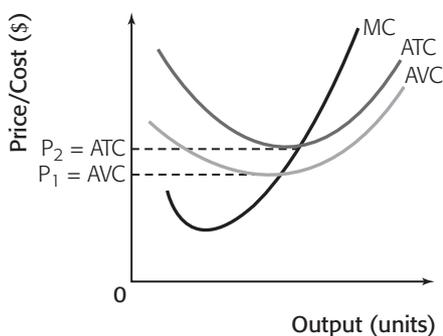
All of the above economies and diseconomies of scale relate to the unit cost decreases or increases that might be encountered by a single firm. They are known as **internal economies and diseconomies of scale**. There are other economies and diseconomies that come about when the size of the whole industry increases and this has an effect on the unit costs of individual firms. They are known as **external economies and diseconomies of scale**.

Economist's definition of profit, shut-down price, break-even price and profit maximization

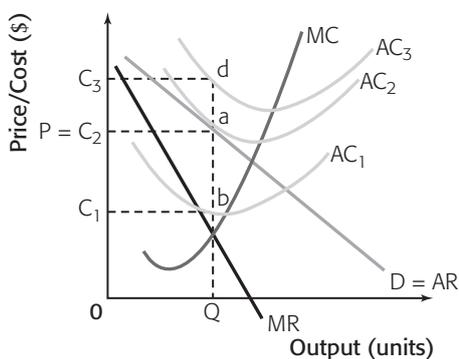
Normal profit: Total revenue = total cost (fixed cost, variable cost **and opportunity cost**). The opportunity cost is the amount of profit that the owner of the firm expects to make. If the owner does, then he/she is happy.

Abnormal profit: Total revenue > total cost (fixed cost, variable cost **and opportunity cost**). The owner is making more than his/her expected profit and so is very happy.

Losses: Total revenue < total cost (fixed cost, variable cost, **and opportunity cost**). The owner is making less than his/her expected profit and so, if the losses continue in the long run, the owner will shut down the firm and move to his/her next best occupation.



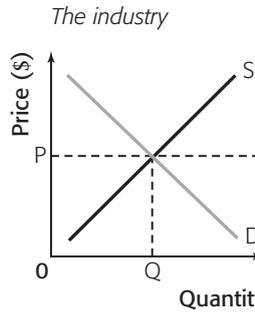
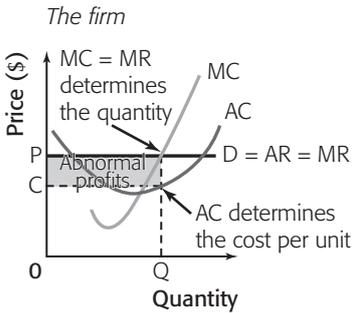
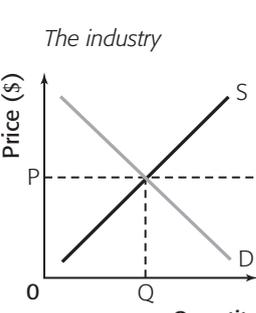
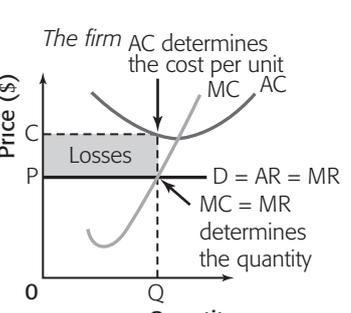
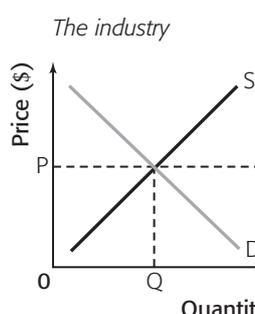
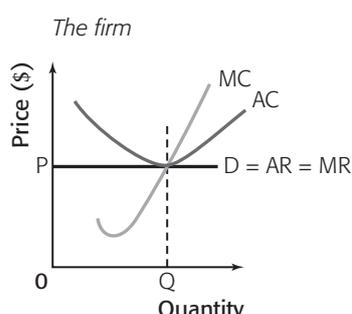
The shut-down price is $P_1 = AVC$. If the firm receives a price below this, then the firm will shut down in the short run and try to plan for a profit in the long run. The break-even price is $P_2 = ATC$. If the firm receives a price below this in the long run, then the firm will shut down for good. If the firm receives the break-even price, then the firm will be happy, since it is making normal profit.



Profit is maximized where $MC = MR$. If the cost curve is at AC_1 , then the firm is making abnormal profits of C_1C_2ab (a-b per unit). If the cost curve is at AC_2 , then the firm is making normal profits. If the cost curve is at AC_3 , then the firm is making losses of C_2C_3da (d-a per unit).

Perfect competition (PC) – assumptions

1. Industry is made up of a very large number of firms.
2. Each firm is so small, relative to the size of the industry, that it cannot noticeably affect the output of the industry as a whole. (Thus, the firms are price takers.)
3. The firms all produce identical goods, with no brand names and no marketing.
4. Firms are completely free to enter and exit the industry.
5. All consumers and producers have perfect knowledge of the market.

<p>SHORT-RUN ABNORMAL PROFITS</p> <p><i>The industry</i></p>  <p><i>The firm</i></p>  <p>In PC, in the short run firms may make excess profits. If this is the case, other firms will start to enter the industry and eventually, the industry supply curve will shift to the right, prices will fall and firms will make normal profits in the long run.</p>	<p>SHORT-RUN LOSSES</p> <p><i>The industry</i></p>  <p><i>The firm</i></p>  <p>In PC, in the short run firms may make losses. If this is the case, firms will start to leave the industry and eventually, the industry supply curve will shift to the left, prices will rise and remaining firms will make normal profits in the long run.</p>
<p>LONG-RUN NORMAL PROFITS</p> <p><i>The industry</i></p>  <p><i>The firm</i></p>  <p>In PC, in the long run firms make normal profits.</p>	<p>EFFICIENCY</p> <p>In the short run in PC, firms are allocatively efficient, producing where $MC = AR$, but not productively efficient, because they do not produce where $MC = AC$.</p> <p>In the long run in PC, firms are allocatively efficient, producing where $MC = AR$ and productively efficient, producing where $MC = AC$.</p>

Monopolistic competition – assumptions

1. Industry is made up of a fairly large number of firms.
2. Each firm is small, relative to the size of the industry. The actions of one firm are unlikely to have a great effect on any of its competitors.
3. The firms all produce slightly differentiated goods.
4. Firms are completely free to enter and exit the industry.



SHORT-RUN ABNORMAL PROFITS

In monopolistic competition, in the short run firms may make excess profits. If this is the case, other firms will start to enter the industry, taking trade from the existing firms and competing away the abnormal profits. This continues until all firms are making normal profits in the long run.

SHORT-RUN LOSSES

In monopolistic competition, in the short run firms may make losses. If this is the case, firms will start to leave the industry and their customers are taken up by remaining firms, which find demand increases. This continues until all remaining firms are making normal profits in the long run.

LONG-RUN NORMAL PROFITS

In monopolistic competition, in the long run firms make normal profits.

EFFICIENCY

In the short run and the long run in monopolistic competition, firms are **neither** allocatively efficient, failing to produce where $MC = AR$, **nor** productively efficient, failing to produce where $MC = AC$.

Monopoly – assumptions

1. There is only one firm, so the firm is the industry.
2. Barriers to entry exist, which stops new firms entering the industry.
3. The monopolist may make abnormal profits in the long run because of barriers to entry.

SHORT-RUN ABNORMAL PROFITS

In monopoly, in the short run the firm may make excess profits. If this is the case, and the firm has barriers to entry, it will continue to do so in the long run.

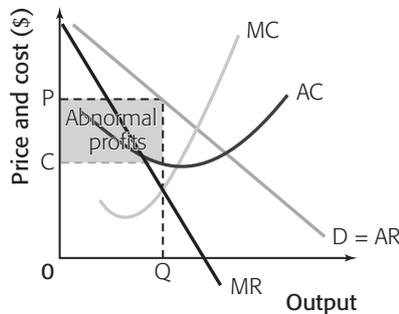
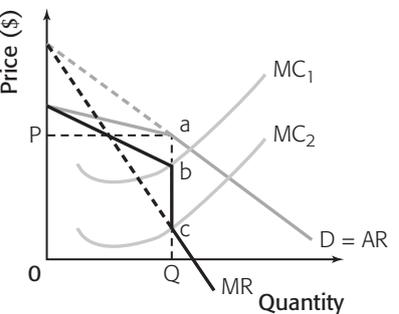
SHORT-RUN LOSSES

In monopoly, in the short run the firm may make losses. If this is the case, the firm will attempt to plan ahead in the long run to make at least abnormal profit. If it cannot, then it will shut down and the industry will disappear.

<p>SOURCES OF MONOPOLY POWER/BARRIERS TO ENTRY</p> <ol style="list-style-type: none"> 1. Economies of scale 2. Natural monopoly 3. Legal barriers 4. Brand loyalty 5. Anti-competitive behaviour 	<p>ADVANTAGES OF MONOPOLY OVER PC</p> <ul style="list-style-type: none"> • In monopoly, firms may achieve economies of scale and so have lower prices than in PC. • There may be higher levels of investment in R&D.
<p>EFFICIENCY</p> <p>In the short run and the long run in monopoly, the monopoly is neither allocatively efficient, failing to produce where $MC = AR$, nor productively efficient, failing to produce where $MC = AC$.</p>	<p>DISADVANTAGES OF MONOPOLY OVER PC</p> <ul style="list-style-type: none"> • Monopoly is productively and allocatively inefficient. • If economies of scale are not great enough, then the monopoly will restrict output and charge higher prices. • The monopoly may exercise anti-competitive behaviour.
<p>PRICE DISCRIMINATION</p> <p>This exists when a producer sells the exact same product to different consumers at different prices. There are three necessary conditions:</p> <ol style="list-style-type: none"> 1. The producer must have some price-setting ability, which is why it mostly occurs in oligopoly and monopoly. 2. The consumers must have different elasticities of demand. 3. The producer must be able to separate the different groups of consumers to avoid re-sale. 	

Oligopoly

1. Industry is dominated by a few firms, i.e. a large proportion of the industry's output is shared by just a small number of firms.
2. Some oligopolies have identical products, e.g. oil. Some have differentiated products, e.g. motor cars.
3. In most cases, there are barriers to entry, but not always.
4. Firms are very much influenced by the actions of other firms – **interdependence**.

<p>COLLUSIVE OLIGOPOLY</p>  <p>The graph shows Price and cost (\$) on the vertical axis and Output on the horizontal axis. It includes curves for Marginal Cost (MC), Average Cost (AC), Demand (D = AR), and Marginal Revenue (MR). The equilibrium quantity is Q, where MR = MC. The price is P, where P = D = AR. A shaded rectangle between price C (at MC = Q) and price P (at D = Q) is labeled 'Abnormal profits'.</p> <p>The firms collude to charge the same price, acting as a monopolist, and share the monopoly profits. Formal collusion is mostly illegal. However, tacit collusion – looking at your competitors' prices and charging the same – is not illegal. This is one reason why the prices in oligopoly tend to be rigid.</p>	<p>NON-COLLUSIVE OLIGOPOLY</p>  <p>The graph shows Price (\$) on the vertical axis and Quantity on the horizontal axis. It includes curves for Marginal Cost (MC), Marginal Revenue (MR), and Demand (D = AR). Two marginal cost curves, MC1 and MC2, are shown. The equilibrium quantity is Q, where MR = MC1 = MC2. The price is P, where P = D = AR. Points a, b, and c are marked on the graph: 'a' is at (Q, P) on the demand curve, 'b' is at (Q, P) on the MC1 curve, and 'c' is at (Q, P) on the MC2 curve. A dashed line represents a kinked demand curve.</p> <p>Non-collusive oligopoly exists when the firms in an oligopoly do not collude and so have to be very aware of the reactions of other firms when making pricing decisions. One way of attempting to explain the situation in a non-collusive oligopoly is the kinked demand curve.</p>
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NON-PRICE COMPETITION

Since firms in oligopoly tend not to compete in terms of price, the concept of **non-price competition** becomes important. There are many kinds of non-price competition, e.g. the use of brand names, packaging, special features, advertising, sales promotion, personal selling, publicity, sponsorship deals and special distribution features, such as free delivery and after-sales service.

Oligopoly is characterized by very large advertising and marketing expenditures as firms try to develop brand loyalty and make demand for their products less elastic. Some may argue that this represents a misuse of scarce resources. It could also be argued that competition among the large companies results in greater choice for consumers.

There are three reasons why prices are rigid.

1. Firms are afraid to raise prices above the current market price, because other firms will not follow and so they will lose trade, sales, and probably profit.
2. Firms are afraid to lower their prices below the current market price, because other firms will follow, undercutting them, and so creating a **price war** that may harm all the firms involved.
3. The shape of the MR curve means that if marginal costs were to rise, then it is possible that MC would still equal MR and so the firms, being profit maximizers, would not change their prices or outputs. This can be seen in the diagram. If we assume that the firm is operating on MC₂, then it is maximizing profits by producing Q and selling at P. Marginal costs could rise as high as MC₁ and the firm would still be maximizing profits by producing at Q and charging P. Thus, the market remains stable, even though there have been significant price changes.

Revision – Aggregate demand and aggregate supply

Aggregate demand (AD): The total spending on goods and services in a period of time at a given price level. It is made up of consumption, investment, government spending and net export expenditure.

Consumption: The total spending by consumers on domestic goods and services.

Investment: The addition of capital stock to the economy.

Net exports: The value of export revenues minus import expenditure over a period of time.

Aggregate supply (AS): The total amount of goods and services that all industries in the economy will produce at every given price level.

Aggregate demand (AD)

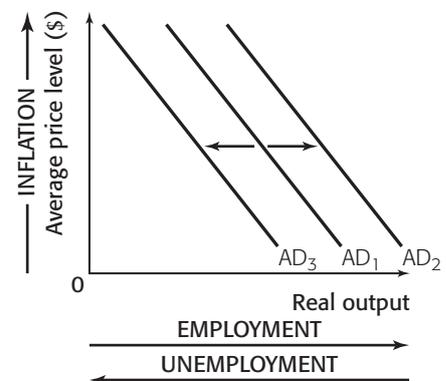
AD measures the demand for all goods and services at different price levels and so it shows the relationship between the **average price level** and **real output**.

The **components of AD** are consumer spending (C), investment expenditure by firms (I), government spending (G), and the expenditure by foreign residents on the country's exports (X) minus domestic expenditure on imports (M). AD is usually shown by the equation: $AD = C + I + G + (X - M)$. **The components set the position of the AD curve.**

The AD curve shows total demand in the economy at different average price levels. Since the vertical axis measures average prices, it can be said to be measuring inflation. The horizontal axis measures national output, which means that any increase is likely to require more labour and so it may be said to be 'measuring' employment.

We must remember that there is a **trade-off** between inflation and unemployment on the AD curve.

The **determinants of AD** change the components of AD and so shift the AD curve to the right or left.



Component	Causes of changes in components			
Consumption	Changes in interest rates	Changes in income	Changes in wealth	Changes in consumer confidence
Investment	Changes in interest rates	Changes in the level of national income	Technological change	Changes in business confidence
Government spending*	Changes in interest rates	Changes in the goals of the government		
Net exports	Changes in interest rates and so exchange rates	Changes in domestic and foreign incomes	Changes in demand for imports	Changes in demand for exports

* Governments use demand-side policies to shift the AD curve to the left or right. These policies may be fiscal policies or monetary policies. (See the revision sheet on demand-side and supply-side policies.)

Short-run aggregate supply (SRAS)

The SRAS curve is upward sloping, i.e. the higher the level of prices, the more producers will be prepared to produce. This is because higher output will involve higher marginal costs. If firms face rising marginal costs, they will need to receive higher prices to encourage them to produce more.

Factors that cause the SRAS curve to shift are known as **supply shocks**. **The SRAS curve can only be shifted by factors that change the costs of production.** The most common examples would be changes in:

- wage rates
- the cost of raw materials
- the price of imports
- government policy.

Long-run aggregate supply (LRAS)

There are two major views relating to the shape of the LRAS. The different beliefs about the shape of the LRAS curve lie at the basis of controversies about appropriate policies to be followed by governments.

1 The new-classical view (monetarist or free market view)

These economists argue that the LRAS curve does not respond to changes in AD in the long run and is determined completely independently of demand. **Its position depends upon the quantity and productivity (quality) of factors of production.** An expansion of AD will always lead to demand-pull inflation and will not, in the long run, lead to growth in output and thus employment. So new-classical economists argue that national output may only be increased by adopting **supply-side policies** to shift the LRAS to the right. (See the diagram on the left below.)

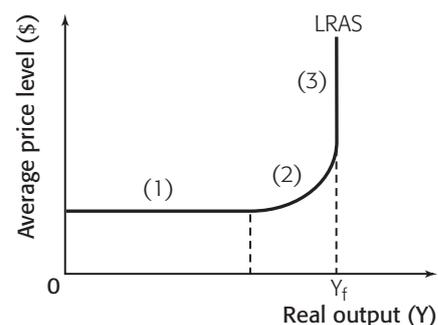
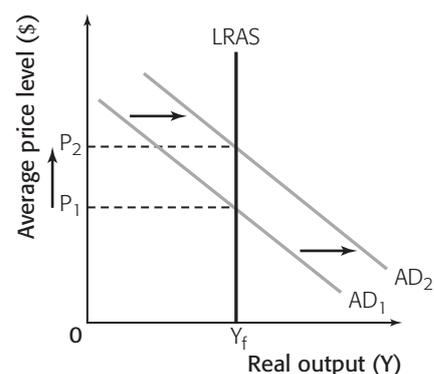
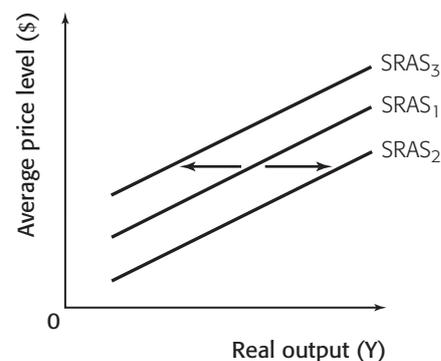
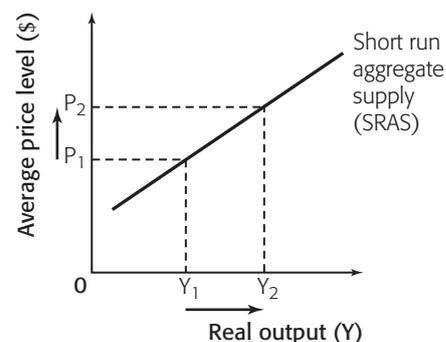
2 The Keynesian view (interventionist view)

There are a number of views held in this 'camp', but we will focus on one, the moderate view. The shape of the curve that is known as the Keynesian LRAS shows three possible phases. These are shown in the diagram on the right above as regions (1), (2), and (3).

In region 1, the LRAS is perfectly elastic. Producers in the economy can raise their level of output without higher average costs, because of 'spare capacity' in the economy.

In region 2, as the economy approaches its potential output (Y_f), and the spare capacity is used up, the available factors in the economy become more scarce. As producers increase output, they bid for the increasingly scarce factors and prices begin to rise.

In region 3, when the economy is at full capacity, all factors are being used and so output cannot increase. Thus, LRAS is perfectly inelastic.



Unemployment: The situation that exists when the number of people who are actively looking for work exceeds the number of jobs available.

The number unemployed: Those of working age who are without work, but who are available for work at the current wage rates.

The labour force: Those in employment plus those unemployed.

The unemployment rate: The number unemployed divided by the labour force, times 100.

Flow concept: Unemployment is a flow. The number of people unemployed may stay the same, but the actual people involved will always be changing as some people gain jobs and others lose them.

Equilibrium unemployment: Unemployment that exists when there is no general disequilibrium in the economy. It consists of frictional unemployment, structural unemployment and seasonal unemployment.

Disequilibrium unemployment: Unemployment resulting from real wages in the economy being above the equilibrium level.

Demand deficient unemployment: Unemployment that exists as a result of a cyclical downturn in the economy, where the aggregate demand for labour falls.

Real-wage unemployment: Unemployment that exists if a government minimum wage or trade unions prevent the wage from falling to equilibrium, and so there is excess supply of labour.

Supply-side policies: Policies designed to shift the long-run aggregate supply (LRAS) curve to the right. There are two types, interventionist policies and market-oriented policies. Main weakness of supply-side policies is that they take time to have effect. Main weakness of interventionist policies is that they are expensive. Main weakness of market-oriented policies is that they create greater income inequality.

Demand-side policies: Policies designed to shift the aggregate demand (AD) curve in order to expand or contract economic activity. There are two types, fiscal policies, which alter the levels of direct taxation and government expenditure, and monetary policies, which alter the levels of interest rates and money supply.

Why do we worry about unemployment?

There are a number of costs caused by unemployment.

Costs to the economy

- The most obvious is the loss of output to the economy. The actual output of the economy is below the potential output and the output lost can never be regained.
- The longer people remain unemployed, the more deskilled they become. This reduces potential output.

Costs to the government

- The government loses tax revenues.
- The government incurs extra costs of supporting the unemployed, even if it is only in terms of administrative costs.

Costs to society

- There is some evidence that higher unemployment leads to increased crime and vandalism.

Costs to individuals

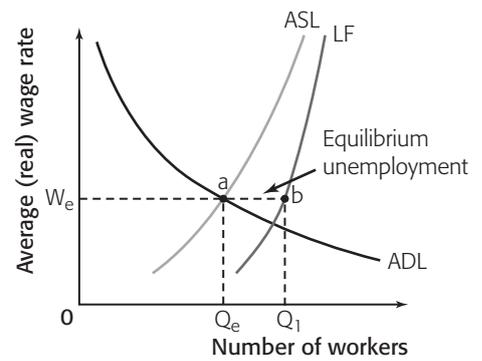
- There is a direct financial cost to the unemployed themselves, measured as the difference between their previous wage and any unemployment benefit received.
- There are personal costs for the unemployed in terms of stress-related illness and family problems caused by the strain of being unemployed.

What causes unemployment?

Equilibrium unemployment

There are three types of equilibrium unemployment.

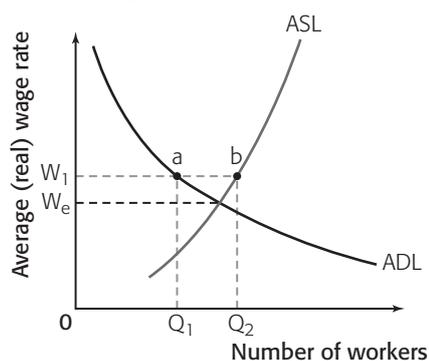
1. **Frictional unemployment** occurs when people leave their jobs and are unemployed while they are looking for a new job, or just having a break from working.
2. **Structural unemployment** is where unemployment occurs because the structure of the economy has changed. This may be a change in the pattern of demand, or a change in the methods of production. If the changes cause unemployment in a specific geographical region, then this is known as **regional structural unemployment**.
3. **Seasonal unemployment** occurs when the demand for labour fluctuates with the seasons of the year.



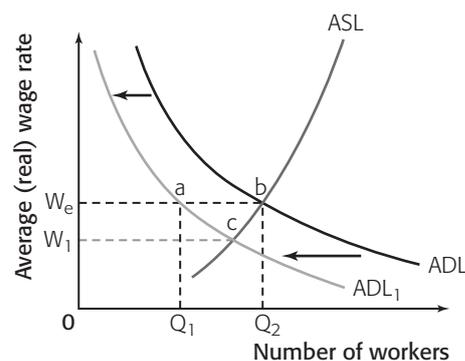
What causes unemployment?

Disequilibrium unemployment

Real-wage unemployment



Demand-deficient unemployment



There are two main types of disequilibrium unemployment.

1. **Real-wage (classical) unemployment** occurs when trade unions push wages above the market-clearing level, or when the government introduces a minimum wage that is above the market-clearing level. This is **ab** in the diagram above.
2. **Demand-deficient (cyclical/Keynesian) unemployment** is where unemployment occurs because AD in the economy has fallen (recession), and so the demand for labour has also fallen. The unemployment is longer if wages are 'sticky downwards' and so do not adjust. This is **ab** in the diagram above.

How do we cure unemployment?

EQUILIBRIUM UNEMPLOYMENT – CAN ONLY BE CURED BY SUPPLY-SIDE POLICIES, WHICH SHIFT THE LONG-RUN AGGREGATE SUPPLY (LRAS) CURVE TO THE RIGHT.

Frictional unemployment – Improve information flows about available jobs (interventionist policy) or lower unemployment benefits (market-based policy).

Structural unemployment – Provide education that makes people more occupationally flexible, provide retraining for workers, give subsidies to firms to provide training, give subsidies to firms to employ the long-term unemployed, give subsidies to encourage firms to go to certain areas of the country (interventionist policies) or reduce unemployment benefits, deregulate labour markets to make them more flexible (market-based policies).

Seasonal unemployment – Improve information flows so that people can find jobs in the off-season, give grants to encourage the growth of industries that work in different seasons (interventionist policies)/lower unemployment benefits (market-based policy).

DISEQUILIBRIUM UNEMPLOYMENT

Real-wage (classical) unemployment – If trade unions are preventing the labour market from clearing, then the government should pass laws to reduce the power of the trade unions (market-based policy). If the government is preventing the labour market from clearing, then the minimum wage should be reduced or removed (market-based policy).

This may also be cured by an expansionary demand-side policy, but this does not really cure the actual cause of the ‘problem’.

Demand-deficient (cyclical) unemployment – The government can intervene to bring about an increase in AD through the use of an expansionary fiscal or monetary policy.

Which are the most effective policies?

Remember that it depends upon the type of unemployment involved. However, the types of equilibrium unemployment (frictional, structural and seasonal) may ONLY be cured by supply-side policies.

Real-wage unemployment may be cured by supply-side or expansionary demand-side policies, but the demand-side policies do not cure the actual cause of the unemployment.

Demand-deficient unemployment may be cured by expansionary demand-side policies.

The use of demand-side policies may have bad effects elsewhere in the economy. For example, if interest rates are lowered, this may lead to inflation and a fall in the external value of the currency (the exchange rate). Furthermore, there is no guarantee that expansionary monetary policy will be effective in raising AD. If consumer and business expectations about the future are pessimistic, then lower interest rates may not necessarily lead to increased AD.

Inflation: A sustained rise in the general level of prices (usually retail prices) and a fall in the value of money. Note that this is not a fall in the exchange rate; it is the purchasing power of money that has fallen.

Inflation rate: It is usually measured by governments using a retail price index (RPI). The rate of inflation is the percentage increase in that index over the previous 12 months.

Inflation measures: Inflation is sometimes measured using other prices, such as commodity prices, food prices, house prices, import prices, and so on.

Deflation: A sustained fall in the general level of prices (usually retail prices) and a rise in the value of money.

Demand-pull inflation: Occurs as a result of increasing aggregate demand (AD) in the economy.

Cost-push inflation: Occurs as a result of an increase in the costs of production in an economy, leading to a fall in short-run aggregate supply (SRAS).

Supply-side policies: Policies designed to shift the long-run aggregate supply (LRAS) curve to the right. There are two types, interventionist policies and market-oriented policies. The main weakness of supply-side policies is that they take time to have effect. The main weakness of interventionist policies is that they are expensive. The main weakness of market-oriented policies is that they create greater income inequality.

Demand-side policies: Policies designed to shift the AD curve in order to expand or contract economic activity. There are two types, fiscal policies, which alter the levels of direct taxation and government expenditure, and monetary policies, which alter the levels of interest rates and money supply.

Why do we worry about inflation and deflation?

Consequences or costs of inflation

- It harms those on fixed incomes or those who do not have bargaining power and so their pay rises do not keep up with the inflation rate.
- It harms those who save and benefits those who borrow.
- It redistributes wealth to those with assets, e.g. property, that rise in value particularly rapidly during periods of inflation.
- It causes uncertainty among the business community and so there is a tendency not to invest.
- It tends to worsen the balance of payments. Export prices become relatively more expensive and imports become relatively cheaper. The outcome depends upon the price elasticity of demand (PED) for exports and imports.
- Interest rates tend to be forced up so that the 'real' rate remains positive.
- Resources are wasted in coping with the effects of inflation, e.g. constant re-pricing, accountants and other financial experts having to be employed by companies in order to cope with the uncertainties.
- Conflict is often caused when pay negotiation takes place.

Consequences or costs of deflation

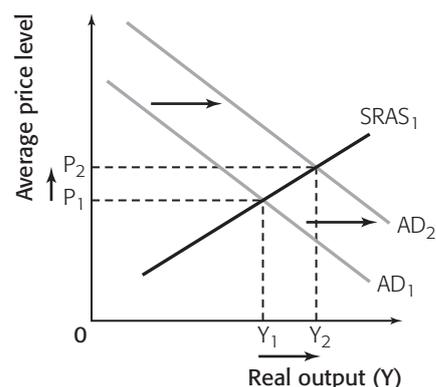
- It leads to deferred spending by consumers and firms.
- It leads to low investment by firms, which then has implications for economic growth.
- It benefits lenders and harms borrowers.
- It may well improve the balance of payments, depending upon the price elasticity of demand for exports and imports.
- Interest rates tend to be very low.
- It redistributes wealth from those with assets to those who are earning high incomes or who have high cash balances.

What causes inflation and deflation?

Demand-pull inflation

This is when inflation originates from rightward shifts in aggregate demand (AD). As we can see above, if AD rises, firms will respond partly by raising prices and partly by raising output. Just how much prices rise will depend upon the slope of the short-run aggregate supply (SRAS) curve. AD shifts from AD_1 to AD_2 . Prices rise from P_1 to P_2 , and output rises from Q_1 to Q_2 . The steeper the SRAS curve, the more prices will rise and the less output will increase. The SRAS curve will tend to be steeper as the economy approaches the peak of the trade cycle, i.e. as actual output gets closer to potential output.

Demand-pull inflation tends to be associated with a booming economy. Thus, it is a counterpart of demand-deficient unemployment. When the economy is in recession, demand-deficient unemployment will be high, but demand-pull inflation will be low. When the economy is in boom, the opposite is to be found.



What causes inflation and deflation?

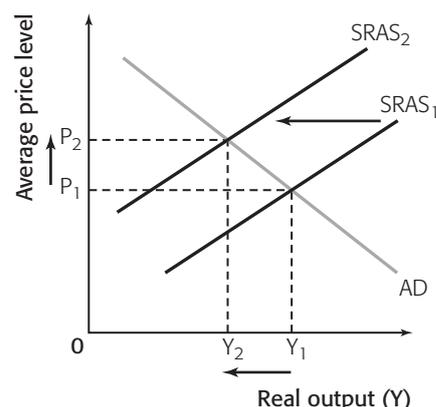
Cost-push inflation

This is when inflation originates from leftward shifts in aggregate supply (AS). It is also known as supply-side inflation.

If firms face a rise in costs, they will respond partly by raising prices and passing the costs on to consumers, and partly by cutting back on production. This is shown in the diagram above. SRAS shifts from $SRAS_1$ to $SRAS_2$. Prices rise from P_1 to P_2 and output falls from Q_1 to Q_2 . The less elastic (steeper) the AD curve, the more prices will rise and the less output will decrease. Producers are able to pass on more of the cost increases. With demand-pull inflation, output and hence employment tend to rise. With cost-push inflation, output and hence employment tend to fall.

The rises in costs may have different origins. The origins enable us to differentiate different types of cost-push inflation.

- **Wage-push inflation** is where trade unions push wages up, independently of the demand for labour.
- **Import-price-push inflation** is where import prices rise independently of the level of AD, e.g. the oil price rises of 2007.



- **Tax-push inflation** is where increased taxation adds to the cost of living, e.g. when VAT was raised from 15% to 17.5%.
- **The exhaustion of natural resources** is where major natural resources become depleted and so their prices rise and the AS curve shifts to the left, e.g. with the gradual running down of North Sea oil production for the UK or with sea pollution and thus falls in fishing stocks.

Causes of deflation

There are two types (causes) of deflation.

1. **'Good' deflation** is productivity-driven and comes about as costs and prices are pushed lower by improvements in productivity.
2. **'Bad' deflation** reflects a sharp slump in demand, excess capacity and a shrinking money supply (as in the USA in the 1930s).

How do we cure inflation and deflation?

Demand-pull inflation

The appropriate policy is to reduce AD. Thus, the government could use deflationary fiscal policy (increase direct taxes and reduce government spending) and/or deflationary monetary policy (raise interest rates and reduce the money supply).

Cost-push inflation

Deflationary demand-side policies may be used, but they will result in lower national output and are likely to cause unemployment to rise. Thus, demand-side policies are ineffective and supply-side policies are appropriate. However, when inflation does occur, it is difficult to distinguish between the demand-pull and cost-push factors, and so policy makers are likely to use a mixture of solutions.

Deflation

This only really applies if the deflation is 'bad' deflation, and then there is a need for demand-side policies, as described above, to shift the AD curve to the right, thus reducing the downward pressure on prices. Although this will expand the economy and improve employment, it may also lead to inflation, if the process goes too far.

Revision – Demand-side and supply-side policies

Supply side policies are designed to increase LONG-RUN AGGREGATE SUPPLY (LRAS), also known as the full employment level of output.

Advantages of supply-side policies

- **Lower inflation** – shifting aggregate supply (AS) to the right will cause a lower price level. By making the economy more efficient supply-side policies will help reduce cost-push inflation.
- **Lower unemployment** – supply-side policies can help reduce structural, frictional and real-wage unemployment and therefore help reduce the natural rate of unemployment.
- **Improved economic growth** – supply-side policies will increase economic growth by increasing AS.
- **Improved trade and balance of payments** – firms will become more competitive so they will be able to export more.

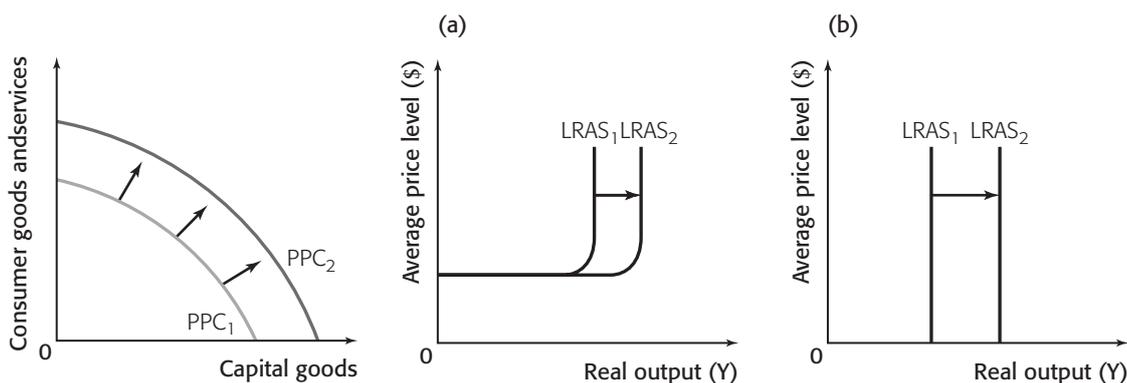
We put such policies into two categories: interventionist and market-oriented.

INTERVENTIONIST	How?	Disadvantages/Limitations
Education and training to: <ul style="list-style-type: none"> • raise levels of human capital • make labour more flexible to cope with changing structure of economy. 	The government provides education, gives incentives to firms to do on-the-job training and finances apprenticeship programmes.	Interventionist supply-side policies are costly (so there is an opportunity cost for the government, as it means that the money cannot be spent on the next best alternative). Such policies can only be effective over the longer term. <i>(Do NOT confuse interventionist with Keynesian when it comes to supply-side policies. ALL economists support the use of interventionist supply-side policies, no matter what their perspective.)</i>
Research and development (R&D) to: <ul style="list-style-type: none"> • develop new technologies or production techniques • improve efficiencies. 	R&D takes place in government research institutions. Finance is provided for R&D in universities. There are tax breaks for firms to give them more incentive to spend on R&D.	
Improved infrastructure to: <ul style="list-style-type: none"> • allow for better transportation linkages in the economy • allow for better telecommunications linkages in the economy. Infrastructure is what enables economic activity to take place	Government spending on infrastructure.	

MARKET-ORIENTED		
Reduction in direct taxes (income tax)	<p>People will have greater incentive to work hard, become more productive or join the labour force if they know that they can keep a larger share of their income.</p> <p><i>(Note that cuts in income taxes are both a supply-side policy and a demand-side policy.)</i></p>	There may possibly be less income for governments (unless the Laffer curve hypothesis is to be believed).
Reduction in direct taxes on firms (corporate tax)	<p>If firms pay less tax, they will have more profits left for investment.</p> <p><i>(Note that cuts in corporate taxes are both a supply-side policy and a demand-side policy.)</i></p>	There may possibly be less income for governments (unless the Laffer curve hypothesis is to be believed).
<p>Labour market reform may include:</p> <ul style="list-style-type: none"> • reduction in trade union power • reduction in minimum wages <i>(Note that the government would not actually have to reduce the nominal wage, it could just leave it at the same level. Inflation would erode the real value of the minimum wage)</i> • reduction in unemployment benefits. 	<p>The job of unions is to protect their own workers. This means that the number of working hours is limited, and the ability to hire and fire workers is limited. Without unions, firms may be able to increase output.</p> <p>There will be lower costs of production for firms.</p> <p>Without unemployment benefits, unemployed workers will have greater incentive to take on available jobs.</p>	<p>A lower level of trade union power is likely to result in less job security and worsening conditions for workers.</p> <p>There will be a reduction in living standards for workers on the minimum wage and for the unemployed.</p>
Deregulation	Regulations raise the costs for firms.	There may be negative effects on labour or the environment.
Deregulation of financial markets	More firms are allowed to supply financial services, so there is more competition and borrowing costs are reduced.	<p>Too much lending will have an inflationary effect.</p> <p>Too much risky lending will mean that people are unable to repay.</p>
Privatization	Free market economists argue that resources are most efficiently allocated by market forces, and so advocate privatization to increase efficiency.	Some firms are nationalized so that they can provide an essential service, e.g. water, electricity or railways, at lower prices and in areas where there might not be sufficient demand for private firms to operate.

Long-run aggregate supply (LRAS) – what shifts it?

A shift of the LRAS curve to the right is equivalent to an outward shift of the PPC curve, as shown below:

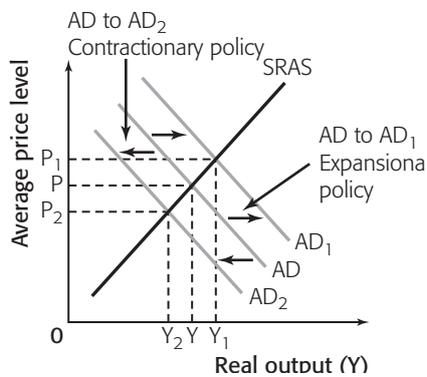


A shift in the LRAS can be shown from either a neo-Keynesian perspective, as in (a) above, or a neo-classical perspective, as in (b).

The LRAS curve will shift to the right if there is an improvement in the quantity and/or quality of the factors of production in the economy.

Demand-side policies – what do they do?

- They are used to shift the AD curve.
- They can expand the economy (expansionary policies).
- Or they can shrink the economy (contractionary policies).



- An expansionary policy increases output and employment (Y to Y_1) and increases inflation (P to P_1).
- A contractionary policy decreases output and employment (Y to Y_2) and decreases inflation (P to P_2).

What types of demand-side policy are there?

Fiscal policy

- Governments alter their own expenditure and taxation to affect the economy.

To expand the economy, the government could reduce direct taxes and increase its spending.

- AD would shift to the right.
- This would help to solve disequilibrium unemployment (demand-deficient unemployment), but would cause demand-pull inflation.

To contract the economy, the government could increase direct taxes and decrease its spending.

- AD would shift to the left.
- This would help to solve demand-pull inflation but would cause disequilibrium unemployment (demand-deficient unemployment).

Monetary policy

- Governments alter the interest rate and/or the supply of money to affect the economy.

To expand the economy, the government could reduce interest rates and increase the money supply.

- AD would shift to the right.
- This would help to solve disequilibrium unemployment (demand-deficient unemployment), but would cause demand-pull inflation.

To contract the economy, the government could increase interest rates and decrease the money supply.

- AD would shift to the left.
- This would help to solve demand-pull inflation but would cause disequilibrium unemployment (demand-deficient unemployment).

What are the problems?

- Demand side policies involve a trade-off.
- Usually, if inflation is improved, unemployment gets worse and vice versa.

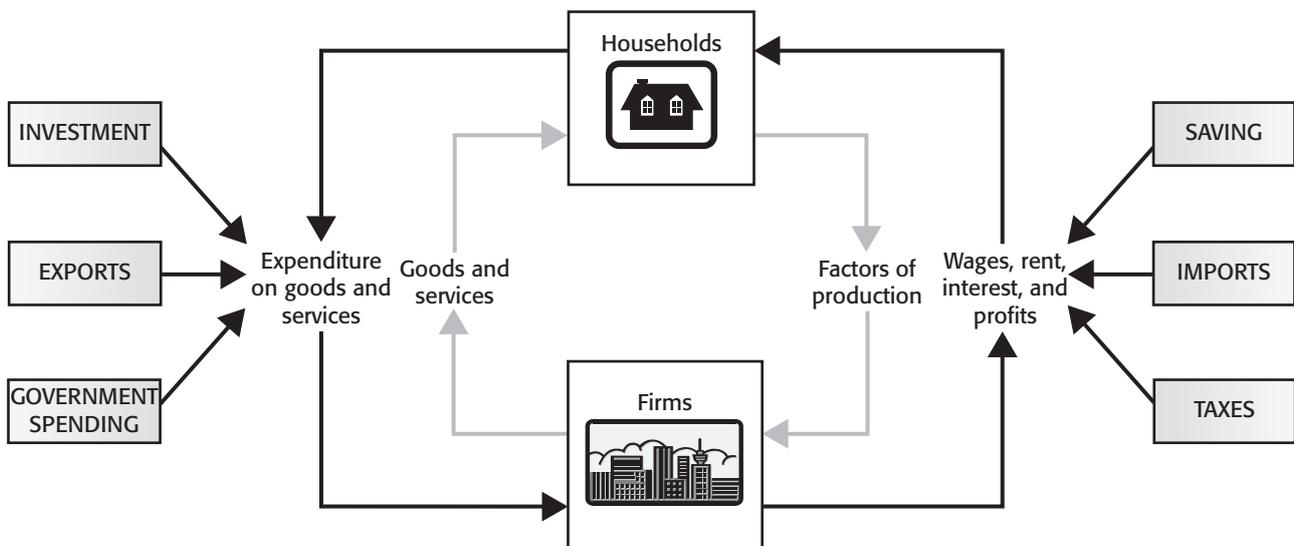
Revision – National income, circular flow, multiplier

The main economic goals

There are usually five economic main aims for government.

1. A steady rate of increase of national output (economic growth)
2. A low level of unemployment
3. A low and stable rate of inflation
4. A favourable balance of payments position
5. An equitable distribution of income.

The circular flow of income model



Households provide the factors of production and receive income. They buy the goods and services produced by the firms which use the income received, and in this way the income circulates throughout the economy.

The **leakages** from the system are savings, taxes and imports. The **injections** are investment, government spending and exports. The economy is in **equilibrium when leakages are equal to injections**.

Measurement of national income

The most commonly used measure of a country's national income is gross domestic product (GDP). There are three different methods that are all used to calculate this figure.

1. **The output method** measures the actual value of the goods and services produced. This is calculated by summing all of the value added by all the firms in an economy. When we say value added, it means that at each stage of a production process, we deduct the costs of inputs, so as not to 'double count' the inputs.

2. **The income method** measures the value of all the incomes earned in the economy.
3. **The expenditure method** measures the value of all spending on goods and services in the economy. This is calculated by summing up the spending by all the different sectors in the economy.

In practice, however, the data that is collected to calculate each of the three values comes from many different and varied sources, and inevitably there will be inaccuracies in the data, leading to imbalances among the final values. Some of these inaccuracies are the result of the timing of the data gathering; often figures have to be revised at later dates when full information is collected.

$$\text{National output} = \text{national income} \\ = \text{national expenditure}$$

Gross domestic product (GDP) is the total of all economic activity in a country, regardless of who owns the productive assets.

Gross national product (GNP) is the total income that is earned by a country's factors of production, *regardless of where the assets are located*.

$$\text{GNP} = \text{GDP} + \text{net property income from abroad}$$

Net national product (NNP) is simply gross national product minus depreciation (capital consumption):

$$\text{NNP} = \text{GNP} - \text{depreciation}$$

If we were to compare the GDP of a country from one year to another, we would have to take into account the fact that prices in the economy are likely to have risen. If prices of goods and services rise (inflation), then this will overstate the value of GDP.

$$\text{Real GDP} = \text{nominal GDP adjusted for inflation}$$

GDP per capita is simply the total GDP divided by the size of the population.

Why gather national income statistics?

- People use the statistics to judge whether or not a government has been successful in achieving its macroeconomic objective of increased growth
- Governments use the statistics to develop policies
- Economists use the statistics to develop models of the economy and make forecasts about the future
- Businesses use statistics to make forecasts about future demand
- The performance of an economy over time can be analysed (as long as *real* data is used)
- People often use national income accounts as a basis for evaluating the standard of living or quality of life of a country's population.

National income statistics are often used as a basis for comparing different countries

Limitations of national income data

There are a number of limitations of national income data, both in terms of the accuracy of the data for making comparisons and in terms of their appropriateness in making conclusions about living standards.

- **Inaccuracies** – data that is used to calculate the various measures of national income come from a vastly wide range of sources,

including tax claims by households and firms, output data and sales data. Figures tend to become more accurate after a lag time as they are revised when additional data is included.

- **Unrecorded or under-recorded economic activity – informal markets** – national income accounts can only record economic activity that has been officially recorded. They don't include any do-it-yourself work or other work done at home. This is perhaps most significant for developing countries, where much of the output does not make it to any recorded market.

There is another category of economic activity that goes unrecorded or under-recorded. This may be referred to as the hidden economy. This includes activity that is unrecorded because the work is illegal, such as drug trafficking. It also includes unrecorded activity that is legal, but that people are doing illegally. For example, if foreign workers who do not have the appropriate work permits do work such as cleaning, building or working in restaurants, then their work will go unrecorded. It also includes work that is not recorded because people want to evade paying taxes.

- **External costs** – GDP figures do not take into account the costs of resource depletion.
- **Other quality of life concerns** – GDP may grow because people are working longer hours or taking fewer holidays. While people may earn higher incomes as a result, they might not actually enjoy higher standards of living. GDP accounting does not include free activities such as volunteer work or people caring for the elderly and children at home.
- **Composition of output** – it is possible that a large part of a country's output is in goods that do not benefit consumers, such as defence goods or capital goods.

The multiplier [HL]

If a government decides to fill a deflationary gap by increasing its own spending, the final increase in aggregate demand (AD) will actually be greater than the amount of spending. In fact, any increase in AD will result in a proportionately larger increase in national income. This is explained by the **multiplier effect**. Government spending and business investment are injections into the circular flow of income and any injections are multiplied through the economy as

people receive a share of the income and then spend a part of what they receive.

For example, a government spends \$100 million on a school building project, so \$100m ends up as income in the pockets of people who provide the factors of production for the building project. What do the people do with this income? Some of it goes back to the government as taxes (marginal rate of taxation or $mrt = 20\%$, for example), some of it is saved (marginal propensity to save or $mps = 10\%$, for example), some of it is spent on foreign goods and services (marginal propensity to import or $mpm = 10\%$, for example) and the rest is spent on domestically produced goods and services (marginal propensity to consume or $mpc = 60\%$, for example). This last expenditure goes to another group of people, who pay taxes, save and buy imports and then spend the rest on domestic goods and services.

The value of the multiplier can be calculated by using either the marginal propensity to consume (mpc) or the value of the marginal propensity to withdraw (mpw). The mpw is the value of the

marginal propensity to save (mps) plus the marginal rate of taxation (mrt) plus the marginal propensity to import (mpm).

$$\text{The multiplier} = \frac{1}{1 - mpc}$$

or

$$\frac{1}{mps + mpm - mrt} = \frac{1}{mpw}$$

From the example above, where the $mpc = 0.6$:
the multiplier is: $1/1-0.6 = 1/0.4 = 2.5$

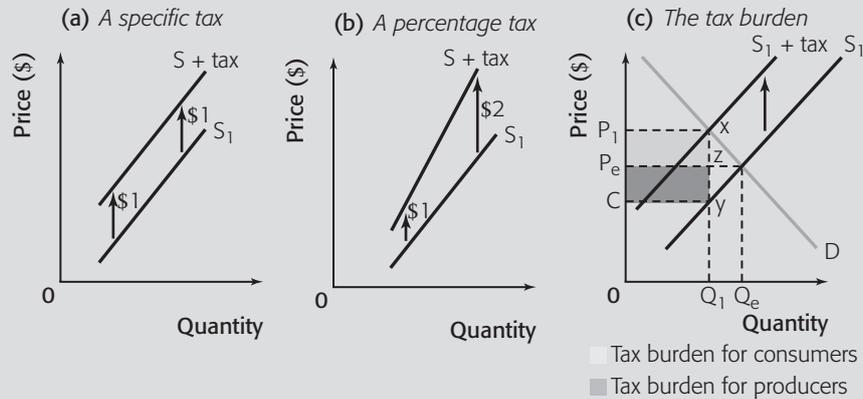
or

**The $mps = 0.1$, $mrt = 0.2$ and the $mpm = 0.1$,
the multiplier is: $1/(0.1 + 0.1 + 0.2) = 1/0.4 = 2.5$**

Any change in any of the withdrawals from the circular flow will obviously result in a change in the economy's multiplier. If the taxation rate increases, for example, then the value of the multiplier will fall. If the marginal propensity to import falls, then there will be an increase in the multiplier.

Indirect tax: Expenditure tax on goods and services, e.g. the Mehrwertsteuer in Austria. It is shown as a decrease in supply. (*Microeconomics*)

Ad valorem tax: An indirect percentage tax. It is shown as a divergent shift of a supply curve, with a higher tax paid at higher prices of the product. (*Microeconomics*)



Flat rate (specific tax): A fixed amount indirect tax, where the tax is the same regardless of the price of the product. It is shown as a parallel shift of the supply curve. (*Microeconomics*)

Incidence of tax: This refers to the 'burden' of an indirect tax – i.e. who pays more of an indirect tax, producers or consumers. (*Microeconomics*)

Direct tax: Tax paid on income. Households pay income tax, businesses pay corporate tax. (*Macroeconomics*)

Progressive tax: A system of taxation where the higher the income, the higher the marginal and average rate of tax paid. Most countries have a progressive direct tax system as a means of redistributing income from high-income earners to lower-income earners. (*Macroeconomics*)

Regressive tax: The higher the income, the lower the average rate of tax paid. All indirect taxes are regressive. For example, a 1 euro tax on a package of cigarettes will make up a lower proportion of income for a high-income person than for a lower-income person. Direct taxes are never regressive. (*Macroeconomics*)

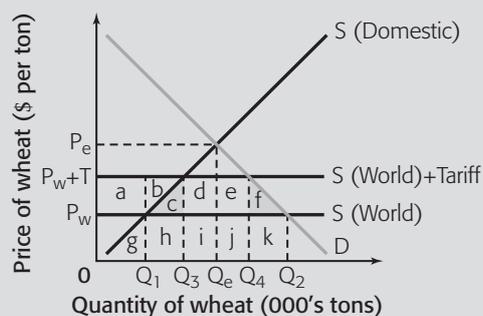
Proportionate tax: A system of direct taxation where people at all income levels pay the same average tax, e.g. all people pay 15% of income. (*Macroeconomics*)

Fiscal policy: The set of government policies regarding taxation and government spending. Fiscal policy is used to manage aggregate demand (AD) in the economy. (*Macroeconomics*)

Expansionary fiscal policy: Government policy to raise AD in the economy by lowering taxes and increasing government spending. (*Macroeconomics*)

Contractionary fiscal policy: Government policy to lower AD in the economy by raising taxes and decreasing government spending. (*Macroeconomics*)





Transfer payments: Payments from the government for no economic output, in order to redistribute income, e.g. unemployment benefits, pensions. (*Macroeconomics*)

Tariffs: A tax on imports to protect domestic producers. The diagram is drawn differently from a normal tax diagram as we assume that there are two different supply curves – a normal supply curve representing the amount that domestic producers are willing and able to supply, and a perfectly elastic world supply curve indicating that there is an infinite supply of the good from global suppliers. (*International trade*)

Why do governments tax?

You need to know all four items in this list, not just three!

1. To reduce the quantity of products the production or consumption of which causes negative externalities (i.e. to correct market failure).
2. To raise money for government spending.
3. To manage the level of AD in the economy. (Keynesian demand management.)
4. To redistribute income.

1. To correct market failure

Goods called de-merit goods, e.g. cigarettes, alcohol and petrol, create negative externalities of consumption. According to the law of demand, an increase in their prices due to a tax will cause a reduction in quantity demanded.

Since the demand for such goods tends to be inelastic due to their necessity or consumers' addiction, the burden of tax will fall mainly on the consumers.

This is good in the sense that it doesn't penalize the producers overly. On the negative side, because the demand is inelastic, the fall in quantity demanded will be proportionately smaller than the change in price and so the attempt to reduce consumption considerably may be unsuccessful, particularly in the short run where demand is known to be less elastic. However, such indirect taxes may be useful in preventing new consumers, e.g. young people, from starting to consume such goods. Their demand is likely to be more elastic, as they have not yet developed addictions, and such products would consume a larger share of their income. In the longer run, then, the quantity demanded would fall as fewer new consumers take up the habits.

Another concern is that if governments raise taxes too much, it is likely that black markets will develop as consumers seek to avoid paying taxes.

It is arguable as to how much governments actually do want to reduce consumption of such goods. Taxes on de-merit goods create a large amount of government revenue, which can be used for necessary government spending on infrastructure, health and education, and it can also be used to fund campaigns to reduce consumption of such goods. Sadly, the government revenue may not be helpful to third parties who have already had to pay the external costs.

2. To raise money for government spending

In order to finance government spending on infrastructure, health care, education, transfer payments, defence, etc., taxes must be paid.

3. To manage the level of AD

Governments who adopt a Keynesian demand management approach use the tool of taxation (part of fiscal policy) to manage the level of AD in the economy.

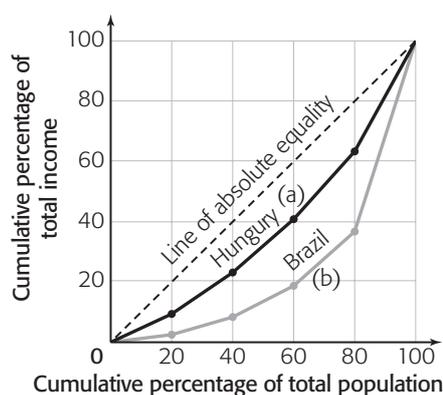
This involves:

- lower taxes to encourage spending and investment when the economy is below the full employment level of income and there is demand-deficient unemployment
- higher taxes to reduce spending when there is demand pull inflationary pressure.

The key issue here is that it is very difficult to change taxes (there are huge legislative steps to go through), and it is most unpopular to raise taxes! This means that monetary policy is more effective at managing AD than fiscal policy. Monetary policy is also considered to be more effective because as long as the central bank of a country is independent, it will make decisions based on the economy, not based on political objectives.

4. To redistribute income

Market systems result in some degree of inequality – demand and supply in labour markets mean different levels of income. The degree of inequality may be measured using the Gini index and Lorenz curve.



A fifth macroeconomic goal is said to be the achievement of equity (not equality) in the economy. This is a very normative (subjective) area of economics. Redistribution of income is achieved through the tax system where government revenue is used to finance transfer payments such as child allowances, unemployment insurance, pensions and other benefits.

Here are some arguments against higher taxes.

- A key feature of the market system is **incentives**. Higher taxes may create a disincentive effect because if people know that higher income means that they have to pay higher marginal rates of taxes, then they may not be motivated to work harder and get better-paying jobs.
- There is likely to be less entrepreneurial activity without the incentive of higher incomes. Since entrepreneurship is one of the factors of production, then this will have negative supply-side effects on the economy.
- If businesses earn higher profits and this puts them into a higher tax bracket, then they have less incentive to invest to increase capacity.
- There might be a brain drain as high-skilled people leave the economy to go to work in places where they don't pay such high taxes.

It may be difficult for the country to attract foreign direct investment, since multinationals will prefer to work in countries where taxes are lower.

Therefore these all have significant negative supply-side effects on the economy and therefore the growth of potential output. *(Remember that cutting taxes is a supply-side policy to increase aggregate supply (AS); therefore higher taxes might reduce AS).*

This may be referred to as the 'efficiency versus equity' argument. Higher taxes may result in greater equity, but the negative consequence might be a less efficient allocation of resources.

Free trade: Trade that takes place between countries when there are no barriers to trade put in place by governments or international organizations.

Protectionism: The putting into place of trade barriers by governments or international organizations to restrict imports into a country.

Dumping: The selling by a country of large volumes of a commodity, at a price lower than its production cost, in another country.

Tariff: A tax that is charged upon imported goods.

Subsidy: An amount of money paid by the government to a firm, per unit of output.

Quota: A physical limit on the number or value of goods that can be imported into a country.

World Trade Organization (WTO): An international organization that sets the rules for global trading and resolves trading disputes between its member countries.

Arguments for protectionism

- To protect domestic employment – this argument is not very strong, since it is likely that the industry will continue to decline and that protection will simply prolong the process.
- To protect the economy from low-cost labour – this argument goes against the whole concept of comparative advantage.
- To protect an infant (sunrise) industry – developing countries, without access to sophisticated capital markets, can use the infant industry argument to justify protectionist policies.
- To avoid the risks of over-specialization – there are no real arguments against this view. It does not promote protectionism, it simply points out the problems that countries may face if they specialize to a great extent.
- Strategic reasons, e.g. in times of war – in many cases, it is unlikely that countries will go to war or, if they do, that they will be completely cut off from all supplies. Then, it is likely that the argument is being used as an excuse for protectionism.
- To prevent dumping – it is very difficult to prove whether or not a foreign industry has actually been guilty of dumping, or whether there is just a comparative advantage.
- To protect product standards – a valid argument, as long as the concerns are valid.
- To raise government revenue – not an argument for protectionism, but a means of raising government revenue.
- To correct a balance of payments deficit – this will only work in the short **run**.

Arguments against protectionism

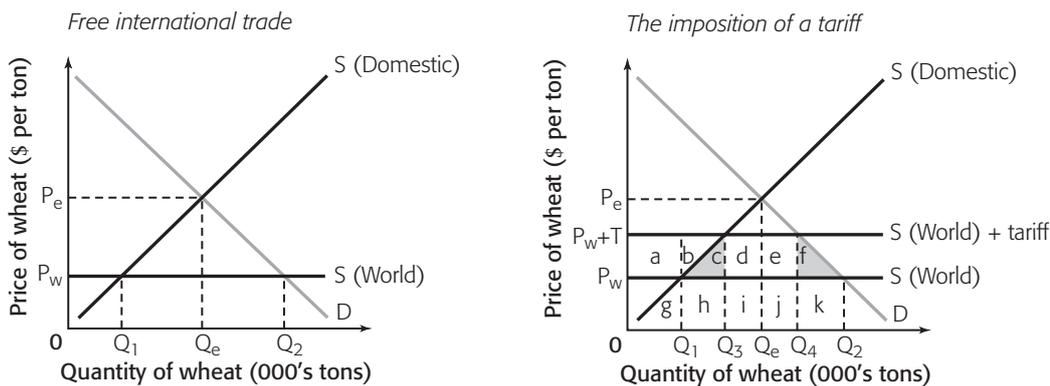
- Protectionism may raise prices to consumers and producers of the imports that they buy.
- Protectionism leads to less choice for consumers.
- Competition will diminish if foreign firms are kept out of a country and so domestic firms may become inefficient, because

they do not have an incentive to minimize costs. In addition, innovation may be reduced for the same reason.

- Protectionism distorts comparative advantage, leading to the inefficient use of the world's resources. Specialization is reduced and this would reduce the potential level of the world's output.
- For the reasons listed above, protectionism may hinder economic growth.

Types of protectionism

The situation where free trade is taking place in a country and there is no protectionism is shown below.



A tariff is a tax that is charged on imported goods. In the case of a tariff, it will shift the world supply curve upwards, since it is placed on the foreign producers of the good and not the domestic producers. This is shown above.

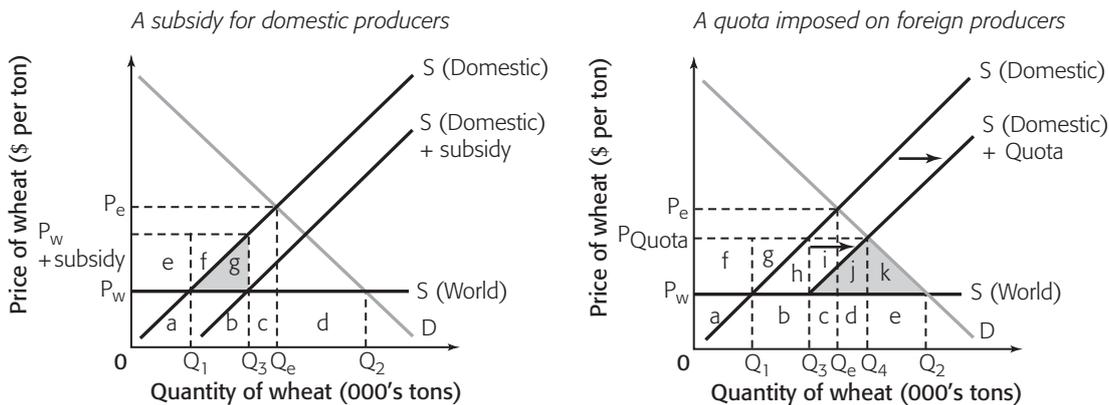
Domestic producers are able to sell more at a higher price and domestic employment will increase. Domestic producers will pay higher prices and consume less. The government will receive revenue from the tariffs paid by the foreign producers. The foreign producers end up selling less at the same price. This will affect employment in the foreign countries.

There is a dead-weight loss of consumer surplus for domestic consumers and there is a dead-weight loss of welfare, because inefficient domestic producers take the place of efficient foreign producers.

A subsidy is an amount of money paid by the government to a firm, per unit of output. In this case, the government is giving a subsidy to domestic producers to make them more competitive and so the effect will be to shift the domestic supply curve downwards by the amount of the subsidy. This is shown below.

Domestic producers are able to sell more at a higher price and domestic employment will increase. Domestic producers will consume the same amount at the same price. The government will have to find the money to pay the subsidies. The foreign producers end up selling less at the same price. This will affect employment in the foreign countries.

There is a dead-weight loss of welfare, because inefficient domestic producers take the place of efficient foreign producers.



A quota is a physical limit on the numbers or value of goods that can be imported into a country. For example, the EU imposes import quotas on Chinese garlic and mushrooms. The imposition of a quota has a peculiar effect on the free trade diagram and this is shown above.

Domestic producers are able to sell more at a higher price and domestic employment will increase. Domestic producers will pay higher prices and consume less. The foreign producers end up selling less at a higher price. This will affect employment in the foreign countries.

There is a dead-weight loss of consumer surplus for domestic consumers and there is a dead-weight loss of welfare, because inefficient domestic producers take the place of efficient foreign producers.

Administrative barriers – when goods are being imported, there are usually administrative processes that have to be undertaken. This may be known as dealing with ‘red tape’. If these processes are lengthy and complicated, then they can act as a restriction to imports.

Health and safety standards and environmental standards – this is where various restrictions are placed upon the types of goods that can be sold in the domestic market, or on the methods used in the manufacture of certain goods. These regulations will apply to imports and may restrict their entry.

Embargoes – in effect, an embargo is an extreme quota. It is a complete ban on imports and is usually put in place as a form of political punishment. For example, the USA has a trade embargo on products from Cuba. Complete embargoes are rare.

Nationalistic campaigns – governments will sometimes run marketing campaigns to encourage people to buy domestic goods instead of foreign ones in order to generate more demand for domestic goods and preserve domestic jobs.

The World Trade Organization (WTO)

The WTO is an international organization that sets the rules for global trading and resolves disputes between its member countries. The WTO was established in 1995 and now has 149 members.

It replaced the General Agreement on Tariffs and Trade (GATT). The WTO, along with its predecessor the GATT, is largely credited with the fact that since 1947, average world tariffs for manufactured goods have declined from approximately 40% to 4%.

All WTO members are required to grant 'most favoured nation' status to one another, which means that, usually, trade concessions granted by a WTO country to another country must be granted to all WTO members.

The aims of the WTO are to administer WTO trade agreements, to be a forum for trade negotiations, to handle trade disputes among member countries, to monitor national trade policies, to provide technical assistance and training for developing countries and to cooperate with other international organizations.

Revision – Reasons for trade, economic integration and terms of trade

The gains from international trade

- Lower prices
- Greater choice
- Access to resources that the country does not possess
- Economies of scale
- Increased competition

Absolute and comparative advantage

A country is said to have an **absolute advantage** in the production of a good if it can produce it using fewer resources than another country. In this case, it is obvious that Australia has an absolute advantage in the production of lamb and China has an absolute advantage in the production of cloth. Australia should specialize in producing lamb and China in producing cloth. This is known as a **reciprocal absolute advantage**.

Country	Kilos of lamb	Metres of cloth
Australia	6	1
China	4	3
Total without trade	10	4

A country is said to have a comparative advantage in the production of a good if it can produce the good at a lower opportunity cost than another country. In simpler words, country A has to give up fewer units of other goods to produce the good in question than does country B.

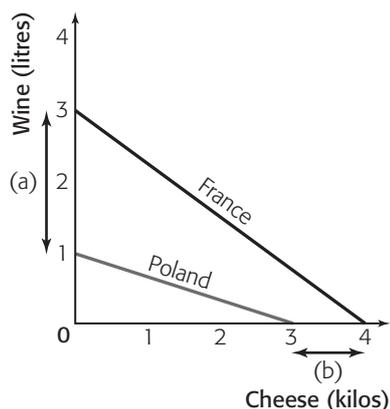
Country	Litres of wine	Opportunity cost of 1 litre of wine	Kilos of cheese	Opportunity cost of 1 kilo of cheese
France	3	4/3 kilos of cheese	4	3/4 litre of wine
Poland	1	3 kilos of cheese	3	1/3 litre of wine

France has an absolute advantage in the production of both goods. However, in terms of comparative advantage, France has a comparative advantage in the production of wine and Poland has a comparative advantage in the production of cheese.

This is because France only has to give up 4/3 kilos of cheese to produce a litre of wine, whereas Poland has to give up 3 kilos, but Poland only has to give up 1/3 litre of wine to produce a kilo of cheese, whereas France has to give up 3/4 litre of wine.

The theory of comparative advantage thus tells us that France should specialize in the production of wine and Poland should specialize in the production of cheese. France will then consume the wine that it wants and use any extra wine to exchange for cheese. In the same way, Poland will consume the cheese that it wants and use any extra cheese to exchange for wine.

The same can be shown on a diagram using production possibilities curves.



When a country has an absolute advantage in producing both goods, as France has here, and the scale of the axes is the same, the comparative advantage for the better producer is in the good where the distance between the production possibilities is greatest, shown by (a) in the diagram, and the comparative advantage for the less-efficient producer is in the good where the distance between the production possibilities is least, shown by (b) in the diagram. Thus, as we know, France has the comparative advantage in producing wine and Poland has the comparative advantage in producing cheese. If two countries face the same opportunity cost, then there is no point in trade taking place.

To a large extent, comparative advantage is based on a country's factor endowments. A country that is 'endowed' with a large amount of arable land may develop a comparative advantage in agricultural products. A country with abundant unskilled labour can develop its comparative advantage in the production of labour-intensive low-skilled manufactured goods. A country with abundant well-educated labour may have a comparative advantage in the output of financial services. A country with beautiful beaches and a favourable climate may develop its comparative advantage in the output of tourist services, illustrating that climate can actually be a factor of production! The abundance of a particular factor will make the price of this factor relatively lower than the price of other factors, thereby allowing the opportunity cost of the goods or services using that factor to be lower than it would be in other countries.

Economic Integration

A **trading bloc** is groups of countries that join together in some form of agreement in order to increase trade between themselves and/or to gain economic benefits from co-operation on some level. The stages of economic integration are:

1. A **preferential trading area (PTA)** is a trading bloc that gives preferential access to certain products from certain countries.
2. A **free trade area** is an agreement made between countries, where the countries agree to trade freely amongst themselves, but are able to trade with countries outside of the free trade area in whatever way they wish, e.g. NAFTA.



3. A **customs union** is an agreement made between countries, where the countries agree to trade freely amongst themselves, and they also agree to adopt common external barriers against any country attempting to import into the customs union e.g. EU.
4. A **common market** is a customs union with common policies on product regulation, and free movement of goods, services, capital and labour, e.g. EU.
5. An **economic and monetary union** is a common market with a common currency, e.g. the Eurozone.
6. **Complete economic integration** This would be the final stage of economic integration, at which point the individual countries involved would have no control of economic policy, full monetary union, and complete harmonisation of fiscal policy.

Terms of trade (TOT)

The TOT is an index that shows the value of a country's average export prices relative to their average import prices. It is calculated by using a simple equation:

$$\text{TOT} = \frac{\text{Weighted index of average export prices}}{\text{Weighted index of average import prices}} \times 100$$

If the value of TOT increases, then we say that there has been an improvement. If it decreases, we say that there has been a deterioration. If the TOT improves, then a given quantity of exports will buy a larger quantity of imports than before.

Short-run causes of changes in the TOT are changes in

- conditions of demand and supply
- relative inflation rates
- exchange rates.

Long-run causes of changes in TOT are

- income changes
- long-run improvements in productivity within a country.

How good is an improvement in TOT? It depends where it comes from. If it is from an increase in the demand for a country's exports, then it is always a good thing and more will be demanded at a higher price. If it is from higher export prices caused by domestic inflation, then it will depend upon the elasticity of demand for exports. For most products, demand is elastic on the foreign trade markets, because they are very competitive. Thus, if export prices rise through inflation, there would be a relatively large fall in demand and thus a fall in total export revenue. Only essential products with inelastic demand, such as oil, would go against this.

Many developing countries, but certainly not all, are heavily dependent upon the exports of one or two commodities for their export revenue. There has been a long-term downward trend in commodity prices for many years. There are a number of reasons for this

- improvements in the technology of their production
- discovery of synthetic replacements
- income inelastic demand for commodities from developed countries
- protectionist policies in developed countries
- miniaturization of products, so less requirement for commodities to make and package the goods.

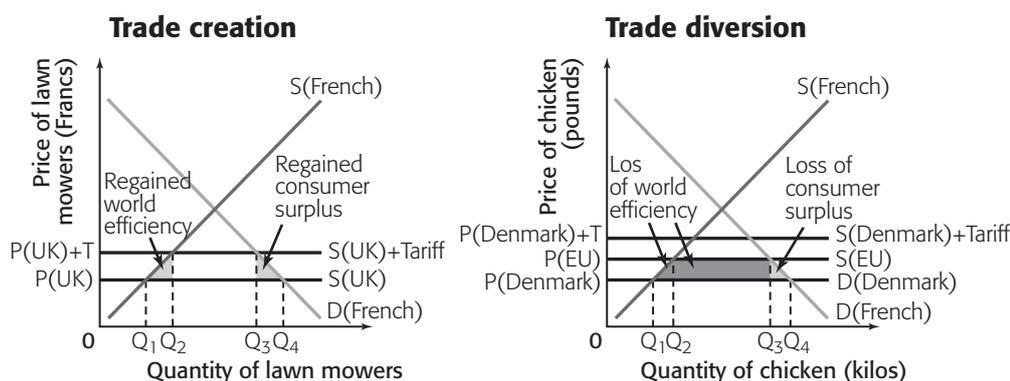
The deterioration in the TOT for developing countries that depend on commodities has several harmful consequences.

- Developing countries have to sell more and more exports in order to buy the same amount of imports. This is bad enough, but in order to do this, the developing countries then increase supply and this tends to push commodity prices down even more. We have a vicious circle.
- Many developing countries have high levels of indebtedness. Falling export prices and thus export revenue makes it harder to service their debt. Indeed, in extreme cases, this leads to countries having to increase their borrowing, thus increasing their levels of indebtedness. Another vicious circle. This vicious circle links to the previous one. In order to pay back their debts, many countries have had to increase their output of the commodities in which they have a comparative advantage. This increases the supply and drives the prices down.
- In order to increase the supply of commodities and gain more export revenue, some developing countries have overused their resources, resulting in negative externalities such as land degradation, desertification, soil erosion and massive deforestation. This is clearly not sustainable in the long run.

Trade creation and trade diversion

Trade creation

Trade creation occurs when the entry of a country into a customs union leads to the production of a good or service transferring from a high-cost producer to a low-cost producer. It is thus, obviously, an advantage of greater economic integration.



Trade diversion

Trade diversion occurs when the entry of a country into a customs union leads to the production of a good or service transferring from a low-cost producer to a high-cost producer. It is thus, obviously, a disadvantage of greater economic integration. This represents a misallocation of the world's resources and represents a disadvantage of economic integration.

Exchange rate: The value of one currency expressed in terms of another, e.g. €1 = US\$1.42.

Fixed exchange rate: An exchange rate regime where the value of a currency is fixed, or pegged, to the value of another currency, e.g. the Yuan has been pegged against the US\$ so that US\$1 = 6.8275 CNY (China Yuan Renminbi).

Floating exchange rate: An exchange rate system where the value of a currency is allowed to be determined solely by the demand for, and supply of, the currency on the foreign exchange market. It is the equilibrium exchange rate.

Managed exchange rate: An exchange rate system where the value of the currency is allowed to float, but with some element of interference from the government. Usually, the central bank sets an upper and lower exchange rate value and then allows the currency to float within those limits, intervening when the exchange rate moves beyond the limits to bring it back within them.

What factors shift the demand for, and supply of, a currency?

The demand for a currency (Assume that we are discussing the euro.)

People will demand, or want to buy, the euro in the foreign exchange market in order to:

- buy European exports of goods and services (and to travel in Europe)
- invest in European firms (portfolio investment or foreign direct investment – FDI)
- save their money in European banks or other financial institutions
- make money by speculating on the currency.

Thus, the demand for the euro will rise if these conditions apply.

- European goods and services are demanded more. This could be because European inflation is lower than that of other economies,, making European goods more competitive; or foreign incomes have risen; or tastes have changed in favour of European goods.
- European investment prospects improve.
- European interest rates increase, making it more attractive to save in European financial institutions.
- People think the value of the euro will rise in the future, so they buy it now.

The supply of a currency (Assume that we are discussing the euro.)

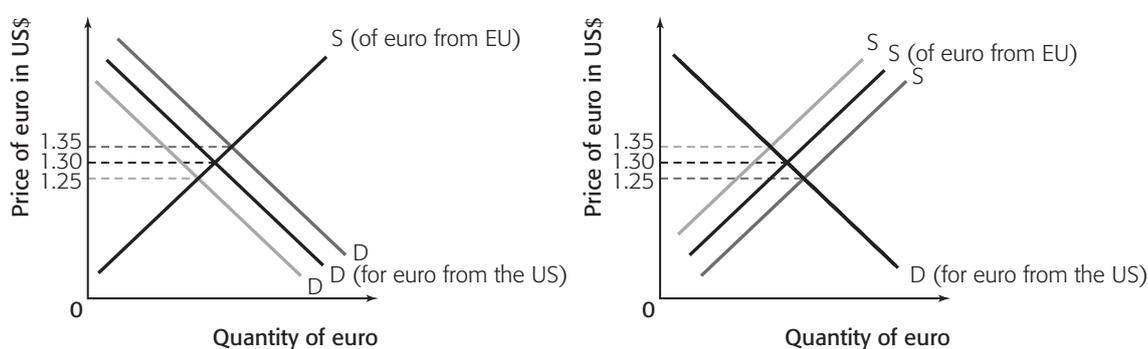
The euro will be supplied on the foreign exchange market in order for:

- Europeans to buy overseas goods and services (and to travel outside Europe)
- Europeans to invest in foreign firms

- Europeans to save their money in foreign banks or other financial institutions
- people who hold euro to speculate on either the value of the euro or the value of foreign currencies.

Thus, the supply of the euro will rise if these conditions apply.

- Europeans increase their demand for foreign goods and services. This could be due to the fact that European inflation is relatively higher than that of other economies, making foreign goods more competitive; or European incomes have risen; or tastes have changed in favour of foreign goods.
- Foreign investment prospects look good.
- Foreign interest rates increase, making it more attractive to save in foreign financial institutions.
- People think the value of the euro will fall in the future, so they sell it now.



Advantages and disadvantages of high and low exchange rates

	High exchange rate	Low exchange rate
Advantages	<ul style="list-style-type: none"> • There will be downward pressure on inflation, because imports are cheaper. • More imports can be bought. • It forces domestic producers to improve their efficiency. 	<ul style="list-style-type: none"> • There will be greater employment in export industries. • There will be greater employment in domestic industries.
Disadvantages	<ul style="list-style-type: none"> • It will damage export industries. • It will damage domestic industries. 	<ul style="list-style-type: none"> • Inflation will occur because of higher import prices and prices of raw materials and finished goods.

Reasons for government intervention in the foreign exchange market

There are a number of reasons why governments may intervene in the foreign exchange market to influence the value of their currency. They may wish to:

- lower the exchange rate in order to increase employment
- raise the exchange rate in order to fight inflation
- maintain a fixed exchange rate
- avoid large fluctuations in a floating exchange rate
- achieve relative exchange rate stability in order to improve business confidence
- improve a current account deficit, which is where spending on imported goods and services is greater than the revenue received from exported goods and services.

Means of government intervention in the foreign exchange market

There are two main methods.

1. By using their reserves of foreign currencies to buy, or sell, foreign currencies – if the government wishes to increase the value of the currency, then it can use its reserves of foreign currencies to buy its own currency on the foreign exchange market. This will increase the demand for its currency and so force up the exchange rate.

In the same way, if the government wishes to lower the value of its currency, then it simply buys foreign currencies on the foreign exchange market, increasing its foreign currency reserves. To buy the foreign currencies, the government uses its own currency and this increases the supply of the currency on the foreign exchange market and so lowers its exchange rate.

2. By changing interest rates – if the government wishes to increase the value of the currency, then it may raise the level of interest rates in the country. This will make the domestic interest rates relatively higher than those abroad and should attract financial investment from abroad. In order to put money into the country, the investors will have to buy the country's currency, thus increasing the demand for it and so its exchange rate.

In the same way, if the government wishes to lower the value of the currency, then it may lower the level of interest rates in the country. This will make the domestic interest rates relatively lower than those abroad and should make financial investment abroad more attractive. In order to invest abroad, the investors will have to buy foreign currencies, thus exchanging their own currency and increasing the supply of it on the financial exchange market. This should lower its exchange rate.

Advantages and disadvantages of fixed and floating exchange rates

Advantages of a fixed exchange rate

- A fixed exchange should reduce uncertainty for all economic agents in the country. Businesses will be able to plan ahead in the knowledge that their predicted costs and prices for international trading agreements will not change.

- If exchange rates are fixed, then inflation may have a very harmful effect on the demand for exports and imports. The government will be forced to take measures to ensure that inflation is as low as possible, in order to keep businesses competitive on foreign markets. Thus, fixed exchange rates ensure sensible government policies on inflation.
- In theory, the existence of a fixed exchange rate should reduce speculation in the foreign exchange markets.

Disadvantages of a fixed exchange rate

- The government is compelled to keep the exchange rate fixed. The main way of doing this is through the manipulation of interest rates. However, if the exchange rate is in danger of falling, then the government will have to raise the interest rate in order to increase demand for the currency, but this will have a deflationary effect on the economy, lowering demand and increasing unemployment. This means that domestic macroeconomic goals (low unemployment) may have to be sacrificed.
- In order to keep the exchange rate fixed and to instil confidence on the foreign exchange markets, a country with a fixed exchange rate has to maintain high levels of foreign reserves in order to make it clear that it is able to defend its currency by the buying and selling of foreign currencies.
- Setting the level of the fixed exchange rate is not simple. There are many possible variables to take into account and, also, these variables will change with time. If the rate is set at the wrong level, then export firms may find that they are not competitive in foreign markets. If this is the case, then the exchange rate will have to be devalued, but again, finding the exact right level is very difficult.
- A country that fixes its exchange rate at an artificially low level may create international disagreement. This is because a low exchange rate will make that country's exports more competitive on world markets and may be seen as an unfair trade advantage. This may lead to economic disputes or to retaliation.

Advantages of a floating exchange rate

- As the exchange rate does not have to be kept at a certain level, interest rates are free to be employed as domestic monetary tools and can be used for demand management policies, such a controlling inflation.

- In theory, the floating exchange rate should adjust itself, in order to keep the current account balanced. For example, if there is a current account deficit, then the demand for the currency is low, since export sales are relatively low, and the supply of the currency is high, since the demand for imports is relatively high. This should mean that the market will adjust and that the exchange rate should fall. Following this, export prices become relatively more attractive, import prices relatively less so, and so the current account balance should right itself. (This will depend upon the Marshall-Lerner condition being satisfied – see Chapter 27.)
- As reserves are not used to control the value of the currency, it is not necessary to keep high levels of reserves of foreign currencies and gold.

Disadvantages of a floating exchange rate

- Floating exchange rates tend to create uncertainty on international markets. Businesses trying to plan for the future find it

difficult to make accurate predictions about what their likely costs and revenues will be. Investment is more difficult to assess and there is no doubt that volatile exchange rates will reduce the levels of international investment, because it is difficult to assess the exact level of return and risk.

- In reality, floating exchange rates are affected by more factors than simply demand and supply, such as government intervention, world events like 9/11 and speculation. This means that they do not necessarily self-adjust in order to eliminate current account deficits.
- A floating exchange rate regime may worsen existing levels of inflation. If a country has relatively high inflation to other countries, then this will make its exports less competitive and make imports more expensive. The exchange rate will then fall, in order to rectify the situation. However, this could lead to even higher import prices of finished goods, components and raw materials, and cost-push inflation, which may further fuel the overall inflation rate.

Balance of payments account: A record of the value of all the transactions between the residents of one country with the residents of all other countries in the world over a given period of time.

Current account: A measure of the flow of funds from trade in goods and services, plus other income flows.

Balance of trade in goods (visible balance): A measure of the revenue received from the export of tangible (physical) goods minus the expenditure on the imports of tangible goods over a given period of time.

Balance of trade in services (invisible balance): A measure of the revenue received from the export of tangible services minus the expenditure on the imports of services over a given period of time.

Net income flows: Net investment income plus net transfers of money.

Net investment incomes: A measure of the net monetary movement of profit, interest and dividends moving in and out of a country over a given period of time as a result of financial investment abroad.

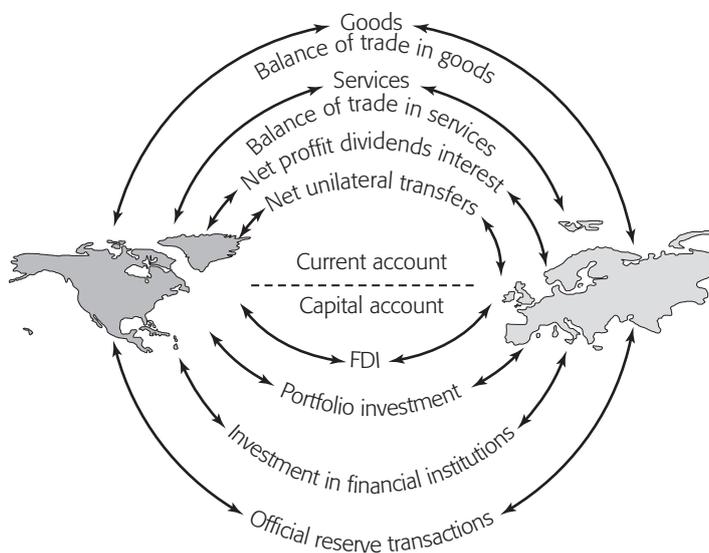
Net transfers: Payments made between countries where no goods or services change hands, e.g. government foreign aid and foreign workers sending money back to their home country.

Financial account: A measure of the buying and selling of assets between countries. It measures the net change in foreign ownership of domestic assets.

Assets: Foreign direct investment (FDI; investment by multinational corporations in another country), portfolio investment (investment in stocks and shares) and other investment (currency transactions and bank and savings account deposits).

Official reserve account: Reserves of gold and foreign currencies. Net changes in the official reserve account over the period of time being considered balance the accounts.

An overview of the balance of payments



Consequences of a current account deficit

If the current account is in deficit, then the capital account will have to be in surplus. This means one of three things.

1. Reserves may have to be used to increase the capital account, but this cannot go on forever.
2. A high level of foreigners buying domestic assets may be financing the current account deficit.
3. A high level of borrowing, with high interest repayments, may be financing the current account deficit.

Consequences of current and financial account surpluses

If the current account is in surplus, there may be other consequences.

- The country can have a deficit on capital account by building up reserves or purchasing assets abroad.
- The surplus usually leads to an appreciation of the currency, which makes imports cheaper, reducing inflation, but exports more expensive, leading to unemployment.
- There may be increased protectionism from other countries.

A financial account surplus may have two consequences.

1. If it is based upon the purchasing of assets for ownership, it is usually a positive thing and allows a current account deficit.
2. If it is based upon high levels of borrowing from abroad, it is usually a bad thing in response to a current account deficit.

Methods of correcting a persistent current account deficit

Expenditure-switching policies

These are any policies designed to attempt to switch the expenditure of domestic consumers away from imports towards domestically produced goods. Here are some examples.

- Government could introduce policies to depreciate or devalue the value of the currency, and thus make imports more expensive, reducing demand for them. (Success depends on the price elasticity of demand (PED) for imports.)
- Protectionist measures, such as tariffs, quotas, embargoes and legal restraints could be used, but these measures may lead to retaliation and may be against WTO agreements. They also encourage domestic producers to be inefficient.

Expenditure-reducing policies

These are policies designed to attempt to reduce overall expenditure in the economy, thus shifting aggregate demand to the left, and reducing the demand for all goods and services, including

imports. Deflationary demand-side policies are used (fiscal and/or monetary).

However, although import expenditure may be reduced, the policy is also likely to lead to a fall in domestic employment and eventual recession! This is probably too big a cost to pay for external balance.

Marshall Lerner and the J-curve

If a country's currency depreciates (floating exchange rate) or is devalued (fixed exchange rate), then this will lead to an increase in exports and a decrease in imports. However, whether the current account balance improves will depend upon the price elasticity of demand (PED) for exports and imports.

The Marshall-Lerner condition says that it will only be successful if the total value of the PED for exports plus the PED for imports is greater than 1.

Even if the Marshall-Lerner condition is fulfilled when the value of a currency is lowered, there is usually a short-term worsening of the balance of trade, before things begin to improve. This is known as the J-curve effect and is shown to the right. If we assume that the country is at point X and then lowers its exchange rate. In the short run, importers will still be buying from abroad, on orders already given, so their bills will get worse and import expenditure will actually increase. In the same way, exporters will be getting less revenue on their existing orders and it will take time for those abroad to realize that the country's exports are now more attractive. Thus, export revenue will fall. The balance of trade will worsen in the short run and we will move towards point Y. Over time, these problems will be sorted out and the balance of trade will begin to improve, moving towards Z, because the Marshall-Lerner condition is satisfied.

