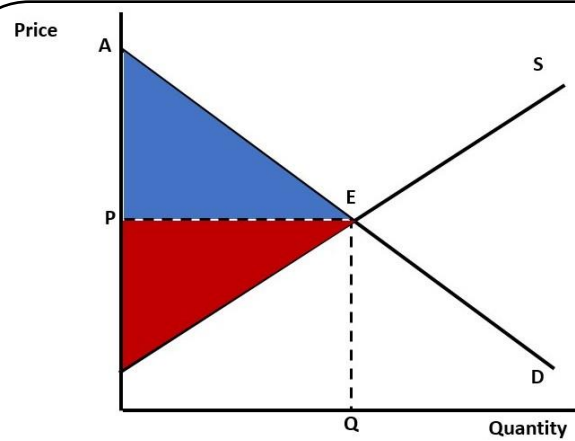


Markets and the allocation of resources



In the absence of market failure, the price mechanism is a very efficient method of allocation scarce resources amongst competing uses. Social welfare (the consumer surplus plus the producer surplus) is maximised at the market equilibrium.

Allocative efficiency

Allocative efficiency occurs when **price = marginal cost**.

$P > MC$: If the value consumers place on the unit of the good exceeds the cost of producing that unit, it is efficient to allocate scarce resources to the production of that good.

$P < MC$: If the value consumers place on the unit of the good is less than the cost of producing that unit, it is efficient to allocate scarce resources to the production of that good.

Market failure

Market failure exists when the competitive outcome of markets is not efficient (or equitable) from the point of view of the economy as a whole, ie resources are not allocated as efficiently as they could be.

Complete market failure

Complete market failure occurs when the market does not supply products at all – there is a **missing market**.

Examples: public goods, some information failure such as asymmetric information, when there is a lack of property rights

Partial market failure

Partial market failure occurs when the market functions/exists, but it supplies the wrong quantity of a product.

Examples:

- Negative externalities from production and consumption
- Positive externalities from production and consumption
- Some information gaps
- Market concentration and frictions
- Irrationality (linked to behavioural economics).
- Inequality (some groups are not able to express their preferences through effective demand)
- Volatile prices
- Market prices is deemed too high or too low by the government
- Merit goods
- Demerit goods

Rationale for government intervention in markets

Market failure provides a **rationale for the government to intervene** to correct the market failure (or at least reduce it).

There are a range of policies available for the government to use.

Examples:

- Indirect taxes
- Subsidies
- Regulations
- Bans
- Free provision at point of use
- Price controls (maximum or minimum prices)
- Competition policy
- Redistributive policies

If the government fails to improve the allocation of resources or makes it worse this is known as **government failure**.

Characteristics of private goods

Private goods are goods and services supplied and sold through markets by private sector businesses. They are:

- **Excludable** – buyers can be excluded from benefiting from the good if they are not willing or able to pay for it
- **Rival** - one person's consumption of a product *reduces* the amount left for others to consume and benefit from
- **Rejectable** - can be rejected by the consumer if their needs and preferences or their budget changes

Characteristics of public goods

Public goods are defined by their characteristics:

- **Non-excludable** – once a good is provided it is impossible to prevent people from using and benefiting from it; non-payers can enjoy the benefits for free creating a '**free rider**' problem.
- **Non-rival** (or non-diminishable) - consumption of a good by one person does not prevent or reduce the benefits to another person consuming the good.
- **Non-rejectable** – the collective supply of a pure public good means it cannot be rejected by people.

Pure public goods v quasi public goods

Pure public good: non-excludable and non-rival all of the time, e.g. national defence, security, mass vaccination

Quasi public good (semi-public goods): has some, but not all public good characteristics i.e. it has one or other characteristics, or has both some of the time, but not all of the time. e.g. TV & radio broadcasting, toll bridge
Technological advances can change a pure public good into a quasi-public good or a quasi-public good into a private good

Public 'bads'

Public bads are non-excludable and non-rival, but provide dis-satisfaction to people who consume, eg flytipping, air pollution

The free rider problem

Free rider - someone who consumes a good without paying for it. Because public goods are non-excludable, it is difficult to charge consumers once a good has been provided – there is a **free rider problem**.

- Consumers *do not reveal their preferences* if they think they can free ride
- This means there is *no demand curve* in the market
- There is *no incentive for producers* to supply the good because it will not be profitable
- The **market is missing** – resources are not allocated to produce public goods, even though consumers may actually want them

The free market will fail to provide pure public goods (**complete market failure**).

For quasi-public goods, under-provision is still likely to occur (**partial market failure**).

Possible solutions to market failure of public goods

Government provision – collective provision through taxation

Government funding – the government could fund private provision financed through taxation or charges (eg TV licence)

Voluntary/charitable donations – eg RNLI

Communities may act **altruistically** – and pay collectively eg private road

Advantages and disadvantages of government provision

- | | |
|--|---|
| • Equity – all people, whatever their income have access to public goods | • Government may lack the information needed to provide best amount of public goods |
| • Efficiency – collective provision allows economies of scale | • Possible diseconomies of scale |
| • Overcomes the free rider problem/missing market | • Government funding of private sector provision is often costly & wasteful |
| • Public sector investment is higher | • Government corruption issues |

Negative externalities

Negative production externality – a third party or spillover external cost arising from the production of a good for which no compensation is paid e.g. pollution

Negative consumption externality - a third party or spillover external cost arising from the consumption of a good for which no compensation is paid e.g. tobacco consumption causing passive smoking (often called demerit goods)

Important externality terms

Social benefit = private benefit + external benefit

Social cost = private cost + external cost

MPC = marginal private cost – all the costs of producing one more unit of the good to the producer

MSC = marginal social cost – all the costs of producing one more unit of the good to society

MPB = marginal private benefit – all the benefits of consuming one more unit of the good to the consumer

MSB = marginal social benefit – all the benefits of consuming one more unit to society

In a perfect market, **allocative efficiency** is achieved when $P = MC$, but if externalities exist, then the **social optimum** is achieved when $MSC = MSB$

Policies to address negative externalities

Government policies can help reduce negative externalities, so the **externalities are internalised** e.g. the **polluter pays principle**, reducing or eliminating the market failure. It is important to remember that there may be **government failure** if the policies worsen the allocation of resources.

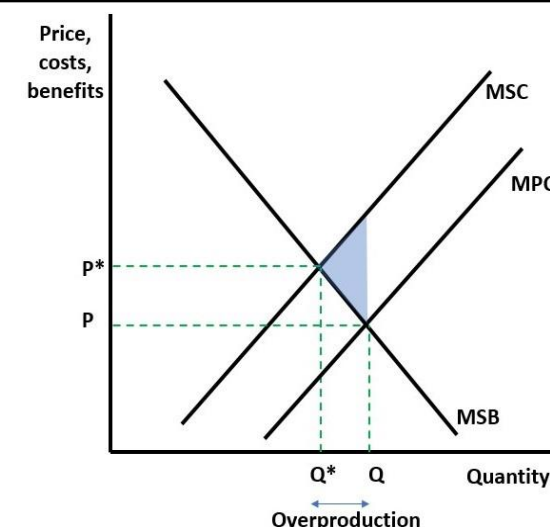
Policies that could be used include indirect taxes, tradeable pollution permits, banning/restricting output, legislation/regulations, 'nudge' policies

Negative production externality diagram

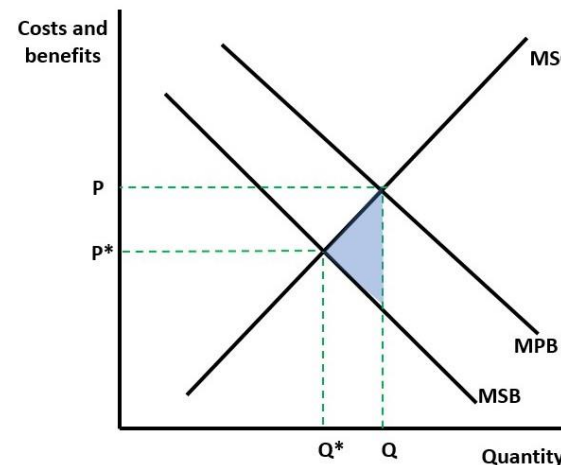
The market only considers private costs and benefits with equilibrium at P and Q.

The *negative production externality* means $MSC > MPC$. The social optimum will be where $MSC = MSB$, at Q^* .

The market **overproduces** by $Q - Q^*$. There is a **net welfare loss** (shaded area) at the market equilibrium.



Negative consumption externality diagram



For a negative consumption externality, $MSB < MPB$. The market will over-provide & over-consume by $Q - Q^*$; too many scarce resources are allocated to the production and consumption of the good; there is a **net welfare loss** (shaded area) in the market. There is a case for government intervention to correct the market failure.

Examples of negative externalities

Negative production externalities: air, noise & water pollution, environmental damage

Negative consumption externalities: tobacco, alcohol, gambling, obesity, congestion

Positive externalities

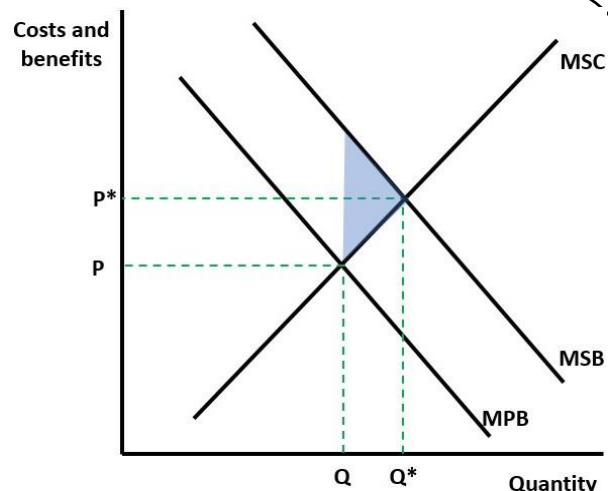
Positive consumption externality: a third party or spillover external benefit arising from the consumption of a good for which no compensation is paid e.g. vaccination, healthcare & hygiene, public transport.

Positive production externality: a third party or spillover external benefit arising from the production of a good for which no compensation is paid e.g. R&D, training and education.

Positive consumption externality

The market only considers private costs and benefits with equilibrium at P and Q. The *positive consumption externality* means **MSB > MPB**. The social optimum will be where **MSC = MSB**, at Q*.

The market **under-provides** by $Q^* - Q$. There is a **net welfare loss** (shaded area) at the market equilibrium.



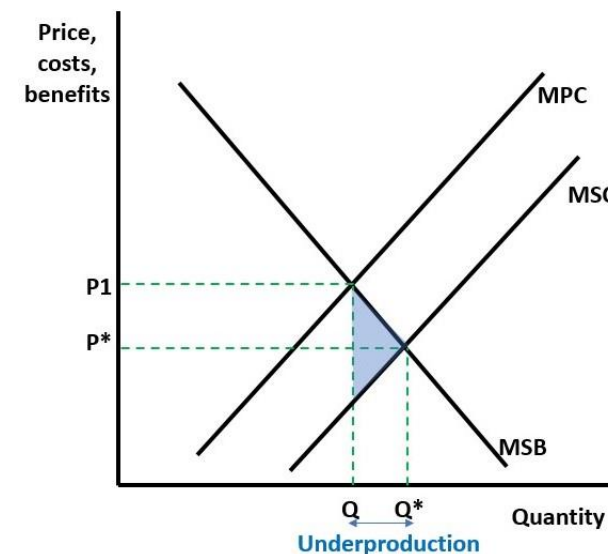
Policies to address positive externalities

Government policies can help reduce positive externalities, so the **externalities are internalised**. It is important to remember that there may be **government failure** if the policies worsen the allocation of resources.

Policies could include subsidies, government provision free at the point of use, legislation/regulations, make it compulsory, 'nudge' policies

Positive production externality

For a positive production externality, **MSC < MPC**. The market will under-produce by $Q^* - Q$; too few scarce resources are allocated to the production and consumption of the good; there is a **net welfare loss** (shaded area) in the market. There is a case for government intervention to correct the market failure.



Examples of positive externalities

- Positive production externalities:** fish industry benefitting from a dam built to store water (reservoir); honey producer benefitting from being near an apple orchard
- Positive consumption externalities:** healthcare, education, dental care, green spaces/parks

Evaluation of government policies to reduce/eliminate externalities

Success of the policy intervention depends on:

- Size of externality
- The extent to which the externality can be measured
- Whether there are unintended consequences from the policy
- Whether there is government failure (this could be an information failure)
- Opportunity cost of policy – some interventions are expensive
- How the policy affect the distribution of income – are there winners and losers?

The government needs to judge whether the benefits of intervening are sufficiently high relative to the costs to make it worthwhile for social welfare.

Merit goods

Merit goods are those goods/services that the government judges that people will **under-consume**, and which ought to be **subsidised** or provided **free at the point of use**.

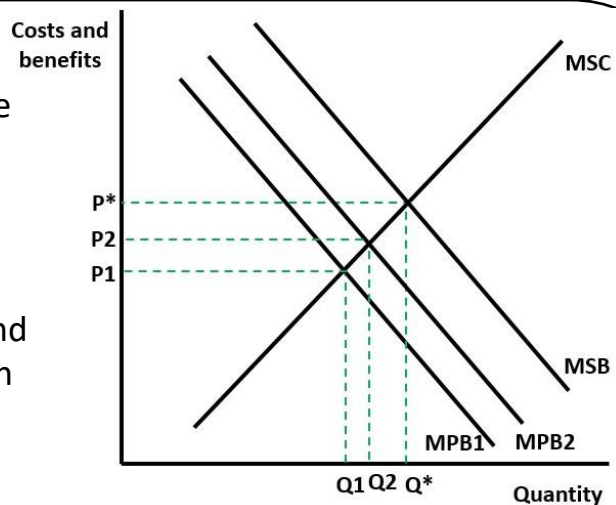
- People do not fully understand the private benefits of their consumption.
- Consumption of merit goods also often generates positive externalities - where the social benefit exceeds the private benefit.

Examples: healthcare, dental care, education

A **value judgement** must be made to classify a good as a merit or demerit good.

Merit good diagram

This diagram shows a merit good where there is information failure and some positive externalities. The market underprovides by Q_1Q^* . Q_1Q_2 is underprovided because consumers do not fully understand the benefits, with full information demand would be MPB_2 not MPB_1) Q_2Q^* is underprovided because the market does not take into account the positive externalities ($MSB > MPB_2$)



- NB:
- Merit goods suffer from information failure
 - They may have positive externalities
 - Not all goods with positive consumption externalities are merit goods

Demerit goods

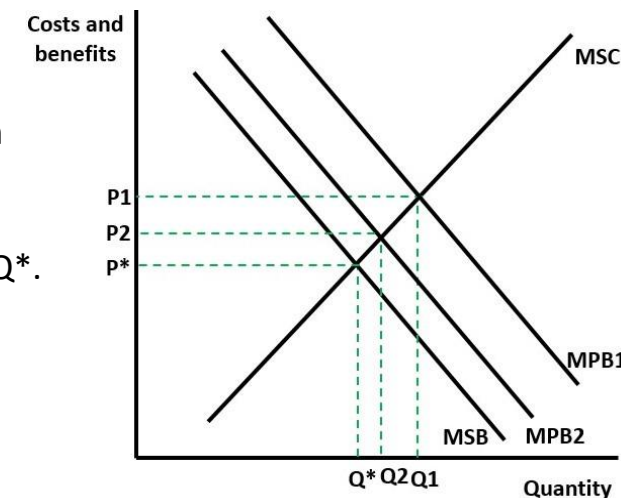
Demerit goods are those goods/services that the government judges that people will **over-consume**, and which ought to be **taxed** or **regulated**.

- People do not fully understand the private costs of their consumption.
- Consumption of demerit goods also often generates negative externalities - where the private benefit exceeds the social benefit.

Examples: tobacco, alcohol, gambling

Demerit good diagram

This diagram shows a demerit good where there is information failure and some negative externalities. The market overprovides by Q_1Q^* . Q_1Q_2 is overprovided because consumers do not fully understand the costs, with full information demand would be MPB_2 not MPB_1) Q_2Q^* is overprovided because the market does not take into account the negative externalities ($MSB > MPB_2$)



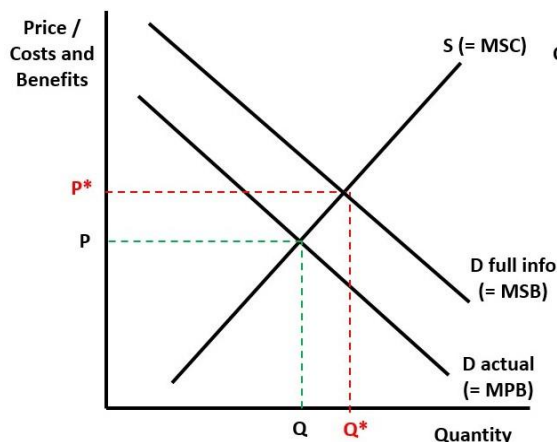
- NB: Demerit goods suffer from information failure
- They may have negative externalities
 - Not all goods with negative consumption externalities are demerit goods

Behavioural economics can help explain why consumers face information gaps; consumers do not always act on full information even when they have it

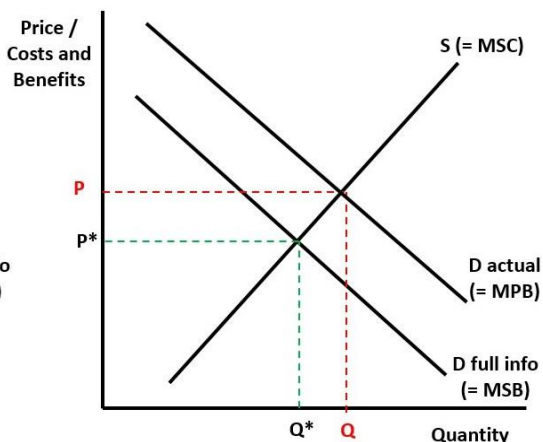
Information gaps

Information gaps exist when either the buyer or seller does not have access to the information needed for them to make a fully-informed decision, leading to a misallocation of scarce resources = market failure

Information gap diagrams



If consumers had full information, they would demand more because they are aware of the extra societal benefits; the **information gap** causes under-consumption at Q



If consumers had full information, they would demand less because they are aware of the extra societal costs; the **information gap** causes over-consumption at Q

Examples of information failure

- Risks from using tanning salons
- Addiction to painkillers and other drugs
- Complexity of pension schemes
- Uncertain quality of second-hand goods
- Knowledge of the nutritional content of food
- Cowboy builders and other rip-off merchants
- Tourist bazaars or buying and selling antiques

Factor immobility

Factor mobility occurs when factors of production can easily be moved from one use to another.

Geographical immobility of labour – in practice, labour may not be fully mobile because of regional house price variation, family & social ties, children in school etc.

Occupational immobility of labour – can occur because of insufficient education and training, a lack of transferable skills, inability to afford training etc.

Land is not geographically mobile but can be occupationally mobile, eg land used for agriculture or housing.

Capital can be both occupationally and geographically mobile, eg hand tools or vehicles, but heavy industry capital, eg a blast furnace, may not be mobile at all.

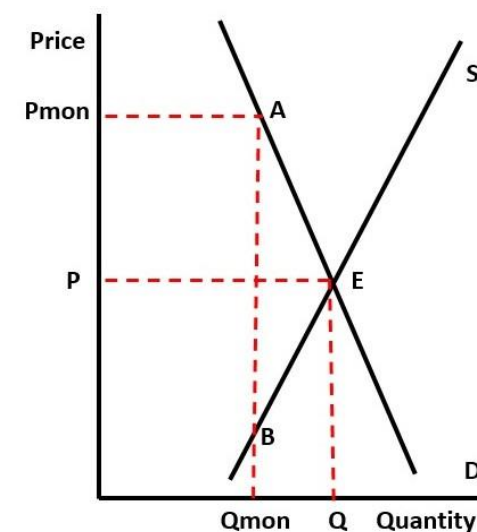
Factor immobility can cause structural unemployment and regional inequality which leads to market failure

Monopoly and monopoly power

A monopoly can use its market power to restrict output to increase price to maximise its profits

The monopoly price P_{mon} is higher than the market price P and the monopoly output Q_{mon} is less than the market equilibrium output.

The monopoly causes a **loss of social welfare** of ABE. Both consumer and producer surpluses are reduced by this monopoly behaviour causing **market failure**.



Tragedy of the Commons

Tragedy of the Commons: When no one owns a resource, it may get over-used, for example fish stocks and deforestation - people use and benefit from a common pool resource such as grazing land without regard to the effects on others.

Our natural resources are often over-used, leading to **environmental degradation and depletion.**

Green tax e.g. carbon tax

Carbon tax on carbon emissions – an indirect tax on producers that raises the price of emissions

Advantages

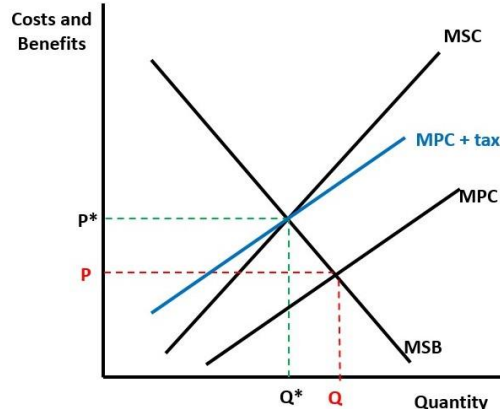
- Mandates a specific price on carbon
- Makes the polluter pay and internalises the externality
- Incentives firms to lower their emissions and for consumers to change their behaviour
- Revenue generated can be 'ringfenced' (hypothecated) and spent on other environmental initiatives

Disadvantages

- Problems determining the size of the tax; hard to assess the true cost of CO2 emissions and climate change
- Demand may be price inelastic so tax may have little impact on pollution
- Reluctance to impose if it could cause a loss of international competitiveness
- Could be regressive
- Costs of compliance and rise of tax evasion
- Countries may 'free ride' – let others tax and yet gain benefits

Diagram of green tax

- Environmental damage means $MSC > MPC$
- Carbon tax shifts MPC up
- Market equilibrium changes from P and Q to P* and Q*
- Q* is the social optimum (where $MSB = MSC$)
- The carbon tax has eliminated the welfare loss, internalised the externality and made the polluter pay

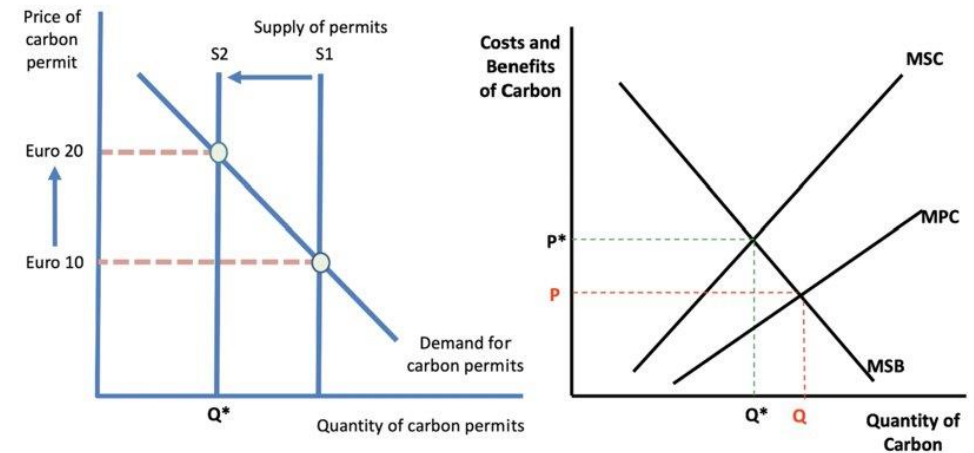


Tradeable permit scheme

Carbon emissions trading, also known as **cap-and-trade**, is a market-based system for reducing greenhouse gas emissions.

- Under a cap-and-trade system, the government sets a limit, or cap, on the total amount of emissions that can be produced in a given period
- Companies are then issued permits, or allowances, to emit a certain amount of CO2
- If a company emits less than its allotted amount, it can sell its surplus allowances to another company that has exceeded its limit
- This incentivises firms to emit less because they can increase their revenue by selling permits and/or because if they pollute they will have to buy more permits adding to their costs

Diagram for permits



Other green policies

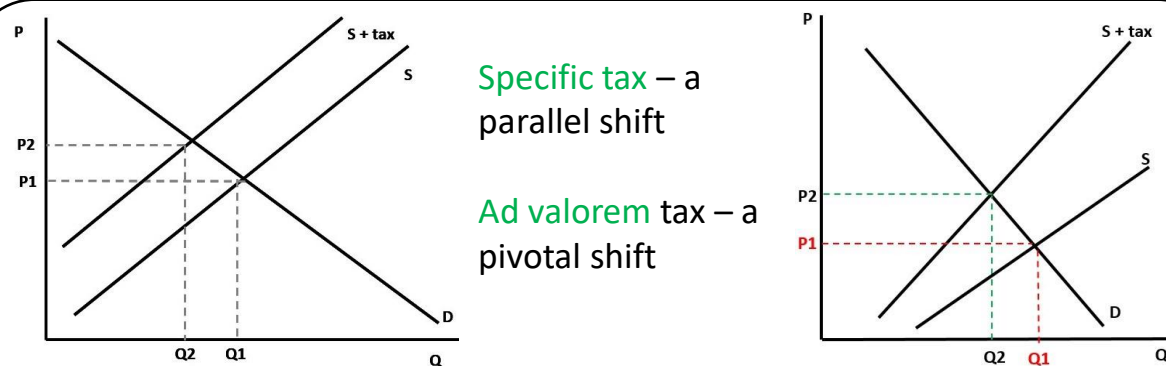
- **Other green taxes** – fuel duty, air passenger duty, landfill tax etc
- **Subsidies** – for green energy, fitting heat pumps, home insulation
- **Regulations** – targets for net zero, electric vehicles, renewable energy; energy labelling for homes/appliances
- **Behavioural changes** – waste reduction & circular economy, nudges (e.g. lower default temperature on boiler/showers)
- **Voluntary carbon footprint offsetting emissions** – e.g. tree planting

Indirect tax

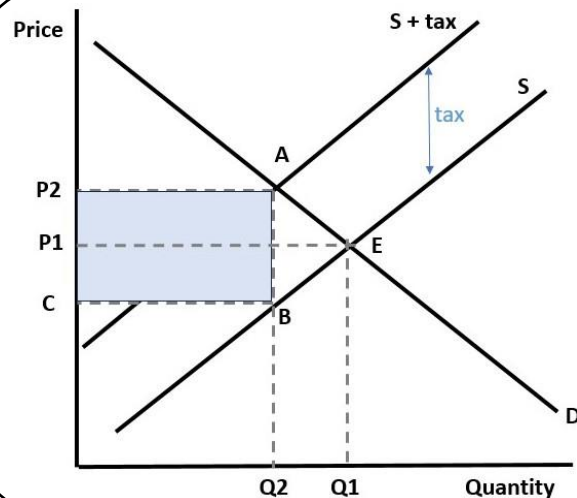
Indirect tax- tax imposed on producers (suppliers) by the government; producers may be able and choose to pass on some or all an indirect tax to their customers by raising prices. Indirect taxes are a form of **government intervention** in markets often with the aim of addressing **market failure**.

Examples include duties on cigarettes, alcohol and fuel, the sugar levy, VAT and carbon taxes

Specific (unit) tax v. ad valorem tax



Impact of indirect tax on the market

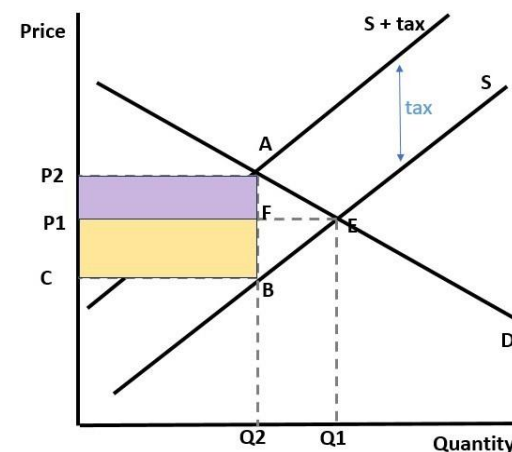


- Starting equilibrium at E, price = P1, quantity = Q1
- Indirect tax shifts supply up from S to S+tax
- New equilibrium at A; price rises to P2 and quantity falls to Q2
- Tax revenue raised = tax per unit AB x quantity sold after tax Q2 or shaded area ABCP2

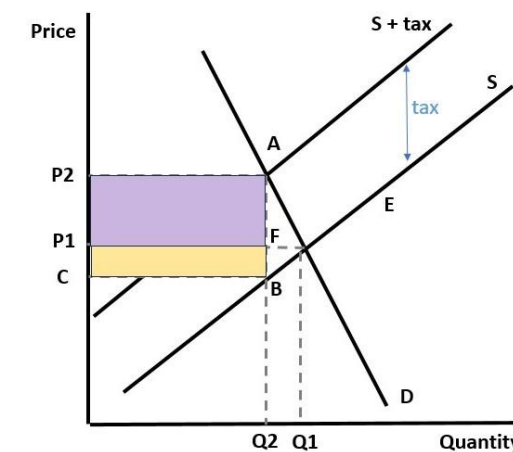
The incidence of the tax

Tax incidence: How the final burden of a tax is shared between the producers and the consumers.

If demand for a good is **price elastic**, then the tax will fall mainly on the producer (area P1FBC) as they will be unable to put prices up without losing a lot of demand. The consumer only pays area P1P2AF



If demand for a good is **price inelastic**, then the tax may fall mainly on the consumer (area P1P2AF) as the producer can put prices up without losing a lot of demand. The producer only has to absorb area P1FBC.



Tip: Find the area the consumer pays by looking at the increase in the market price – this is tax incidence on the consumer

Advantages and disadvantages of indirect taxes

Advantages

- Corrects market failures e.g. negative externalities, information failures that lead to over-provision
- Deters consumption of goods that are bad for us, e.g. tobacco, sugar
- Source of revenue for government
- Helps tackle climate change

Disadvantages

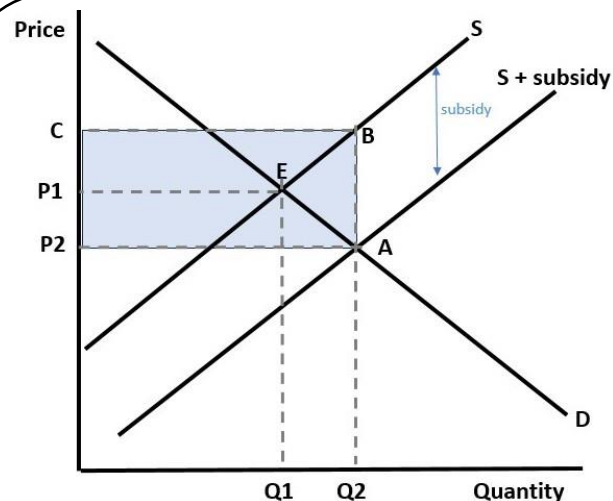
- Regressive
- Hard to determine best size of tax
- Compliance costs
- Possible tax avoidance/evasion
- Shadow market activity
- Government failure/unintended consequences

Subsidies

Producer subsidies – payments to producers by the government to reduce the costs of production e.g. subsidies for renewable energy; shifts supply right

Consumer subsidies – payments to consumers to allow them to purchase more of a good/service e.g. childcare vouchers; shifts demand right

Impact of a producer subsidy



- Starting equilibrium at E, price = P1, quantity = Q1
- Subsidy shifts supply down from S to S+subsidy
- New equilibrium at A; price falls to P2 and quantity rises to Q2
- Total cost of subsidy = subsidy per unit AB x quantity sold after subsidy Q2 or shaded area ABCP2

Advantages and disadvantages of producer subsidies

Advantages

- Corrects market failures e.g. positive externalities, information failures that lead to under-provision
- Encourages consumption of goods that are good for us, e.g. healthcare; fresh fruit
- Encourages firms to invest & innovate
- Helps protect producer incomes & jobs
- Supports those on lower incomes
- Can help tackle climate change
- Can help make exports more competitive

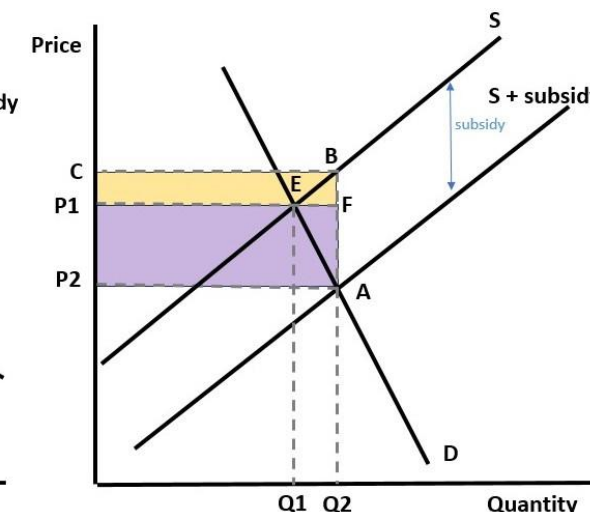
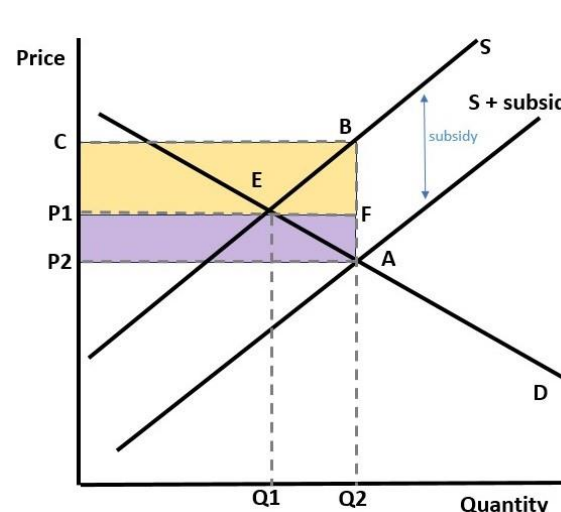
Disadvantages

- Cost to government (opportunity cost)
- Firms may become over-reliant on subsidy
- Firms have less incentive to be efficient and productive
- Firms may distribute extra profit to shareholders rather than re-invest
- May cause fraud/corruption
- Government failure/unintended consequences

The benefits of the subsidy

If demand for a good is **price elastic**, then the subsidy will mainly benefit the producer (area P1FBC) as they will not have to cut price much to gain more demand. The consumer only gains area P1P2AF

If demand for a good is **price inelastic**, then the subsidy mainly benefits consumers (area P1P2AF) as the producer has to put prices down a lot to gain a small increase in demand. The producer gains area P1FBC.



Tip: Find the area the consumer benefits by looking at the decrease in the market price as this indicates the benefit to consumers

Evaluation of subsidies

- Are the subsidies meeting their aims?
- Does the outcome depend on the size and scope of the subsidy? Or on the elasticity of demand or supply?
- Will the subsidy promote efficiency?
- What is the opportunity cost of the subsidy? Who will gain/loss from the subsidy cost?
- Does the subsidy help correct a market failure?
- Are there unintended consequences? Government failure?

NB: These ideas/questions could be applied to indirect taxes when evaluating too

Price controls

If the market price is **sub-optimal** for social, environmental or political reasons, the government may decide to **control the market price** directly

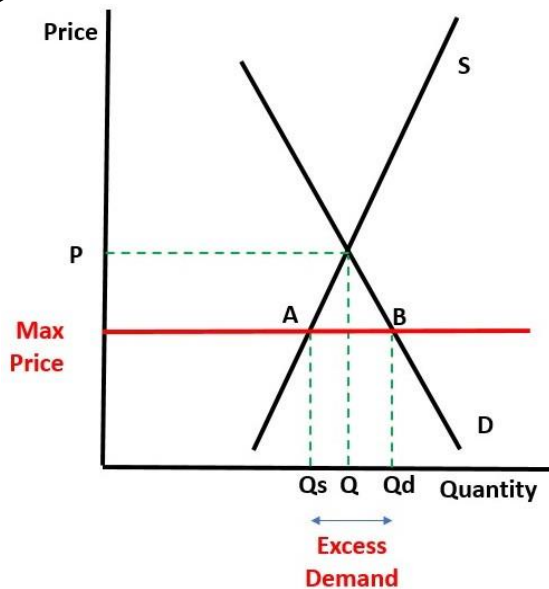
Maximum price

Maximum price –the government or an industry regulator can set a **maximum price** to prevent the market price from rising above a certain level. Also known as a **price cap** or **price ceiling**.

Rationale for maximum prices

- To make necessities more affordable, especially for those on low incomes (more equitable); reduces poverty/hardship
- To encourage consumption of goods that are good for social welfare, have positive externalities or where consumers may lack all information
- To prevent businesses profiteering at expense of consumers

Impact of a maximum price in a market



- Starting equilibrium at price = P , quantity = Q
- Maximum price is set **below** the market price
- New price = the max price
- New quantity demanded is Q_d , the lower price causes an **extension** in demand
- New quantity supplied is Q_s , the lower price causes a **contraction** in supply
- There is an **excess demand** of $Q_s Q_d$ or AB at the maximum price

Consequences of maximum price

- The maximum price causes a **shortage** of the good.
- There is a **disequilibrium** at the maximum price.
- The price cannot rise to remove the excess demand – it has lost its **rationing function**
- The quantity supplied will need to be rationed in a different way, e.g. first come, first served; waiting lists; preferred customer priority; ration books; via shadow market activity
- There is potential for **government failure** and **unintended consequences**.

Examples of maximum prices in markets

- Rent controls
- Energy price cap
- Cap on bonuses and CEO pay
- Cap on mobile phone roaming charges
- Price caps for water companies
- Cap on university tuition fees
- Bus fare price cap
- Cap on interest rates charged by pay day lenders
- Currency pegs
- Cap on annual charges for occupational pension plans
- Tickets prices for events

Problems with maximum prices

- Excess demand needs addressing; alternative rationing methods may not work well
- Suppliers may leave the market if they cannot charge a price high enough to make profit (which would increase any shortage created by the maximum price)
- There may be better alternative policies the government could use if it believes the market price is too high e.g. subsidies, provision of information, redistribution from rich to poor, government provision

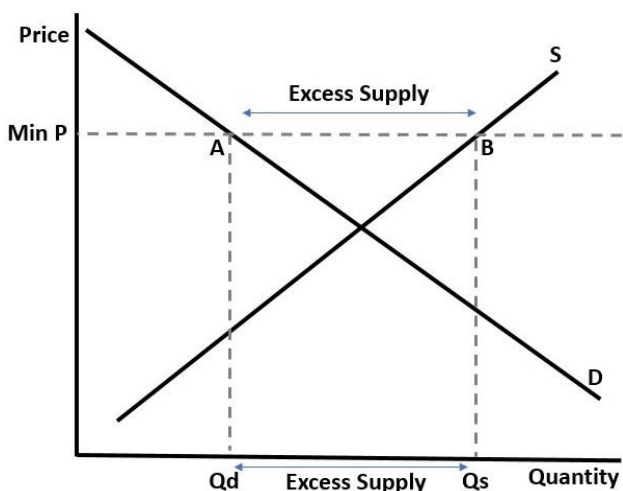
Minimum price

- Minimum price** –the government can set a **minimum price** to prevent the market price from falling below a certain level. Also known as a **price floor**.
- Guaranteed minimum price** – the government will buy up and excess supply to guaranteed the minimum price e.g. some agricultural minimum prices.
- Legal minimum price** – the government sets the minimum by law; there is a ban on sales below the price set; the government does not buy up any surplus e.g. minimum price of alcohol.

Rationale for minimum prices

- To support the incomes and jobs of producers and encourage investment and innovation
- To discourage consumption of goods that are bad for social welfare, have negative externalities or where consumers may lack all information
- To prevent consumers abusing any monopsony power they have at expense of suppliers

Impact of a minimum price in a market



- Minimum price is set **above** the market price
- New price = the min price
- New quantity demanded is Q_d , the higher price causes a *contraction* in demand
- New quantity supplied is Q_s , the higher price causes an *extension* in supply
- There is an **excess supply** of $Q_s - Q_d$ or AB at the minimum price

Consequences of minimum price

- The minimum price causes a **surplus** of the good
- There is a **disequilibrium** at the minimum price
- The price cannot fall to remove the excess supply – it has lost its signalling and incentivising **functions**
- For a **legal minimum**, firms cannot sell more than Q_d so they will reduce their supply (supply shifts left)
- For a **guaranteed minimum** the government will buy up the surplus at the minimum price (cost to government = $Q_d AB Q_s$)
- There is potential for **government failure** and **unintended consequences**

Examples of minimum prices in markets

- Minimum price for alcohol
- National minimum/living wage
- Minimum care worker price
- Agricultural support where price is guaranteed to farmers
- Guaranteed prices for renewable energy suppliers

Problems with minimum prices

- Excess supply needs addressing
- For legal minimum price – suppliers cannot sell any excess, so they will cut supply, output and jobs
- For guaranteed minimum price – intervening to buy up the surplus can be expensive (opportunity cost); surplus will need storing, selling on, destroying etc.
- There may be better alternative policies the government could use if it believes the market price is too low e.g. indirect taxes, provision of information, regulations, government ban/restriction; direct grants to support producers

Government failure

Government failure – government intervention worsens the allocation of scarce resources:

- It results in a greater net welfare loss
- The cost of the intervention outweighs the benefits gained
- The policy fails to generate a change in behaviour by economic agents and so the policy fails to achieve its aims

Causes of government failure

- Political self-interest
- Poor value for money
- Policy short-termism
- Regulatory capture
- Conflicting objectives
- Bureaucracy and red tape

Outcomes of government failure

- Greater inequality e.g effects on lower-income households
- High costs of compliance and implementation
- Possible unintended consequences
- Possible conflicts with other micro/macro objectives
- Poor policy choice/outcomes: information failures before a policy is introduced; government may lack information
- Policy may prove ineffective in changing behaviour

Law of Unintended Consequences

Unintended consequences – outcomes that were not foreseen and intended by the government action

- There may be at least one and often many unintended consequences – some may be good, but it is the bad ones that are a cause for concern
- It is impossible for the government to predict outcomes accurately for the economy – these are inevitable
- Unintended consequences can deepen any existing market failure

Examples of unintended consequences

- A minimum wage causes a reduction in non-wage benefits for workers
- An indoor smoking ban increases the use of environmentally-unfriendly patio heaters
- Tariffs to protect the steel industry increase costs for car makers and house builders
- Charging for plastic bags encourages a switch to canvas bag use, which could be worse for environment
- Targets for treating patients could lead to lower quality care
- Moral hazard from bail outs to banks after their risky behaviour

Arguments **against** government intervention in markets

If there is likely to be significant government failure after an intervention, there may be a **case for no intervention**, especially if the market failure is not too severe:

- The price mechanism is very efficient and can promote innovation
- When resources are scarce, higher prices are potentially a good outcome
- Profit motive incentivises businesses and entrepreneurs

Arguments **for** government intervention in markets

There are many features an economy needs to function effectively where intervention is required:

- Allocation of property rights and legal system
- Provision of public goods
- Macroeconomic stability
- Measures to reduce inequality
- Rules about competition

Inaction by the government is possibly the biggest government failure

Rationality

An underlying assumption in economics is that **economic agents are rational**:

- Consumers aim to maximise their utility from consumption
- Workers aim to maximise their wages and other work benefits
- Firms aim to maximise profit
- Governments aim to maximise social welfare

In the **real world**, it is often the case that these assumptions do not hold.

Rational consumer behaviour

Rational consumer behaviour: decision-making process that is based on making choices that maximise utility. This assumes:

- Consumers make all choices *independently*
- Consumers have fixed and *consistent preferences*
- Consumers have *full information*
- Consumers always make the *optimal choice* given their preferences

Irrational consumer behaviour

Irrational consumer behaviour: when people make systematic and persistent deviations from rational choice. This is because:

- Humans are emotional, impulsive and can lack self-control
- Humans are social and belong to many networks
- Humans can be altruistic, generous and forgiving
- Humans have limited time, energy and brain power
- Humans have regrets and also have a strong sense of loss aversion

Bounded rationality is the idea that the cognitive, decision-making capacity of humans cannot be fully rational because of a number of limits that we face

Bounded self-control: consumers have good intentions but may consume more than is rational (eg at a restaurant or pub); this may be because they value the present more than the future; they want instant rewards

Irrational behaviour: influenced by others

Consumers may be irrational because they are **influenced by others**:

- Peer pressure (can be negative and positive); fads/fashion/trends; social networks; social norms & herd behaviour

Irrational behaviour: habit and default bias

Consumers may be irrational because they follow patterns of **habitual behaviour** or stick to what they know or is easiest (**default bias**) eg choosing the same dish off a restaurant

- **Default choices** are options selected automatically if no active choice is made.
- **Restricted choices** limit available options, allowing selection within a defined set.
- **Mandated choices** are obligatory selections enforced by a directive or requirement.

Irrational behaviour: human limitations

Consumers may be irrational because of **weakness at computation**:

- Limited brain power and limited time to use it; decisions sometimes have to be made quickly; may use a 'rule of thumb' for speed
- Limited ability to calculate or absorb complex information
- Emotional responses
- Can be 'misled' by framing and/or anchoring effects

Choice architecture: refers to how decisions are presented and influenced by the way options are organised, leading to certain decisions over others.

Framing: presenting information in a way that influences people's perceptions or decisions, often emphasising specific aspects to shape how a decision is made.

Anchoring: cognitive bias where an initial piece of information (the "anchor") influences how people make subsequent judgments or decisions, even if the anchor is irrelevant or inaccurate.

Irrational behaviour: risk aversion & time preference

There is evidence that humans are **risk averse**; rationality assumes that humans will have a *neutral attitude to risk*, but in practice they are more likely to prefer a certain reward over risking it for a bigger reward.

Humans are also **loss averse**: we emphasise losses more than potential gains – losses can be twice as painful as a similar gain.

There is evidence that humans are **time-sensitive**; rationality assumes that humans have a *neutral attitude to intertemporal decisions*, but in practice they typically prefer a reward earlier than at a later date; a desire for instant rewards!

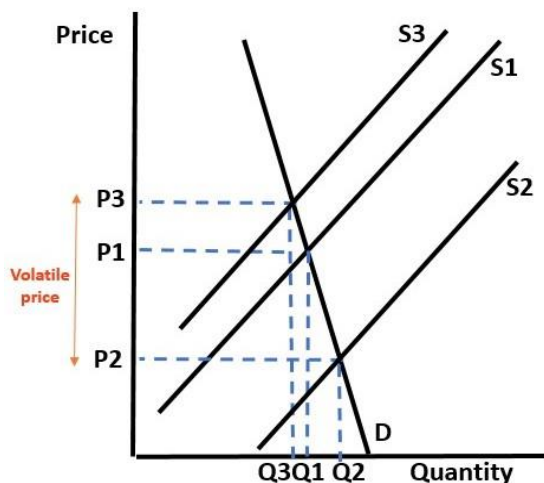
Nudges - subtle pushes or prompts (nudges) to influence and guide people toward making better decisions without limiting their choices or using direct enforcement.

Unstable markets

Some markets have features that mean the price may be too high, too low or **too volatile** to achieve a good outcome for social welfare.

Governments can intervene with price controls and other policies to promote social welfare.

Causes of price volatility in markets



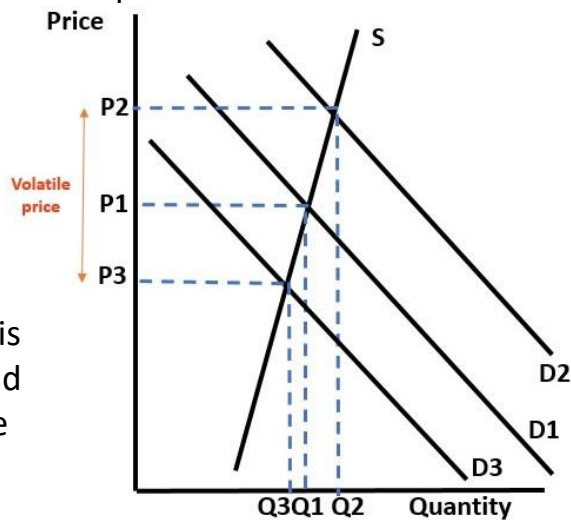
Price inelastic supply: when supply is price inelastic, any change in demand will have a big impact on price in the market.

Time lag problems: time lags in supply, e.g. between planting a cereal crop and when has grown and ready to supply, can cause price fluctuations in a market.

Speculation – speculators can exacerbate changes in price making them more volatile, with boom-bust cycles.

Price inelastic

demand: when demand is price inelastic, any change in supply will have a big impact on price in the market.



Causes of price instability in markets

Key factors influencing demand:

- Globalisation
- Urbanisation
- Industrialisation
- Geopolitical events & pandemics

Cyclical factors influencing demand:

- Demand during growth/boom phase of cycle v recession
- Global growth cycle

Short term influences:

- Speculation
- Fluctuating exchange rates
- Fluctuating interest rates

Key factors affecting supply:

- Climate change
- Unpredictable weather
- Natural disasters
- Geopolitical events & pandemics

Problems with price volatility in markets

Unstable prices can cause problems for both *consumers and producers*, and there may be a case for government intervention.

For consumers:

- Unpredictable food & energy prices
- Reduces consumer confidence
- May cause poverty/hardship when prices rise rapidly

For producers:

- Unpredictable incomes
- May be forced to leave when prices are low; possible shortages
- May reduce investment and innovation; lower business confidence

Examples of markets that often have volatile prices

- Oil and energy markets
- Agricultural markets
- Livestock & meat

- Industrial metals
- Precious metals
- Fertilisers

A key issue with price volatility is that it is often present in markets for necessities and essential raw materials, affecting consumer budgeting and producer costs