Course Companion

A-Level Economics

Every topic handout in one volume

全部专题讲义合集

exercises.lol

Contents 目录

Basic economic ideas and resource allocation

A-Level Economics

The fundamental economic problem

Economics starts with one big idea: **scarcity** 稀缺性. We never have enough to give everyone everything they want.

- **resources** 资源 are the things we use to make goods and services. They are **finite** 有限的 — there is only a limited amount, so they are **scarce** 稀缺.
- **goods** 物品 (things you can touch, like food) and **services** 服务 (work done for you, like a haircut) are what we make from resources.
- human **wants** 欲望 are unlimited. People always want more.

Because wants are bigger than resources, this is called the **economic problem** 经济问题. Every society must answer three questions:

1. **What** to produce?
2. **How** to produce it?
3. **For whom** to produce it?

Choice and opportunity cost

Because resources are scarce, you must choose. Every choice means you give up something else.

opportunity cost 机会成本 — the next best **alternative** 替代选择 you give up when you make a decision.

Opportunity cost is faced by everyone:

- **consumers** 消费者 (people who buy and use goods): buy a phone, and you give up the holiday that money could have paid for.
- **producers** 生产者 and **firms** 企业 (the businesses that make goods): use a factory to make cars, and you give up the trucks it could have made.
- **governments** 政府: spend tax money on hospitals, and you give up the schools that money could have built.

Thinking like an economist

Economics as a social science

Economics is a **social science** 社会科学. It studies how people behave when they make choices. Like other sciences, it builds **models** 模型 (simple pictures of the real world) and tests them with data.

The real world is complex, so economists change one thing at a time and keep everything else fixed. This is the idea of **ceteris paribus** 其他条件不变 — a Latin phrase meaning "all other things stay the same". For example: "if the price of coffee rises, people buy less coffee, *ceteris paribus*".

Positive and normative statements

- a **positive statement** 实证表述 is about fact. It can be tested as true or false. Example: "a higher price of petrol reduces the amount people buy."
- a **normative statement** 规范表述 is about opinion. It says what *should* happen, and it cannot be tested as true or false. Example: "the government should make petrol cheaper."

Normative statements rest on a **value judgement** 价值判断 — a personal view about what is good or fair. Two people can agree on the facts and still disagree about what *should* be done.

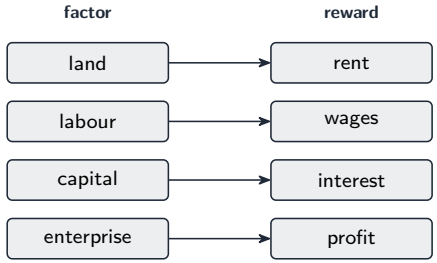
A positive statement can be tested; a normative statement is a value judgement

Microeconomics and macroeconomics

- **microeconomics** 微观经济学 studies single parts of the economy: one market, one firm, one consumer.
- **macroeconomics** 宏观经济学 studies the whole economy together: total **output** 产出, jobs, and rising prices.

Factors of production

The **factors of production** 生产要素 are the four kinds of resource used to make goods and services. Each one earns a **reward** 报酬.



The four factors of production and the reward each earns

Factor	What it is	Its reward
land 土地	natural resources (fields, water, oil, minerals)	**rent** 地租
labour 劳动	human work, both physical and mental	**wages** 工资
capital 资本	man-made things used to produce, like machines, tools and factories	**interest** 利息
enterprise 企业家才能	the skill of bringing the other three together and taking the risk	**profit** 利润

Land includes some **non-renewable resources** 不可再生资源 (like oil and coal) that can run out. Enterprise is supplied by the **entrepreneur** 企业家, the person who has the business idea and risks their own money.

An open-pit copper mine: land includes the natural resources (minerals, oil, water) that firms extract.

Specialisation and division of labour

specialisation 专业化 is when a worker, firm or country makes only the things it is best at, then trades for the rest.

Inside a workplace, specialisation leads to the **division of labour** 劳动分工: a big job is split into small tasks, and each **worker** 工人 does one task again and again.

Advantages	Disadvantages
workers get faster and better at one task	doing one task is boring, so workers may quit
less time wasted moving between jobs	if one worker is absent, the whole line can stop
output per worker rises, so costs fall	workers learn only one narrow skill

A car assembly line: capital (machines and robots) plus the division of labour, each worker repeating one task.

Mobility of factors

mobility 流动性 means how easily a factor can move to a new use.

- **occupational mobility** 职业流动性 — how easily a factor moves from one *job or use* to another. A teacher who retrains as a nurse is occupationally mobile.
- **geographical mobility** 地理流动性 — how easily a factor moves from one *place* to another. Land cannot move at all, so it has no geographical mobility.

Labour is often not very mobile. Family ties, the cost of housing, and missing skills all make it hard for workers to move.

Economic systems

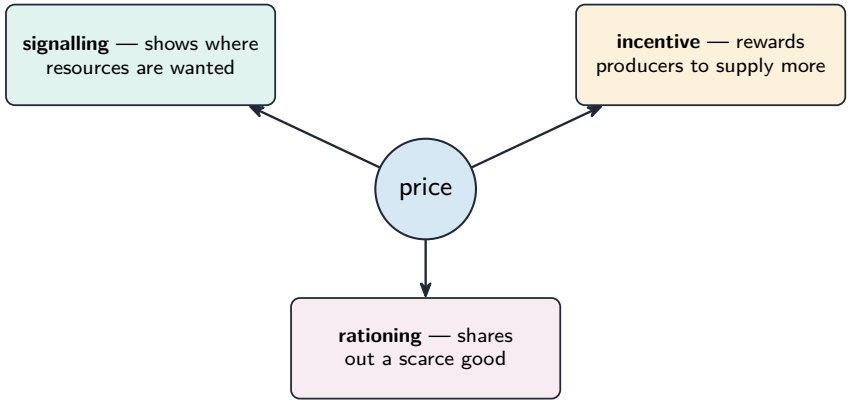
An economic system is the way a country decides how to **allocate** 配置 (share out) its scarce resources. There are three types.

- a **market economy** 市场经济 — firms and people own resources, and prices decide what is made. The government does little.
- a **planned economy** 计划经济 (also called a **command economy** 指令经济) — the government owns resources and decides what is made, how, and for whom.
- a **mixed economy** 混合经济 — a blend of the two. The **private sector** 私营部门 (firms and households) and the **public sector** 公共部门 (the government) both make decisions. Almost every real country is mixed.

The price mechanism

In a market economy, resources are guided by the **price mechanism** 价格机制. Prices do three jobs:

- **signalling** 信号传递 — a price tells buyers and sellers where resources are wanted. A rising price says "this is wanted — make more".
- **incentive** 激励 — a higher price rewards producers, so they want to supply more of that good.
- **rationing** 配给 — when a good is scarce, a higher price shares it out to those who are willing and able to pay.

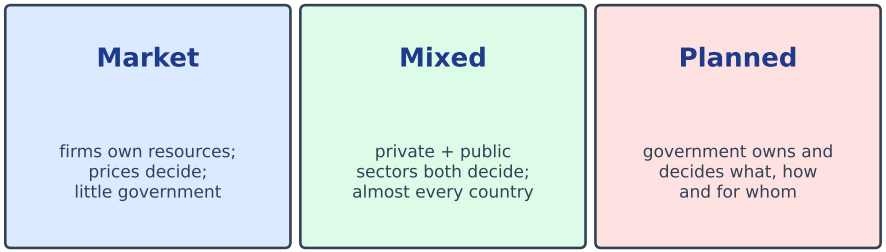


In a market the price does three jobs at once — it signals, it gives an incentive, and it rations the scarce good

Comparing the systems

System	Strengths	Weaknesses
market	choice, low prices, strong incentive to work and invent	large gap between rich and poor; some goods not supplied
planned	smaller gap between rich and poor; key goods provided for all	weak incentive; shortages and surpluses; slow to change
mixed	tries to keep the good points of both	the right balance is hard to find

In practice no country sits at a pure extreme. China's economy, for instance, is officially a *socialist market economy*, where markets set most prices while the government guides key sectors and owns major enterprises. Every real system mixes the two and sits somewhere on the spectrum below.



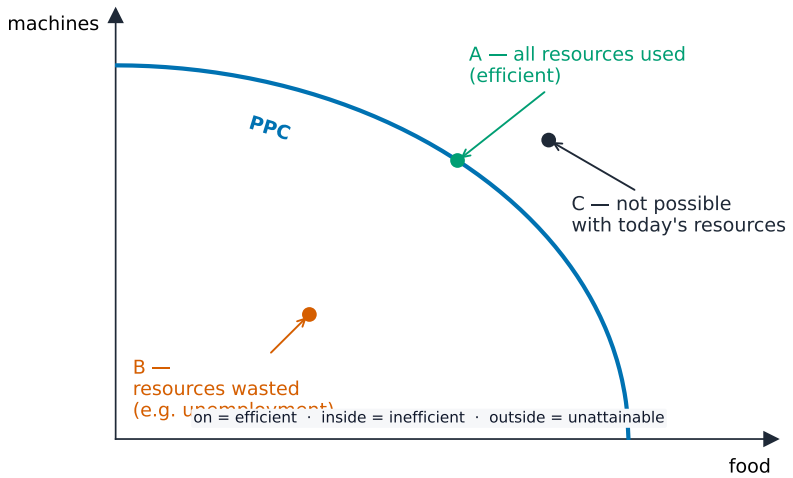
Economic systems form a spectrum: a pure market at one end, full government planning at the other, mixed economies in between.

Production possibility curves

A **production possibility curve** 生产可能性曲线 (PPC) is a line showing the largest combinations of two goods an economy can make when all its resources are fully and well used.

Imagine an economy that makes only food and machines. The PPC is drawn with food on one axis and machines on the other.

- a point **on** the curve: all resources are used with full **efficiency** 效率.
- a point **inside** the curve: resources are wasted (for example, **unemployment** 失业 of workers). The economy could do better.
- a point **outside** the curve: impossible today, because there are not enough resources. This shows scarcity.

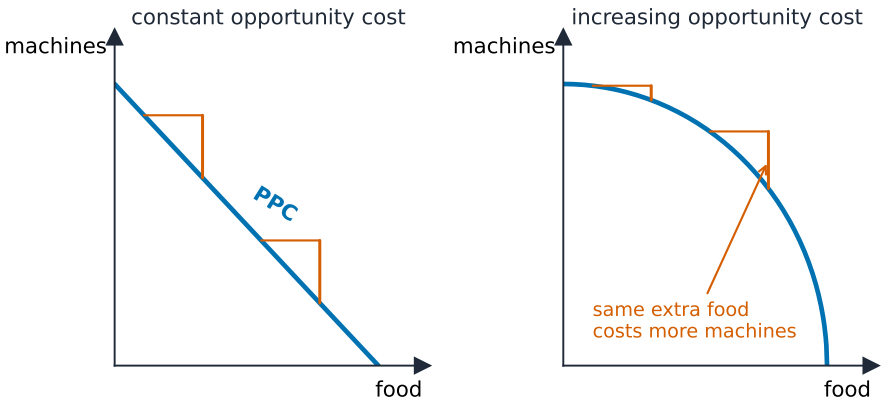


A point on the curve uses all resources (efficient); inside the curve means waste, e.g. unemployment; outside is not possible yet.

Moving along the curve shows opportunity cost: to make more food, you must move resources away from machines, so you make fewer machines. This is the **trade-off** 取舍 between the two goods.

The *shape* of the curve shows how opportunity cost behaves:

- a straight-line PPC means **constant** opportunity cost — each extra unit of food costs the same number of machines.
- a curve that bows outwards means **increasing** opportunity cost — each extra unit of food costs more and more machines, because resources are not equally good at making both goods.

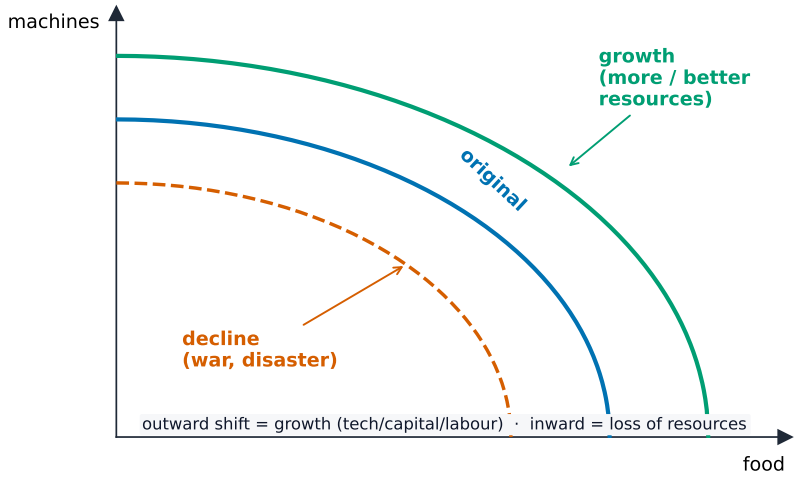


opportunity cost = goods forgone · bowed-out PPC ⇒ increasing opportunity cost

A straight PPC means each extra unit of food costs the same; a bowed PPC means each extra unit costs more and more machines.

Shifts and growth

When the PPC moves outward (to the right), the economy can make more of both goods. This is **economic growth** 经济增长. It happens when there are more resources, or better ones (new **technology** 技术, a bigger or more skilled workforce). War or disaster can move the PPC inward — this is **economic decline** 经济衰退.

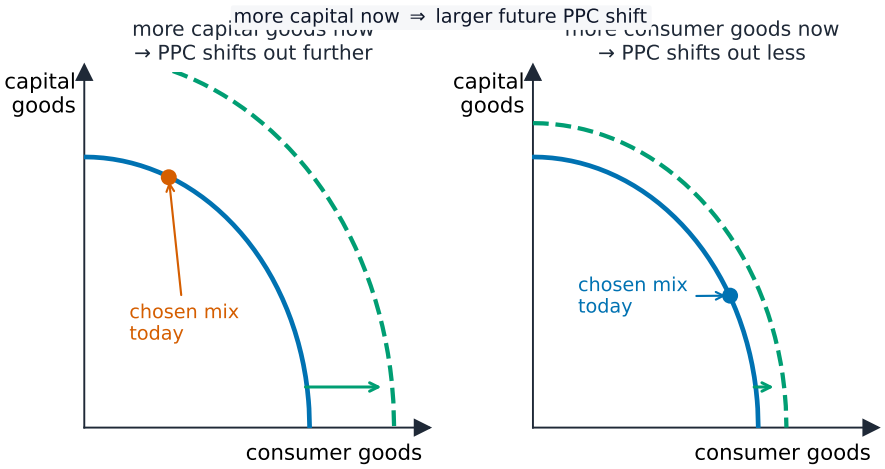


More or better resources shift the whole PPC outward (growth); war or disaster shifts it inward (decline).

A country must also choose between two kinds of good now:

- **capital goods** 资本品 — goods used to make other goods (machines, factories).
- **consumer goods** 消费品 — goods people use directly (food, clothes).

Making more capital goods today means fewer consumer goods today. But more capital goods help the economy grow faster, so the PPC shifts out by more in the future.



Choosing more capital goods today means fewer consumer goods now, but the future PPC shifts out further.

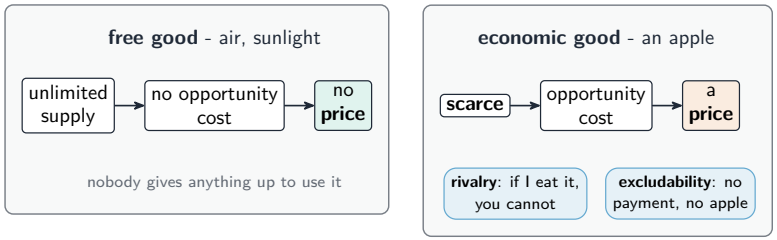
Worked example. Why is a production possibility curve usually drawn **concave** (bowed outwards) rather than as a straight line? A straight line would mean the opportunity cost of each extra unit stays **constant**. The curve bows out because factors of production are **not perfectly substitutable** - they are specialised. Starting from all-food production, the first factors moved into making cars are the ones **least suited** to farming, so very little food is given up for a lot of cars. Keep going and you must move factors that are **increasingly good at farming and increasingly bad at making cars**, so each extra car costs **more and more** food. That rising cost is **increasing opportunity cost**, and the bowed shape is simply its picture. A straight-line PPC is not wrong - it just assumes factors are perfectly substitutable, and naming that assumption is what earns the mark.

Types of goods and services

Free goods and economic goods

- a **free good** 免费物品 has no opportunity cost. Its supply is unlimited, so it has no price (for example, air or sunlight).
- an **economic good** 经济物品 (also called a **private good** 私人物品) is scarce. Making it has an opportunity cost, so it has a price.

A private good has two features. It has **rivalry** 竞争性 (if I eat the apple, you cannot) and **excludability** 排他性 (the seller can stop you using it unless you pay).



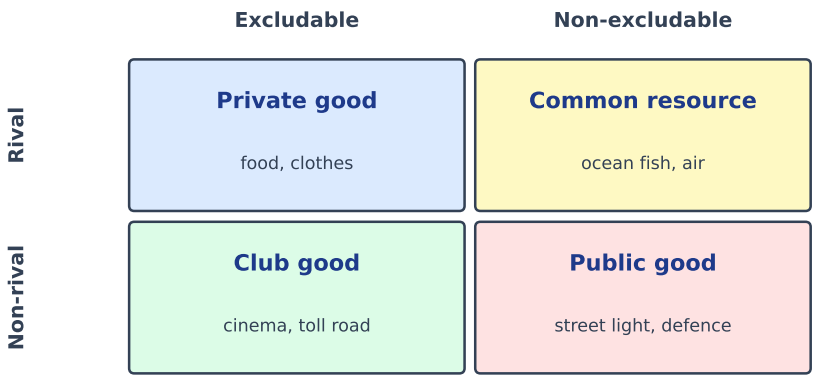
A free good has no opportunity cost and no price; an economic good is scarce, rival and excludable

Public goods

A **public good** 公共物品 is the opposite of a private good. It has two features:

- **non-rivalry** 非竞争性 — one person using it does not reduce the amount left for others.
- **non-excludability** 非排他性 — you cannot stop people who do not pay from using it.

Because of non-excludability, public goods suffer from the **free-rider problem** 搭便车问题: people enjoy the good without paying for it. So private firms cannot make a profit and will not supply it. The government must provide public goods instead — for example, street lighting and **national defence** 国防.



Exam: classify by rivalry × excludability — free-rider problem only for non-excludable goods

Rivalry and excludability give four types of good: private, club, common resource, and public.

Merit and demerit goods

- a **merit good** 优值品 is better for you (and for society) than you realise, so people buy too little of it. Examples: education and health care.
- a **demerit good** 劣值品 is worse for you than you realise, so people buy too much of it. Examples: cigarettes and alcohol.

Education is a classic merit good. Its full value — better jobs, and a more skilled society — is easy to underestimate, so left to themselves people buy less of it than is good for them or the country. That is why governments provide and subsidise it

People misjudge these goods because of **information failure** 信息失灵 — they do not have, or do not use, the full facts about the benefit or harm.

Deciding what counts as a merit or demerit good is partly a value judgement, so people may disagree about which goods belong on each list.

Exam tips

- Frame answers around **scarcity and choice**: every choice has an **opportunity cost** — the next best alternative given up.
- Read a **PPC**: a point inside means unused resources, on the curve is efficient, outside is unattainable; the slope shows opportunity cost.
- Distinguish **positive** (a testable fact) from **normative** ("should", a value judgement) statements.
- Classify goods: free versus economic, and **public / merit / demerit** goods (non-excludable, non-rival, and so on).

The price system and the microeconomy

A-Level Economics

Demand

demand 需求 is the quantity of a good that buyers are willing and able to buy at each **price** 价格 in a period of time. It is not just a wish — buyers must also be able to pay.

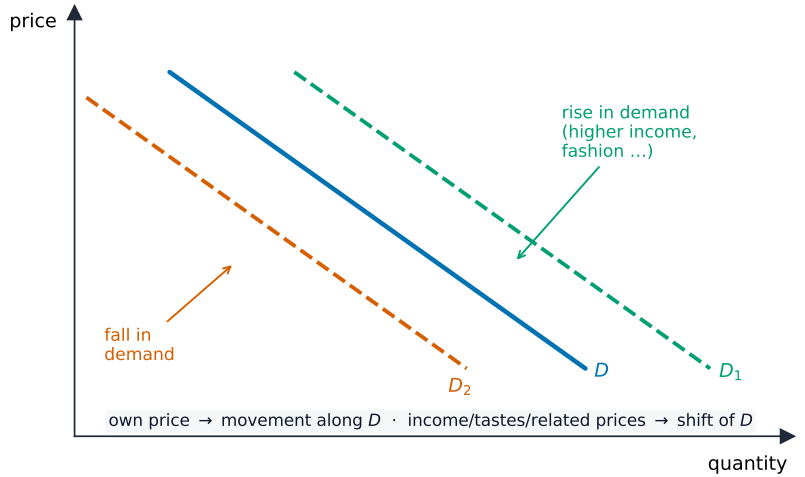
The **law of demand** says: when the price rises, the **quantity demanded** 需求量 falls; when the price falls, the quantity demanded rises. Price and quantity move in opposite directions.

So the **demand curve** 需求曲线 slopes downward, from top-left to bottom-right.

What shifts the demand curve

A change in the good's **own price** is shown as a *movement along* the demand curve. A change in any other cause shifts the whole curve to a new position — this is a **shift** 移动 of demand. The main causes (the **determinants** 决定因素) are:

- **income** 收入 — for most goods, higher income raises demand.
- the price of a **substitute** 替代品 — a good you can use instead (tea for coffee). If the substitute's price rises, demand for this good rises.
- the price of a **complement** 互补品 — a good used together with this one (cars and petrol). If the complement's price rises, demand for this good falls.
- tastes and fashion, the size of the population, and advertising.



A change in income, tastes or related prices shifts the whole curve (D_1 right, D_2 left); a change in the good's own price is a movement along it.

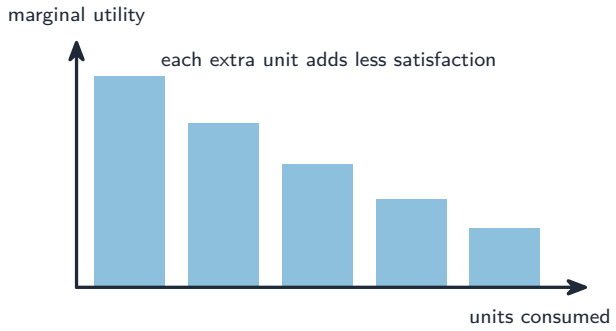
Individual and market demand

One **consumer** 消费者 has an individual demand. The **market demand** 市场需求 is found by adding up the quantity that all consumers want at each price (adding the curves sideways).

Marginal utility and demand

utility 效用 is the satisfaction you get from consuming a good. **marginal utility** 边际效用 is the extra utility from one more unit.

The law of **diminishing marginal utility** 边际效用递减 says each extra unit gives less extra satisfaction than the one before. Because later units are worth less to you, you will only buy them at a lower price. This is why the demand curve slopes downward.



Each extra unit adds less satisfaction than the last — so buyers will only pay less for later units, which is why demand slopes downward

Supply

supply 供给 is the quantity of a good that **producers** 生产者 are willing and able to sell at each price in a period of time.

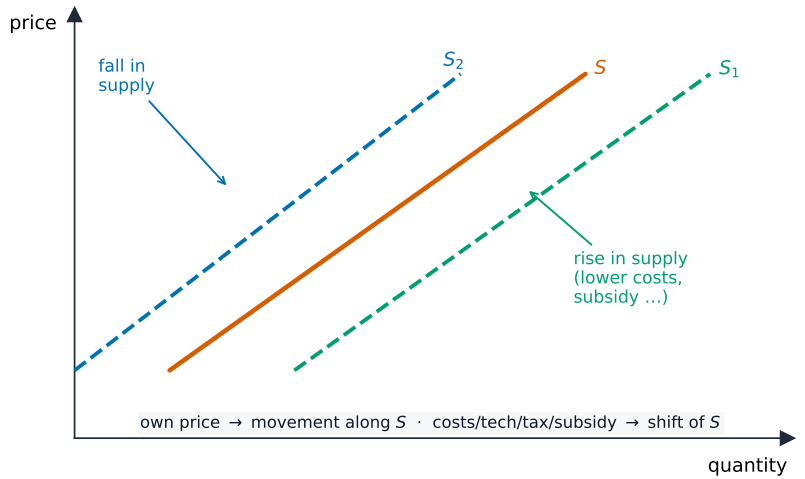
The **law of supply** says: when the price rises, the **quantity supplied** 供给量 rises. Higher prices mean more **profit** 利润, so firms make more. So the **supply curve** 供给曲线 slopes upward.

What shifts the supply curve

A change in the good's own price is a movement along the supply curve. Other causes shift the whole curve:

- **costs of production** 生产成本 — if wages, raw materials or rent get dearer, supply falls.
- technology — better machines raise supply.

- a **subsidy** 补贴 (government payment to producers) raises supply; an indirect tax lowers it.
- the number of **firms** 企业 in the market, and weather (for farm goods).



Lower costs, better technology or a subsidy shift supply right (S_1); higher costs or a tax shift it left (S_2).

Individual and market supply

The **market supply** 市场供给 is found by adding up the quantity all firms will sell at each price.

Price elasticity of demand

price elasticity of demand 需求价格弹性 (PED) measures how much the quantity demanded responds when the price changes.

$$\text{PED} = \frac{\%\text{ change in quantity demanded}}{\%\text{ change in price}}$$

PED is normally negative (because of the law of demand), but we usually look at the size and drop the minus sign.

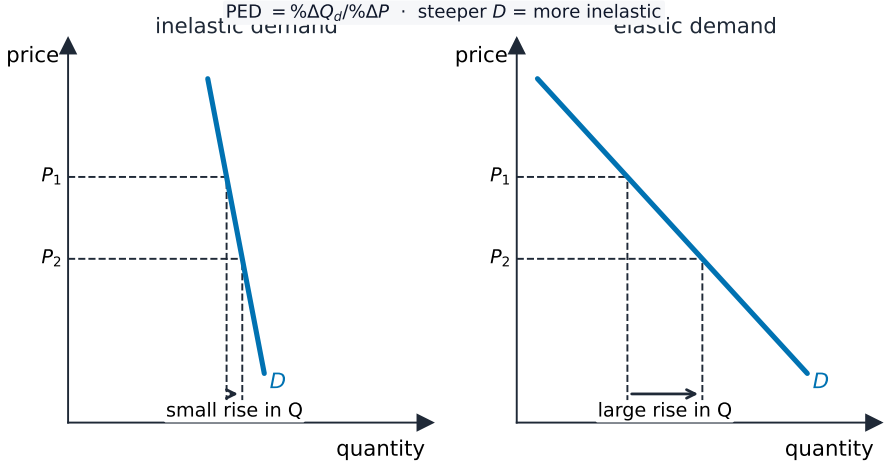
Worked example. The price of a good rises by 10% and the quantity demanded falls by 25%. Find the PED and classify the demand.

$$\text{PED} = \frac{-25}{10} = -2.5$$

Ignoring the minus sign, $2.5 > 1$, so demand is elastic — quantity responded much more than the price did.

Petrol has price-inelastic demand: drivers must buy it, so a higher price cuts the quantity bought only a little.

Value	Name	Meaning
more than 1	**elastic** 富有弹性	quantity responds a lot
less than 1	**inelastic** 缺乏弹性	quantity responds a little
equal to 1	**unit elastic** 单位弹性	quantity changes by the same % as price
0	**perfectly inelastic** 完全无弹性	quantity does not change at all
infinity	**perfectly elastic** 完全有弹性	any price rise sends demand to zero



When demand is inelastic (steep), a price change barely moves quantity; when it is elastic (shallow), the same price change moves quantity a lot.

What makes demand elastic or inelastic

- the number and closeness of substitutes (more substitutes → more elastic).
- whether the good is a **necessity** 必需品 (inelastic) or a **luxury** 奢侈品 (elastic).
- the share of income spent on the good (a large share → more elastic).
- time — demand is more elastic in the long run, when buyers can find other options.
- habit or addiction makes demand inelastic.

PED and total revenue

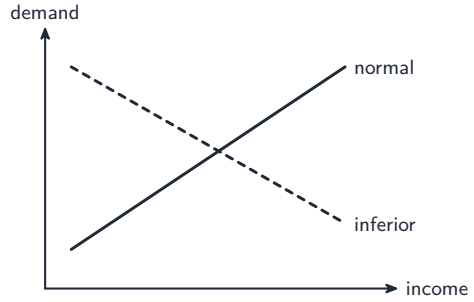
total revenue 总收益 is the money a firm earns: TR = price × quantity. PED tells a firm what happens to revenue when it changes the price:

If demand is...	price rises	price falls
inelastic	total revenue rises	total revenue falls
elastic	total revenue falls	total revenue rises
unit elastic	total revenue stays the same	total revenue stays the same

This is useful to firms (how to price for more revenue) and to **governments** 政府 (a tax on an inelastic good, like petrol, raises a lot of revenue without cutting sales much).

Income elasticity of demand

income elasticity of demand 需求收入弹性 (YED) measures how much demand responds when income changes.



As income rises, demand for a normal good rises but an inferior good falls

$$\text{YED} = \frac{\%\text{ change in quantity demanded}}{\%\text{ change in income}}$$

- a **normal good** 正常品 has positive YED: demand rises as income rises. Necessities have YED between 0 and 1; luxuries have YED above 1.
- an **inferior good** 低档品 has negative YED: demand falls as income rises (people switch to better goods). An example is cheap instant noodles.

Worked example. A person's income rises by 20% and their demand for restaurant meals rises by 30%. Find the YED and classify the good.

$$\text{YED} = \frac{+30}{+20} = +1.5$$

YED is positive and greater than 1, so restaurant meals are a normal good — and a luxury.

This helps firms plan: as incomes grow, demand for luxuries grows fastest.

Cross elasticity of demand

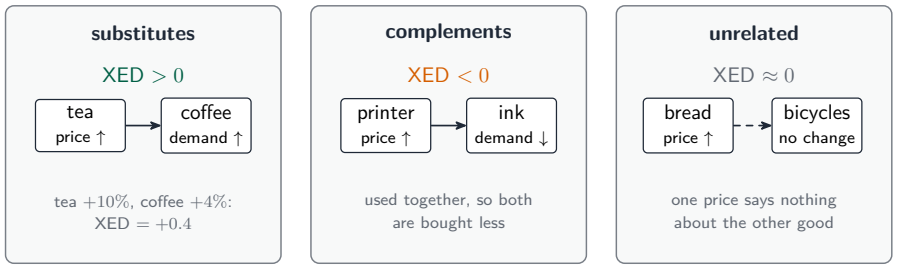
cross elasticity of demand 需求交叉弹性 (XED) measures how much demand for one good responds when the price of *another* good changes.

$$\text{XED} = \frac{\%\text{ change in quantity demanded of A}}{\%\text{ change in price of B}}$$

- for **substitutes**, XED is positive (the price of B rises, so people buy more A).
- for **complements**, XED is negative (the price of B rises, so people buy less A and less B).
- for goods that are not related, XED is about zero.

Worked example. When the price of tea rises by 10%, the quantity of coffee demanded rises by 4%. Find the XED and say how the two goods are related.

$$\text{XED} = \frac{+4}{+10} = +0.4$$



The sign of XED: positive for substitutes, negative for complements, about zero for unrelated goods

XED is positive, so tea and coffee are substitutes.

This helps a firm watch its rivals: if XED with a rival's good is high and positive, a price cut by the rival will hurt its sales.

Price elasticity of supply

price elasticity of supply 供给价格弹性 (PES) measures how much the quantity supplied responds when the price changes.

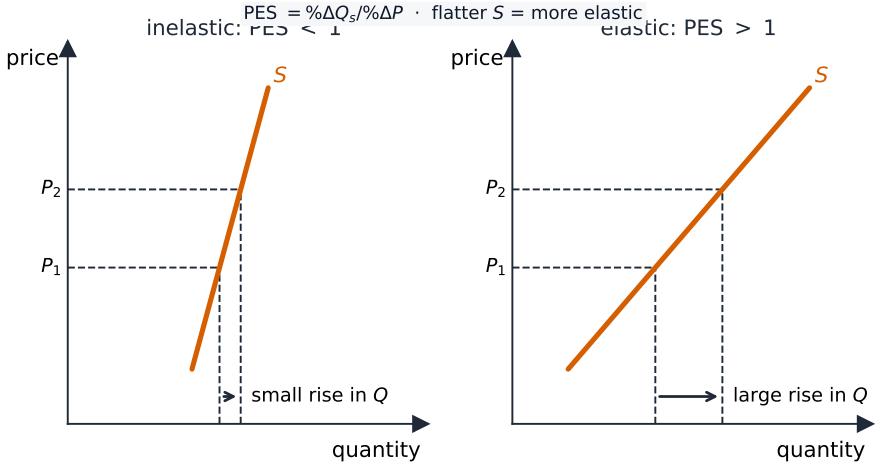
$$\text{PES} = \frac{\%\text{ change in quantity supplied}}{\%\text{ change in price}}$$

PES is positive. Supply is elastic if it responds a lot, inelastic if it responds little.

Worked example. The price of a good rises by 8% and the quantity supplied rises by 4%. Find the PES.

$$\text{PES} = \frac{4}{8} = 0.5$$

PES is less than 1, so supply is inelastic.



The same price rise: a small supply response when PES is below 1, a large one when PES is above 1

What makes supply more elastic:

- **spare capacity** 闲置产能 — unused machines and workers, so firms can quickly make more.
- **stocks** 库存 — goods stored in a warehouse that can be sold fast.
- how easily factors of production can move into the industry.

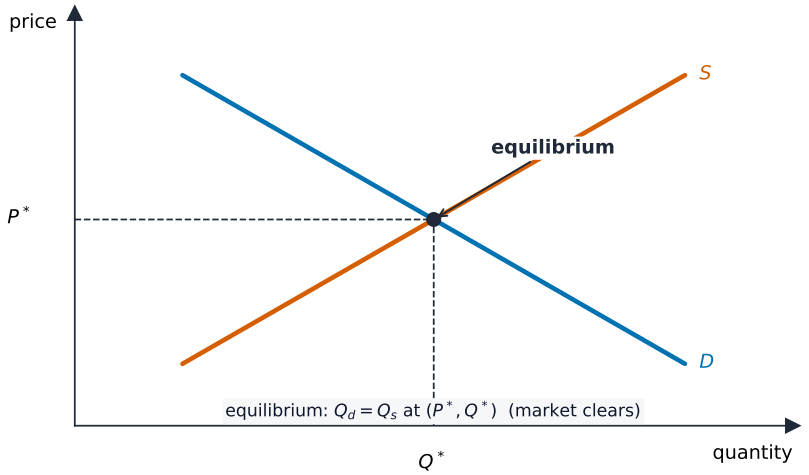
- time. Economists split time into three periods:
  - the **momentary** 瞬时 period — supply is fixed; PES is zero.
  - the **short run** 短期 — at least one factor is fixed, so supply can rise only a little.
  - the **long run** 长期 — all factors can change, so supply is most elastic.

The interaction of demand and supply

In a market, buyers and sellers meet and the price settles where demand equals supply

Equilibrium

The market is in **equilibrium** 均衡 where the demand curve crosses the supply curve. Here demand equals supply. This gives the **equilibrium price** 均衡价格 and the **equilibrium quantity** 均衡数量. There is no pressure for the price to change.



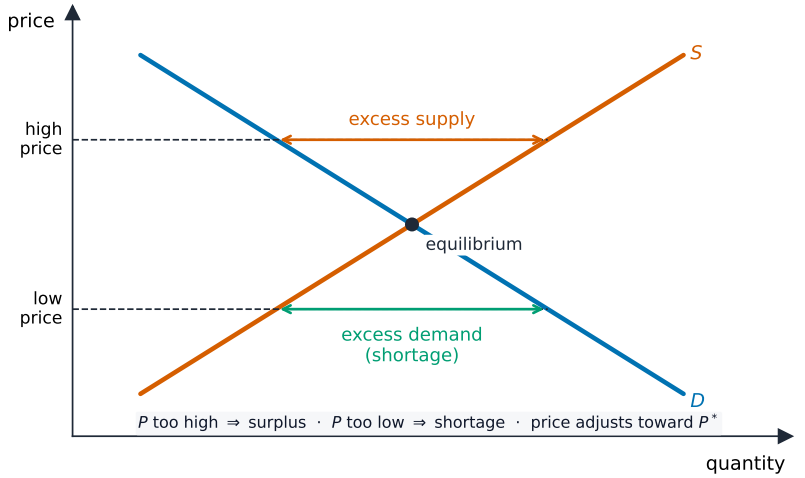
At the equilibrium price P^* and quantity Q^* the curves cross, so quantity demanded equals quantity supplied.

Disequilibrium

When the price is not at equilibrium, the market is in **disequilibrium** 非均衡:

- if the price is **too low**, there is **excess demand** 超额需求 (a **shortage** 短缺). Buyers compete, so the price is pushed up.
- if the price is **too high**, there is **excess supply** 超额供给. Sellers cannot sell everything, so the price is pushed down.

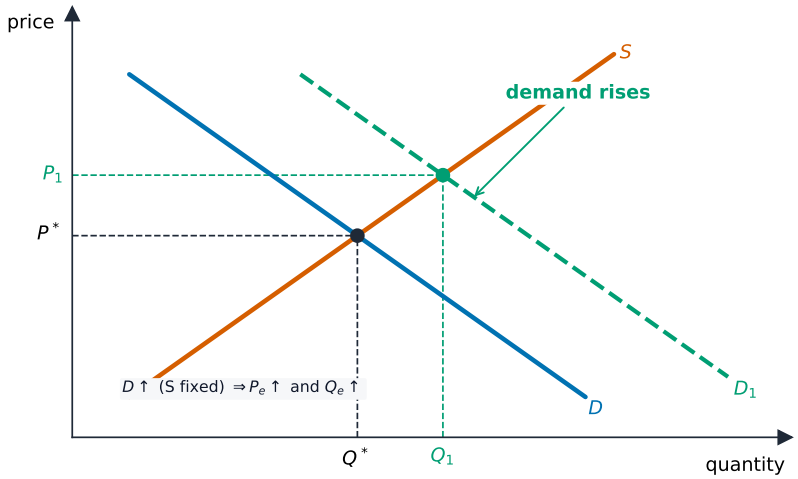
In both cases the price moves back to equilibrium. This shows the price mechanism doing its jobs of signalling, rationing and giving an incentive.



Above the equilibrium price there is excess supply; below it there is excess demand (a shortage). Either way the price is pushed back to equilibrium.

How shifts change the equilibrium

Change	Effect on price	Effect on quantity
demand rises (shifts right)	rises	rises
demand falls (shifts left)	falls	falls
supply rises (shifts right)	falls	rises
supply falls (shifts left)	rises	falls



With supply fixed, a rise in demand ($D \to D_1$) raises both the equilibrium price and the equilibrium quantity.

Demand and supply in different markets

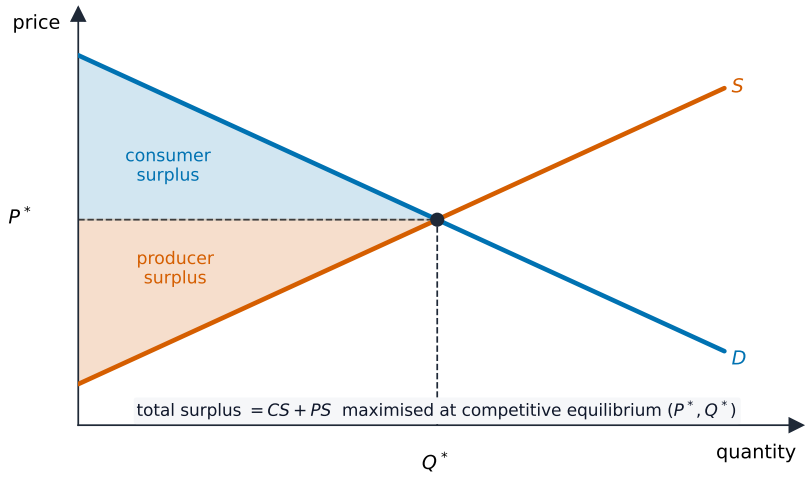
The same analysis works in many markets:

- in **product markets** 产品市场, demand and supply set the price of goods and services.
- in **factor markets** 要素市场, they set the price of factors — for example, the demand for and supply of labour set the **wage** 工资.
- in the **foreign exchange market** 外汇市场, the demand for and supply of a currency set the **exchange rate** 汇率 (the price of one currency in terms of another).

Consumer and producer surplus

consumer surplus 消费者剩余 is the gain to buyers. It is the difference between the most a consumer was willing to pay and the price actually paid. On a diagram it is the area below the demand curve and above the price line.

producer surplus 生产者剩余 is the gain to sellers. It is the difference between the price a producer receives and the lowest price the producer would have accepted. On a diagram it is the area above the supply curve and below the price line.



Consumer surplus is the area below demand and above the price; producer surplus is the area above supply and below the price.

How they change:

- if demand rises, the price and quantity rise, so producer surplus rises and consumer surplus usually rises too.
- if supply rises, the price falls and quantity rises, so consumer surplus rises.
- a higher price (with the curves fixed) raises producer surplus but lowers consumer surplus.

Together, consumer surplus plus producer surplus is the total **welfare** 福利 (gain to society) from the market. It is largest at the free-market equilibrium.

Exam tips

- Quote the **elasticity formula** and interpret the value: PED inelastic (< 1), elastic (> 1); link PED to total revenue.
- Distinguish a **movement along** (a price change) from a **shift** (a non-price factor) of demand or supply.
- Use the **sign** of XED (substitutes +, complements −) and YED (normal +, inferior −).
- On a diagram, label **consumer and producer surplus** and show how a price change alters each.

Government microeconomic intervention

A-Level Economics

Why markets fail

A free market often gives a good result, but not always. **market failure** 市场失灵 is when the market does not **allocate** 配置 (share out) resources efficiently — too much or too little of a good is made. Then the government may step in.

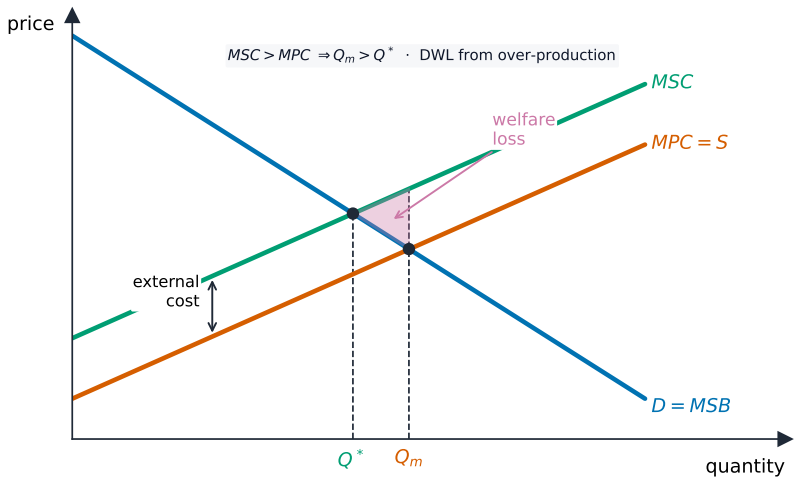
There are several reasons for market failure.

A coal power station: producing electricity can impose a negative externality such as pollution on people who are not part of the deal.

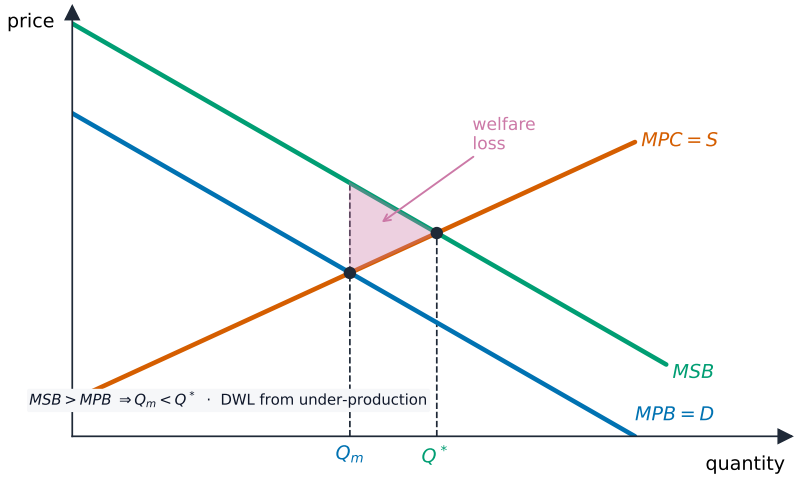
Externalities

An **externality** 外部性 is a cost or a benefit that falls on a **third party** 第三方 — someone who is not the buyer or the seller.

- a **negative externality** 负外部性 is an **external cost** 外部成本 paid by others, like the pollution from a factory. The **social cost** 社会成本 (the cost to all of society) is bigger than the **private cost** 私人成本 (the cost to the producer). When people ignore the external cost, the market makes **too much** of the good.
- a **positive externality** 正外部性 is an **external benefit** 外部收益 enjoyed by others, like the protection that vaccination gives to everyone. Here the market makes **too little**, because buyers ignore the benefit to others.



With a negative externality, social cost (MSC) is above private cost (MPC), so the market over-produces at Q_m instead of the social optimum Q^*; the shaded triangle is the welfare loss.



With a positive externality, social benefit (MSB) is above private benefit (MPB), so the market under-produces at Q_m instead of the social optimum Q^*.

Public goods

A **public good** 公共物品 (like street lighting or national defence) has **non-rivalry** 非竞争性 and **non-excludability** 非排他性. Because non-payers cannot be shut out, there is a **free-rider problem** 搭便车问题, so private firms make no profit and supply none. The market fails completely.

Merit and demerit goods

A **merit good** 优值品 (like education) is under-consumed; a **demerit good** 劣值品 (like cigarettes) is over-consumed. People misjudge them because of **information failure** 信息失灵 — they do not know, or do not use, the true benefit or harm.

Monopoly power

monopoly 垄断 means one firm dominates a market. A firm with **monopoly power** 垄断势力 can cut output and raise the price above the competitive level. This wastes resources and harms consumers.

Inequality and asymmetric information

- the market rewards people who own resources, so it can produce great **inequality** 不平等 — some people are left with too little to live on.
- **asymmetric information** 信息不对称 is when one side of a deal knows more than the other (a used-car seller knows the faults; the buyer does not). This leads to poor decisions and unfair deals.

Methods of government intervention

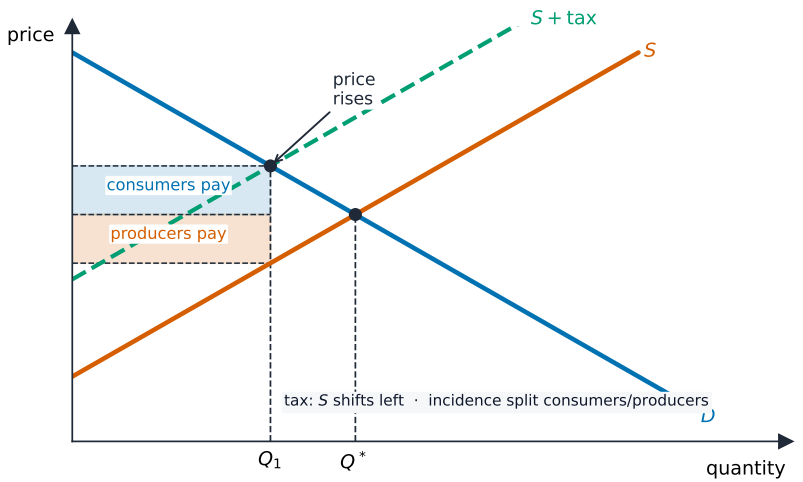
Indirect taxes

An **indirect tax** 间接税 is a tax on spending. It raises a firm's costs, shifts the supply curve to the left, and so raises the price and cuts the quantity. Governments tax demerit goods (like tobacco) and goods with negative externalities to make people use less.

Cigarettes are a demerit good — overconsumed because people misjudge the harm — so governments tax them heavily.

The **incidence of a tax** 税收归宿 is who really pays it. This depends on elasticity:

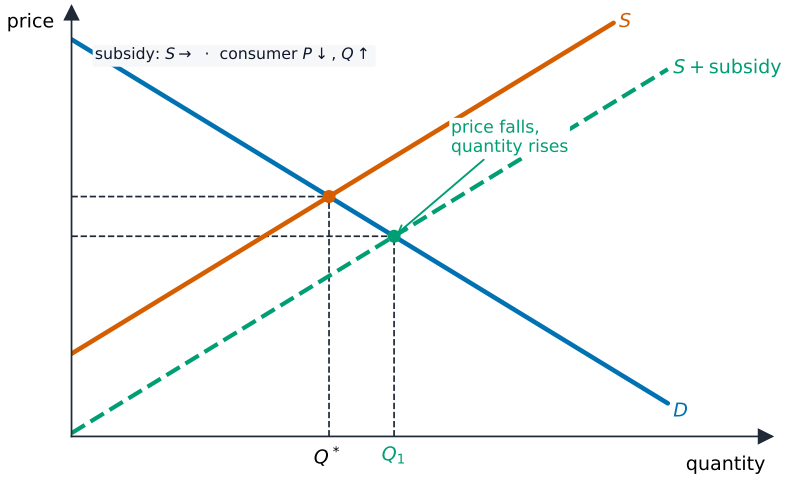
- if demand is **inelastic** 缺乏弹性, consumers pay most of the tax (the price rises by nearly the full tax).
- if demand is **elastic** 富有弹性, producers pay most of the tax (they cannot pass it on).



An indirect tax shifts supply up to $S + tax$, raising the price and cutting the quantity; the burden is shared between consumers and producers.

Subsidies

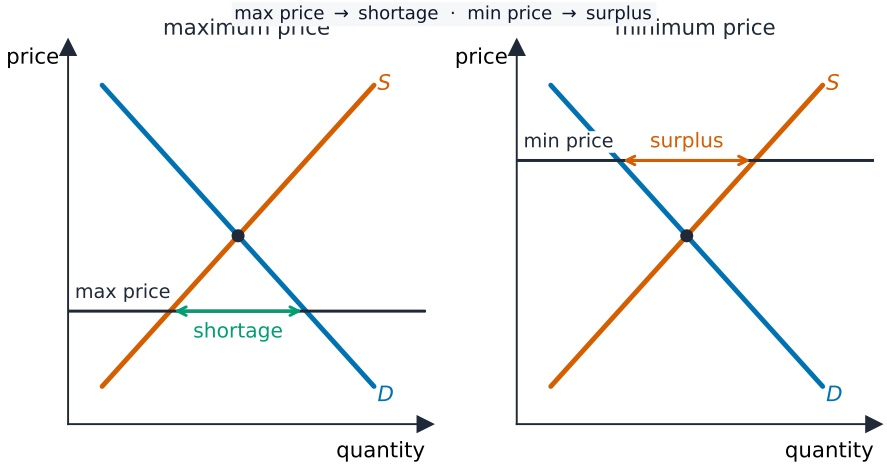
A **subsidy** 补贴 is a government payment to producers. It lowers their costs, shifts the supply curve to the right, and so lowers the price and raises the quantity. Subsidies are used for merit goods and goods with positive externalities.



A subsidy shifts supply down to S + subsidy, lowering the price and raising the quantity traded.

Maximum and minimum prices

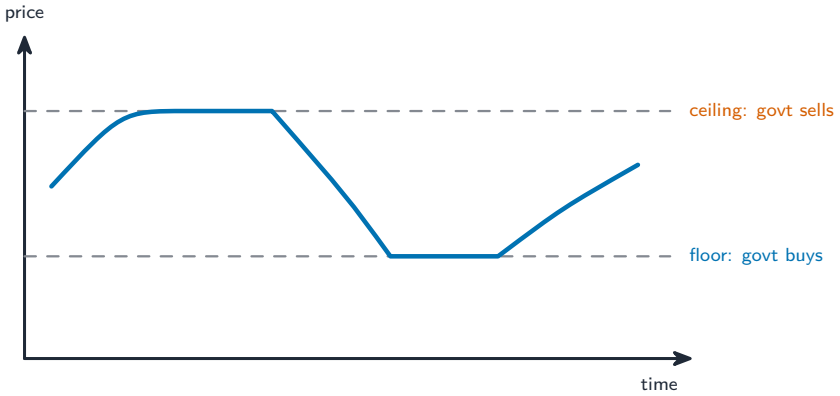
- a **maximum price** 最高限价 is a legal top price, set **below** equilibrium (for example, rent control). Because the price is held down, quantity demanded is greater than quantity supplied, so there is a **shortage** 短缺.
- a **minimum price** 最低限价 is a legal bottom price, set **above** equilibrium (for example, a minimum wage, or a floor for farm prices). Because the price is held up, quantity supplied is greater than quantity demanded, so there is **excess supply** 超额供给.



A maximum price set below equilibrium leaves a shortage; a minimum price set above equilibrium leaves a surplus.

Buffer stocks

A **buffer stock** 缓冲库存 is used to steady the price of farm goods. The government buys and stores the good when the price is low, and sells from the store when the price is high. This keeps the price inside a target band.



A buffer stock holds the price in a band: the government buys when it hits the floor and sells when it hits the ceiling

Regulation, provision and permits

- **regulation** 管制 means rules and laws — bans, age limits, safety standards, or pollution limits.
- **state provision** 政府提供 means the **government** 政府 supplies a good directly, often free at the point of use (public goods and merit goods like schools and hospitals).
- **tradable permits** 可交易许可证 set a total cap on pollution and give firms permits to pollute. Firms that pollute less can sell spare permits to firms that pollute more. This caps total pollution at the lowest cost.

Government failure

Intervention does not always help. **government failure** 政府失灵 is when the government's action makes the use of resources **worse**, not better. Common causes:

- poor information, so the government sets the wrong tax or subsidy.
- high cost of running the policy.

- unintended results — for example, a maximum price can create an illegal **black market** 黑市.
- decisions made for political reasons rather than for efficiency.

Worked example. A government puts a £2 per-packet tax on cigarettes, whose demand is very **price-inelastic**. Who really pays it, and what does that mean for the policy's two aims? The **incidence** falls mainly on whichever side is **less able to respond** - the more inelastic one. Because smokers keep buying almost the same quantity as the price rises, producers can pass most of the tax on, so **consumers bear most of the incidence**: the price might rise by about £1.80, with producers absorbing only about £0.20. That creates the tension the question is really testing. As a **revenue raiser** the tax succeeds: quantity barely falls, so revenue is large and steady. As a way of **cutting consumption** it largely fails - for exactly the same reason. And because poorer smokers spend a larger share of their income on it, the tax is **regressive**. Argue from **elasticity** to incidence, then judge each aim separately.

Income and wealth inequality

It helps to separate two ideas:

- **income** 收入 is a **flow** 流量 — money received over a period, such as wages, rent and interest.
- **wealth** 财富 is a **stock** 存量 — the value of assets owned at a point in time, such as houses, shares and savings.

Wealth produces income (savings earn interest), and income can be saved to build wealth, so the two are linked. Inequality has many causes: differences in skills and wages, the ownership of wealth, inheritance, and unemployment.

Policies to reduce inequality

- a **progressive tax** 累进税 takes a larger **percentage** 百分比 from higher incomes than from lower incomes. This narrows the gap after tax.
- **benefits** 福利金 (also called **transfer payments** 转移支付) are money paid by the government to the poor, the old, and the unemployed.
- **state provision** of free services, like education and health care, raises the real living standards of poorer people.

Together these policies bring about **redistribution** 再分配 — moving income and wealth from richer to poorer people. But there is a **trade-off** 取舍: very high taxes and large benefits may weaken the **incentive** 激励 to work and to invest.

Wealth and poverty side by side: markets alone may leave large income inequality unaddressed

Exam tips

- Define **market failure** as a misallocation of resources, then name the type (externality, public good, information gap).
- On an **externality** diagram, mark the divergence of private and social cost/benefit and shade the welfare loss.
- Evaluate each intervention (tax, subsidy, regulation, tradable permits) with one advantage and one drawback.
- Show that **tax incidence** depends on elasticity — the more inelastic side bears more of the tax.

The macroeconomy

A-Level Economics

Macroeconomics 宏观经济学 looks at the whole economy at once: its total output, its jobs, and its prices. This handout covers how we measure the economy and the main problems it can face.

National income statistics

To judge how an economy is doing, we measure its **national income** 国民收入 — the total value of everything it produces in a year.

National income (GDP) is the value of all the goods and services a country produces in a year.

- **gross domestic product** 国内生产总值 (GDP) is the value of all goods and services made **inside** a country in a year.
- **gross national income** 国民总收入 (GNI) is GDP plus the income a country's people and firms earn **abroad**, minus income foreigners earn inside it.

Two important differences:

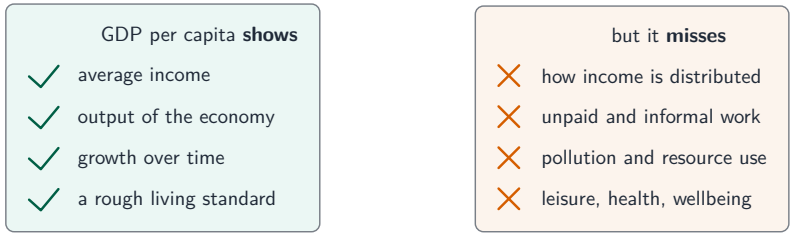
- **nominal** 名义 values are measured at current prices. **real** 实际 values are adjusted to remove the effect of rising prices, so they show the true change in output. Always compare real values over time.
- **total** values cover the whole country. **per capita** 人均 values are divided by the population, so they show the average per person.

Uses and limitations

National income is used to measure the **standard of living** 生活水平 and to compare countries. But it has limits:

- it ignores the **distribution** 分配 of income — a high average can hide great inequality.
- it leaves out unpaid work (housework) and the **informal economy** 非正规经济 (hidden, untaxed activity).
- it says nothing about pollution, leisure time, or health.

So a higher GDP per capita usually means a better life, but not always.



GDP per capita shows average income and output, but misses distribution, unpaid work and pollution

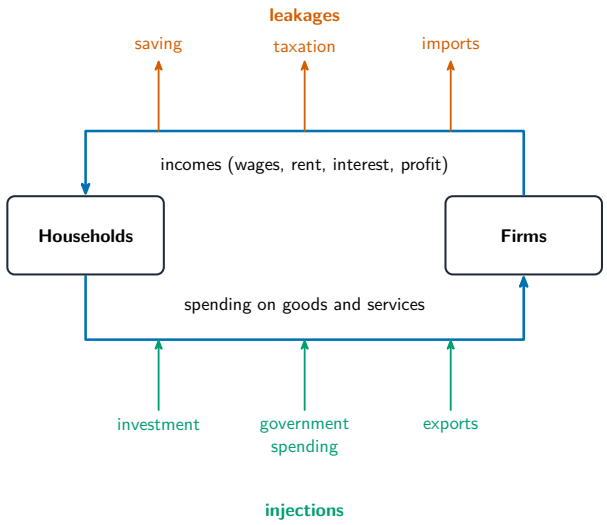
The circular flow of income

The **circular flow of income** 收入循环流 shows money moving around the economy. **Households** 家庭 supply factors of production to **firms** 企业 and receive income (wages, rent, interest, profit). They spend that income on goods and services, and the money flows back to firms.

Money also leaves and enters this flow:

- **leakages** 漏出 take money **out** of the flow: **saving** 储蓄, **taxation** 税收, and spending on **imports** 进口.
- **injections** 注入 put money **into** the flow: **investment** 投资, **government spending** 政府支出, and **exports** 出口.

The flow is in **equilibrium** 均衡 when total injections equal total leakages. If injections are greater, the economy grows; if leakages are greater, it shrinks.



Money loops between households and firms; leakages (saving, taxation, imports) drain it, while injections (investment, government spending, exports) add to it.

A **closed economy** 封闭经济 has no trade with other countries. An **open economy** 开放经济 trades, so it has exports and imports.

Aggregate demand and aggregate supply

Aggregate demand

aggregate demand 总需求 (AD) is the total spending on a country's goods and services at each price level. It has four parts:

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

- **C** is **consumption** 消费 — spending by households.
- **I** is **investment** — spending by firms on capital.
- **G** is **government spending**.
- **(X — M)** is **net exports** 净出口 — exports minus imports.

$AD = C + I + G + (X - M)$: total spending on a country's goods and services

Aggregate demand is total spending: consumption, investment, government spending and net exports

The AD curve slopes downward: a lower price level means higher real spending, so a greater real output is demanded. AD shifts when any of its four parts changes (for example, a tax cut raises C).

Aggregate supply

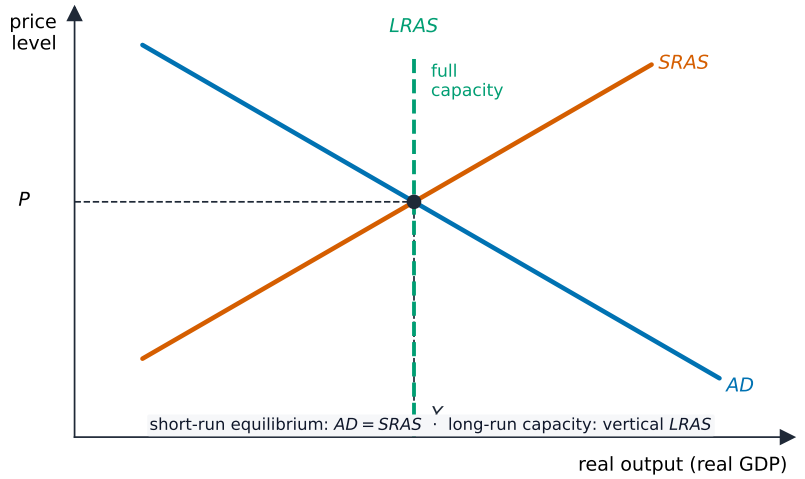
aggregate supply 总供给 (AS) is the total output firms are willing to make at each price level.

- **short-run aggregate supply** 短期总供给 (SRAS) slopes upward. In the short run, higher prices make production more profitable, so firms supply more. SRAS shifts when costs change (wages, raw materials, taxes).

- **long-run aggregate supply** 长期总供给 (LRAS) shows the economy's full **productive capacity** 生产能力. It shifts only when the quantity or quality of factors changes.

Macroeconomic equilibrium

macroeconomic equilibrium 宏观经济均衡 is where AD crosses AS. It sets the **price level** 价格水平 and the **real output** 实际产出 of the economy. A shift in AD or AS changes both.



Equilibrium sets the price level P and real output Y where AD meets short-run AS; vertical LRAS marks full capacity.

Economic growth

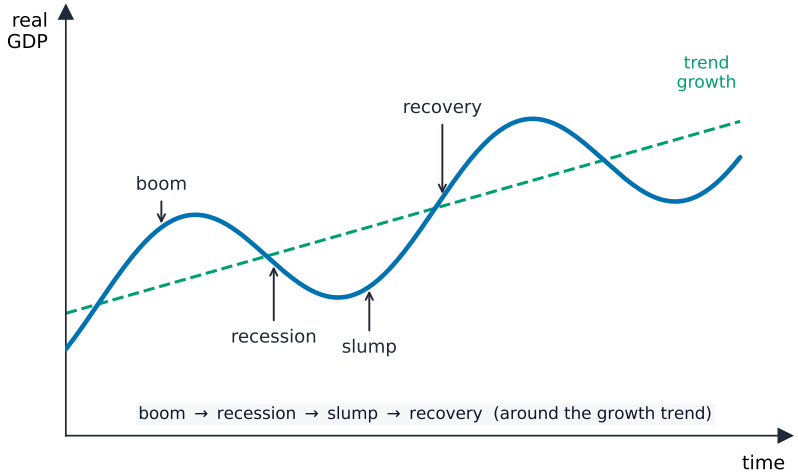
economic growth 经济增长 is a rise in a country's real output (real GDP) over time.

- **actual growth** 实际增长 is the rise in output that really happens (a movement to a point further out, or from inside the LRAS towards it).
- **potential growth** 潜在增长 is the rise in the economy's capacity (the LRAS shifting outward).

Growth is caused by more or better factors of production: a bigger or more skilled workforce, more investment in capital, new technology, and higher **productivity** 生产率 (output per worker).

The business cycle

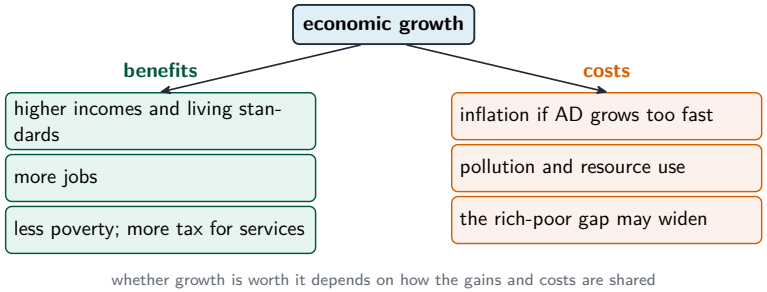
Real output does not grow smoothly. The **business cycle** 经济周期 (also called the trade cycle) is the up-and-down pattern of output over the years. It has four phases: **boom** 繁荣 (fast growth), **recession** 衰退 (falling output), **slump** 萧条 (the low point), and **recovery** 复苏.



Real GDP swings through boom, recession, slump and recovery around its rising long-run trend.

Costs and benefits of growth

Benefits	Costs
higher incomes and living standards	can cause inflation if AD grows too fast
more jobs	pollution and use of resources
less poverty; more tax for public services	the gap between rich and poor may widen



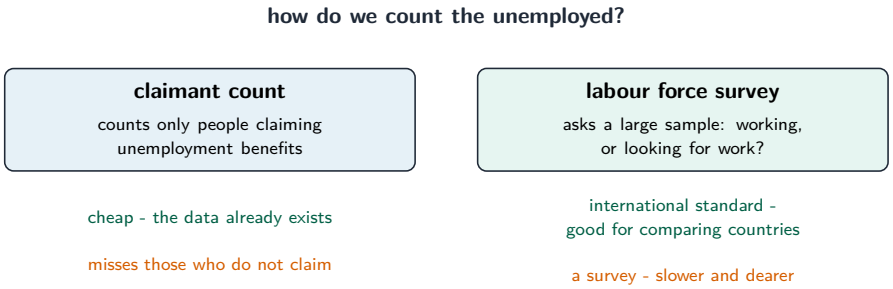
Economic growth brings higher incomes and jobs, but can bring inflation, pollution and inequality

Unemployment

unemployment 失业 means people who are able and willing to work, and are looking for a job, but cannot find one.

Measuring unemployment

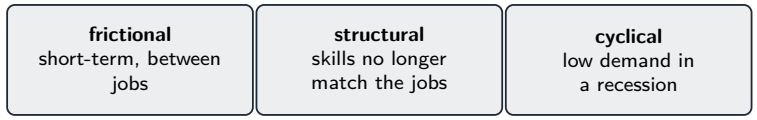
- the **claimant count** 申领救济人数 counts only people claiming unemployment benefits. It is cheap but misses those who do not claim.
- the **labour force survey** 劳动力调查 asks a large sample whether they are working or seeking work. It follows an international standard, so it is better for comparing countries. The **labour force** 劳动力 is everyone working or looking for work.



Two ways to count the unemployed - and what each one misses

Types and causes

- **frictional unemployment** 摩擦性失业 — short-term, while people move between jobs.
- **structural unemployment** 结构性失业 — when an industry declines and workers' skills no longer match the jobs available.
- **cyclical unemployment** 周期性失业 — caused by low AD in a recession. This is usually the largest type.
- **seasonal unemployment** 季节性失业 — when work is only available at certain times of the year (such as farming or tourism).



Three types of unemployment: frictional, structural and cyclical

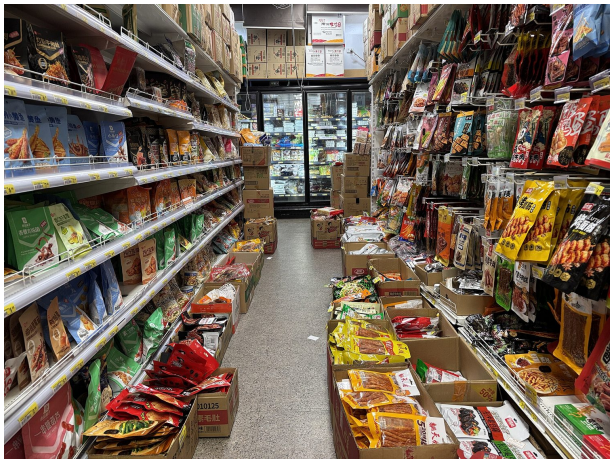
Consequences

Unemployment wastes output (the economy produces inside its PPC), lowers incomes, and costs the government (more benefits, less tax). It also harms families and can raise crime and ill health.

Price stability

Inflation, deflation and disinflation

- **inflation** 通货膨胀 is a sustained rise in the general price level. Money then buys less, so its **purchasing power** 购买力 falls.
- **deflation** 通货紧缩 is a sustained fall in the general price level.
- **disinflation** 反通货膨胀 is when inflation is still positive but is slowing down (prices rise, but more slowly).



Inflation is measured from the price of a basket of everyday goods like these.

The price level is measured with the **consumer price index** 消费者价格指数 (CPI). A typical household's spending is used to build a "basket" of goods. Each good is given a **weight** 权重 for how much is spent on it, and the change in the basket's cost from year to year is the inflation rate:

$$\text{inflation rate} = \frac{\text{change in index}}{\text{starting index}} \times 100\%.$$

Worked example. A country's CPI rises from 100 to 104 over one year, then to 107 the year after. Find the inflation rate in each year.

Year 1: $\frac{104-100}{100} \times 100\% = 4\%$. Year 2: $\frac{107-104}{104} \times 100\% = 2.9\%$.

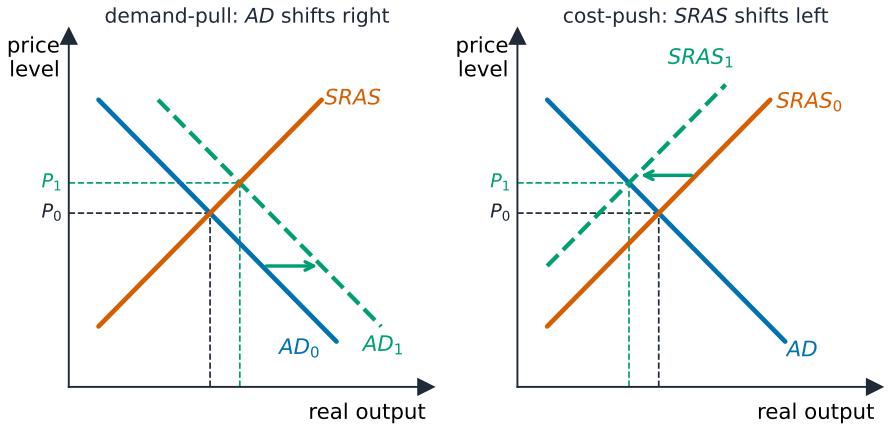
Notice that prices are still **rising** in year 2, just more slowly — this fall in the inflation rate (from 4% to 2.9%) is disinflation, not deflation.

Worked example. A worker's wage rises from £500 to £520 a week (a 4% rise) while the CPI rises by 4%. What happens to the **real wage**?

Money (nominal) pay is up 4%, but prices are also up 4%, so the real wage — what the pay can actually buy — is unchanged. A pay rise only raises living standards if it beats inflation.

Causes of inflation

- **demand-pull inflation** 需求拉动型通货膨胀 — AD rises faster than AS, so "too much money chases too few goods".
- **cost-push inflation** 成本推动型通货膨胀 — firms' costs rise (wages or raw materials), so they raise prices, shifting SRAS to the left.



demand-pull: *AD* shifts right · cost-push: *SRAS* shifts left (higher *P*, lower *Y*)

Demand-pull inflation comes from AD shifting right; cost-push inflation comes from SRAS shifting left. Both raise the price level.

Consequences

Inflation lowers purchasing power, especially for people on fixed incomes. It creates uncertainty, can make a country's exports dearer, and helps borrowers but harms savers. Deflation sounds good but can be harmful: people delay buying (waiting for lower prices), so AD falls, firms cut output, and unemployment rises.

Exam tips

- Distinguish **real vs nominal** (real removes inflation) and calculate an **inflation rate** from a price index.
- Explain **AD** $= C + I + G + (X - M)$ and what shifts each part; distinguish an AD shift from an AS shift.
- Distinguish the **types of unemployment** (frictional, structural, cyclical) and how each is tackled.
- Distinguish **demand-pull vs cost-push** inflation on an AD/AS diagram.

Government macroeconomic intervention

A-Level Economics

Governments try to steer the whole economy. This handout covers what they aim for and the three sets of tools they use.

Macroeconomic policy objectives

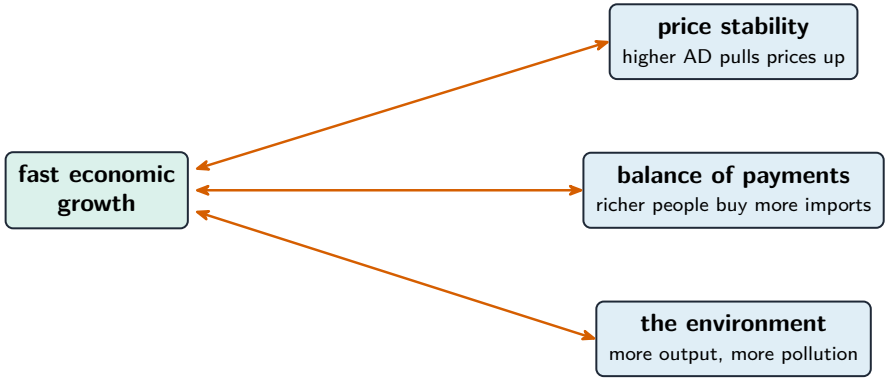
A government usually has five main aims:

- **price stability** 物价稳定 — low and steady **inflation** 通货膨胀 (often a target of about 2% a year).
- **full employment** 充分就业 — jobs for almost everyone who wants to work.
- **economic growth** 经济增长 — a rising real output over time.
- **balance of payments** 国际收支 stability — not importing far more than the country exports for years on end.
- **redistribution of income** 收入再分配 — narrowing the gap between rich and poor.

Conflicts between objectives

The aims can **conflict** 冲突 — reaching one can hurt another:

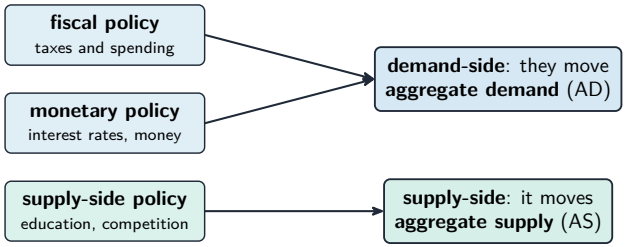
- **growth versus inflation**: fast growth raises **aggregate demand** 总需求, which can pull prices up.
- **growth versus the balance of payments**: as incomes rise, people buy more imports, worsening the trade balance.
- **unemployment versus inflation**: cutting unemployment by raising demand can cause more inflation.
- **growth versus the environment**: more output often means more pollution.



the same tension links **full employment** and **price stability**:
cutting unemployment by raising demand can cause more inflation

Chasing fast growth can pull against price stability, the balance of payments and the environment

The government has three sets of tools. Fiscal and monetary policy are **demand-side policies** 需求侧政策 (they work on AD). Supply-side policy works on **aggregate supply** 总供给.



Fiscal and monetary policy work on aggregate demand; supply-side policy works on aggregate supply

Fiscal policy

fiscal policy 财政政策 is the use of government **spending** and **taxation** to influence the economy.

Governments use fiscal policy — government spending and taxation, set through the legislature — to steer the economy.

The **budget** 预算 compares the two:

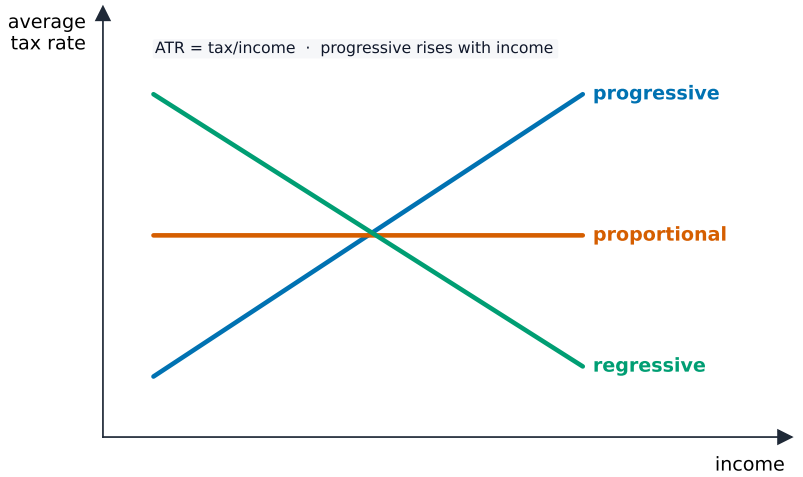
- a **budget deficit** 预算赤字 is when spending is greater than tax revenue. The government must borrow, adding to the **national debt** 国债.
- a **budget surplus** 预算盈余 is when tax revenue is greater than spending.

Types of tax

- a **direct tax** 直接税 is paid straight to the government on income or profit (income tax, corporation tax).
- an **indirect tax** 间接税 is a tax on spending (added to the price of goods).

Taxes are also grouped by how the rate changes with income:

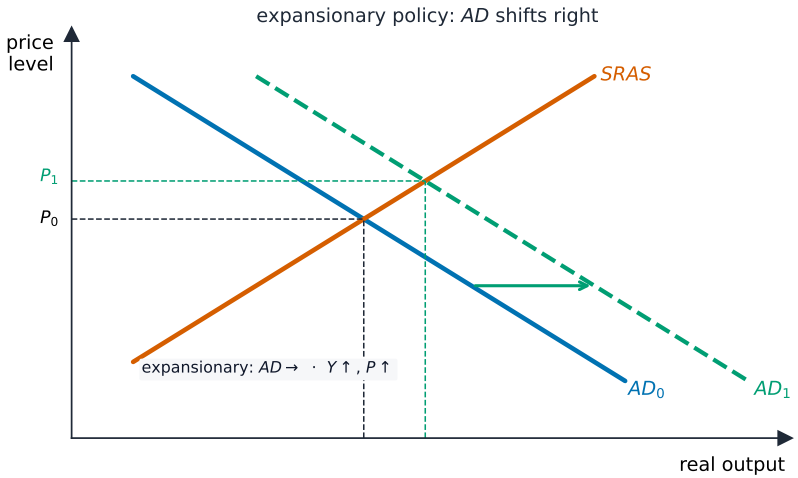
Type	How it works
progressive tax 累进税	the rate **rises** as income rises (the rich pay a larger share)
proportional tax 比例税	the rate **stays the same** at every income
regressive tax 累退税	the rate **falls** as income rises (the poor pay a larger share)



Under a progressive tax the average rate rises with income; under a proportional tax it stays flat; under a regressive tax it falls.

Using fiscal policy

- **expansionary** 扩张性 fiscal policy raises government spending or cuts taxes. This raises AD, to fight a recession and unemployment.
- **contractionary** 紧缩性 fiscal policy cuts spending or raises taxes. This lowers AD, to fight inflation.



Expansionary fiscal or monetary policy shifts AD right, raising output and the price level; contractionary policy does the reverse.

Effectiveness. Fiscal policy can act fast on AD, but it has problems: time lags (a budget is set once a year), large deficits and debt, and **crowding out** 挤出效应 — when heavy government borrowing pushes up interest rates and reduces private investment.

Monetary policy

monetary policy 货币政策 is run by the **central bank** 中央银行. Its main tool is the **interest rate** 利率, but it can also change the **money supply** 货币供给 or influence the **exchange rate** 汇率.

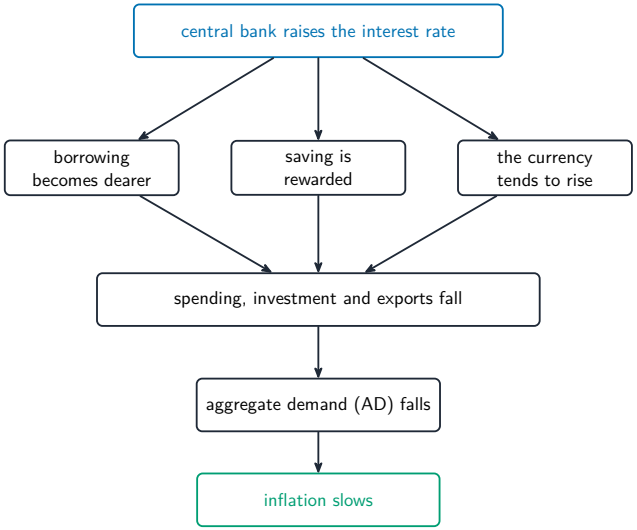
A central bank, like the Bank of England, sets the interest rate — the main tool of monetary policy.

The transmission mechanism

The **transmission mechanism** 传导机制 is how a change in the interest rate reaches the wider economy. If the central bank **raises** the interest rate:

- borrowing becomes dearer, so households and firms spend and invest less.
- saving is rewarded, so people spend less.
- the currency tends to rise, so exports fall.

All of these lower AD, which slows inflation. A **cut** in the interest rate does the opposite, raising AD.

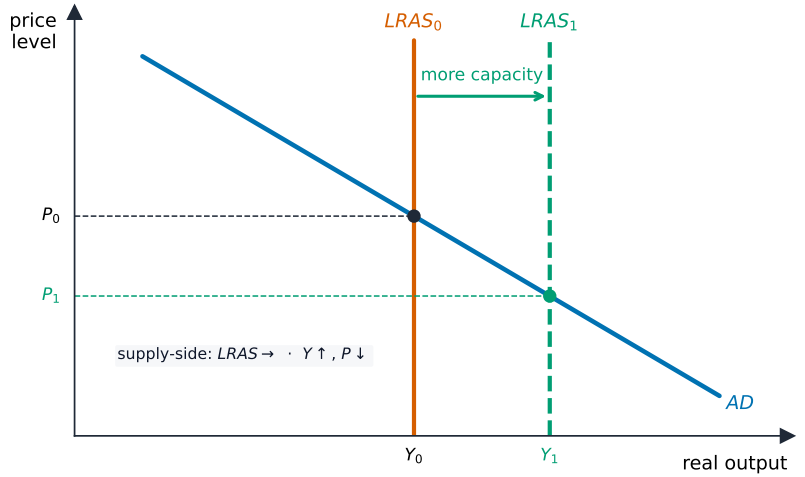


A higher interest rate works through three channels to cut spending, investment and exports, lowering AD and slowing inflation.

Effectiveness. Monetary policy is flexible (the rate can change at any time), but it works with a time lag of a year or more. In a deep slump, even very low rates may not make worried firms and households borrow.

Supply-side policy

supply-side policy 供给侧政策 tries to raise the economy's **productive capacity** 生产能力 — to shift long-run aggregate supply to the right. It aims to make markets work better and raise **productivity** 生产率.



Supply-side policy raises capacity, shifting LRAS right: real output rises and the price level falls — growth with lower inflation.

There are two kinds.

Market-based policies let markets work more freely:

- cutting income tax and benefits to strengthen the **incentive** 激励 to work.
- **privatisation** 私有化 — selling state firms to private owners, who run them for profit.
- **deregulation** 放松管制 — removing rules that block competition.

Interventionist policies use the government directly:

- spending on education and **training** 培训 to raise workers' skills.
- spending on **infrastructure** 基础设施 — roads, ports and broadband.
- support for research and new technology.

Effectiveness. Supply-side policy is powerful because it can raise growth **and** lower inflation at the same time, with no trade-off. But it is slow (education takes years to pay off), costly, and some measures, like cutting benefits, can widen inequality.

Worked example. An economy is in a deep recession with a large output gap, and interest rates are already near zero. Which policy should the government use, and why is the other one weak here? **Monetary policy is weak**: with the base rate already near zero there is almost no room to cut further, and even cheap credit will not make firms invest when they expect no demand. **Fiscal policy is stronger**: government spending raises aggregate demand **directly**, without waiting for anyone to choose to borrow, and the **multiplier** means each pound spent raises national income by more than a pound as it is re-spent. Weigh the costs against it - a bigger **budget deficit** and rising debt, plus **time lags** on large projects. Match the policy to the **constraint named in the question**: here it is the zero lower bound, and that is precisely what makes fiscal policy the answer.

Exam tips

- Match a **policy to an objective**: fiscal and monetary policy act on demand; supply-side policy raises long-run capacity.
- Explain how a change in **interest rates** works through AD, and fiscal policy through G and T.
- Evaluate policy with **time lags, side effects and conflicts** between objectives.
- **Supply-side** measures (education, tax incentives) are long-run and slow to work.

International economic issues

A-Level Economics

Why countries trade

international trade 国际贸易 lets countries buy and sell with each other. Trade lets each country **specialise** 专业化 in what it makes best, so the world makes more in total.

A container port: international trade moves goods between countries in huge volumes

Absolute and comparative advantage

- a country has an **absolute advantage** 绝对优势 in a good if it can make **more** of it with the same resources than another country.
- a country has a **comparative advantage** 比较优势 in a good if it can make it at a **lower opportunity cost** 机会成本 than another country.

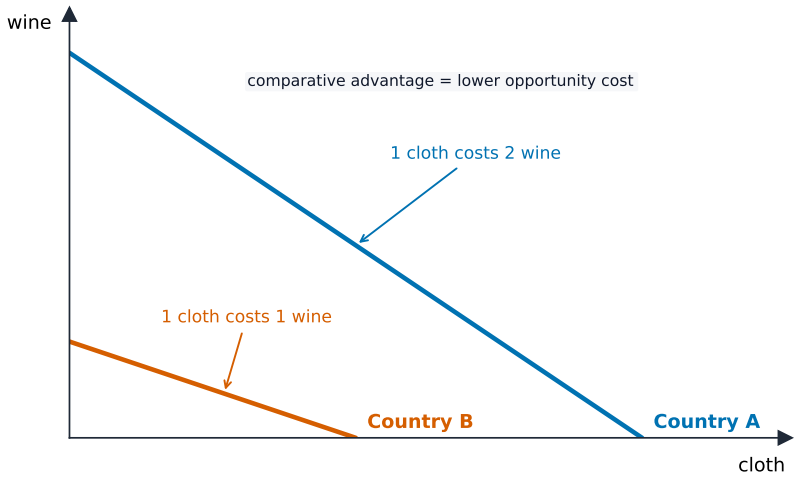
Comparative advantage is the key idea: a country should make the goods it gives up least to produce, and trade for the rest. Look at this example, where each country uses the same resources:

Country	Wine (units)	Cloth (units)
Country A	20	10
Country B	5	5

Country A is better at both (absolute advantage in both). But think about opportunity cost:

- in A, making 1 cloth means giving up 2 wine.
- in B, making 1 cloth means giving up 1 wine.

So B gives up less to make cloth — B has the comparative advantage in cloth. A has it in wine. If A makes only wine and B makes only cloth, and they trade, **both** can end up with more than before.



Country A can make more of both goods, but its PPC is steeper: it gives up 2 wine per cloth, while B gives up only 1, so B has the comparative advantage in cloth.

Terms of trade

The **terms of trade** 贸易条件 measure the price of a country's exports compared with the price of its imports. It is worked out as an index:

$$\text{terms of trade} = \frac{\text{index of export prices}}{\text{index of import prices}} \times 100.$$

If export prices rise faster than import prices, the terms of trade "improve" — the country can buy more imports for the same exports.

Worked example. Over a year, a country's export price index rises from 100 to 110, while its import price index rises from 100 to 105. Find the new terms of trade.

$$\text{terms of trade} = \frac{110}{105} \times 100 = 104.8.$$

The figure is above 100, so the terms of trade have **improved**: each unit of exports now buys about 4.8% more imports than before.

Limits of the theory

The gains are real, but the simple theory assumes no transport costs, no trade barriers, and that costs do not change with output. In the real world these do not fully hold, and specialising in one good is risky if its price falls.

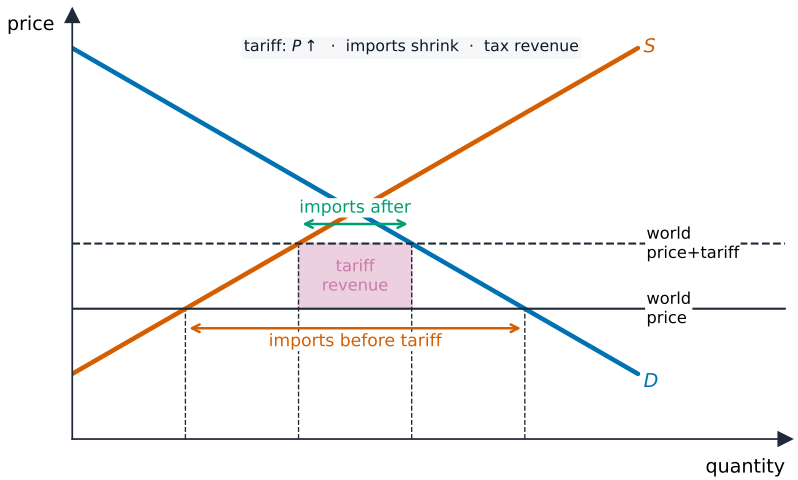
Protectionism

protectionism 贸易保护主义 means a government protecting home producers from foreign competition. The main tools:

tariff	**quota**	**subsidy**
a tax on imports (raises their price)	a limit on the quantity imported	help home firms sell more cheaply

Three tools of protection: tariffs, quotas and subsidies

- a **tariff** 关税 — a tax on imports, which raises their price.
- a **quota** 配额 — a legal limit on the quantity of a good that may be imported.
- a **subsidy** 补贴 to home producers, so they can sell more cheaply than foreign rivals.
- an **embargo** 禁运 — a complete ban on trade with a country or in a good.
- **administrative barriers** 行政壁垒 — extra paperwork and tough standards that make importing hard.



A tariff raises the price from the world price to "world price + tariff": domestic supply rises, demand falls, and imports shrink; the shaded box is the government's tariff revenue.

For and against

Arguments **for** protection include protecting an **infant industry** 幼稚产业 (a young industry that needs time to grow), saving jobs, and stopping **dumping** 倾销 (foreign firms selling below cost to destroy local rivals).

Arguments **against** are strong: protection raises prices for consumers, protects weak firms so they stay inefficient, and can lead to **retaliation** 报复 — other countries hitting back with their own barriers.

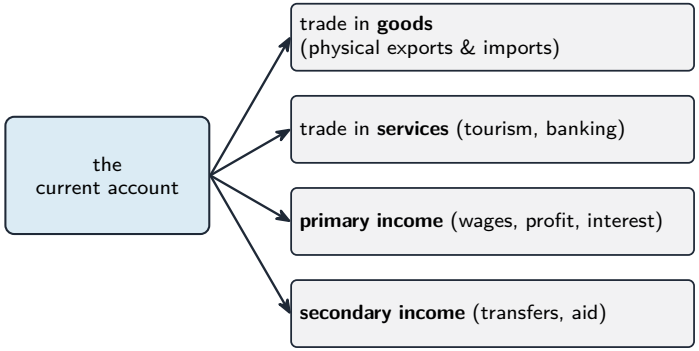
Effects on stakeholders

A tariff affects each **stakeholder** 利益相关者 differently: home producers gain, the government gains tariff revenue, but consumers lose (higher prices, less choice) and foreign producers lose sales.

The balance of payments

The **balance of payments** 国际收支 is a record of all money flows between one country and the rest of the world. Its most-studied part is the **current account** 经常账户, which has four parts:

- **trade in goods** 货物贸易 — exports and imports of physical goods.
- **trade in services** 服务贸易 — exports and imports of services (tourism, banking).
- **primary income** 初次收入 — income from work and investment abroad (wages, profit, interest).
- **secondary income** 二次收入 — transfers with nothing given back, like foreign aid.



The current account adds up four flows: trade in goods and services, plus primary income (from work and investment) and secondary income (transfers)

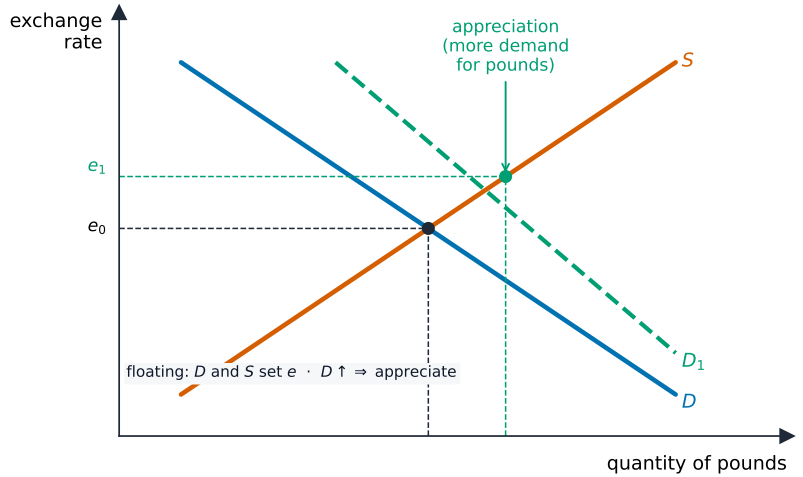
A **current account deficit** 经常账户赤字 means a country buys more from abroad than it sells. A **current account surplus** 经常账户盈余 is the opposite. A long deficit can mean rising debt to other countries; a large surplus can mean the country saves a lot but consumes little.

Exchange rates

An **exchange rate** 汇率 is the price of one currency in terms of another. There are three main systems.

A currency exchange: the exchange rate is the price of one currency in terms of another.

- a **floating exchange rate** 浮动汇率 is set freely by the demand for and supply of the currency. If more people want a currency (to buy its exports), its value rises.
- a **fixed exchange rate** 固定汇率 is held at a set value by the central bank, which buys and sells the currency to keep it there.
- a **managed exchange rate** 管理浮动汇率 mostly floats, but the central bank steps in now and then to steady it.



A floating exchange rate is set where demand for the currency meets supply. More demand for pounds ($D \to D_1$) raises the rate — an appreciation.

Appreciation and depreciation

Under floating rates:

- **appreciation** 升值 is a rise in the currency's value. Exports become dearer for foreigners, and imports become cheaper.
- **depreciation** 贬值 is a fall in the currency's value. Exports become cheaper, and imports become dearer.

A depreciation can therefore raise export sales and cut imports, helping the current account — but it can also raise inflation, because imports cost more.

Worked example. Suppose the exchange rate is £1 = \$1.40.

A UK exporter's £200 machine costs an American buyer £200 × 1.40 = \$280. If the pound then appreciates to £1 = \$1.60, the same machine costs £200 × 1.60 = \$320 — dearer for the American, so fewer are sold. Going the other way, a \$700 invoice from a US supplier costs a UK firm \$700 ÷ 1.40 = £500.

Correcting a current account deficit

A government can use three kinds of policy to cut a deficit:

- **expenditure-reducing** 支出减少 policies lower total demand (higher taxes or interest rates), so people buy fewer imports. But they also slow growth and raise unemployment.
- **expenditure-switching** 支出转换 policies move spending away from imports towards home goods (a tariff, or a lower exchange rate). But they can cause retaliation or inflation.
- **supply-side** policies raise the **competitiveness** 竞争力 of home firms (better skills and technology), so exports rise. These work best in the long run but are slow.

Trade flows at a container port: a current account deficit means imports of goods and services exceed exports

Exam tips

- Explain **comparative advantage** through opportunity cost (specialise where you give up least) and state its assumptions and limits.
- Evaluate **protectionism** (tariffs, quotas): it can protect jobs but raises prices and risks retaliation.
- Read the **balance of payments** (the current account covers trade, income and transfers).
- A **depreciation** makes exports cheaper and imports dearer, helping the current account only if demand is elastic enough (Marshall-Lerner).

The price system and the microeconomy (A Level)

A-Level Economics

This topic looks more deeply at consumers, costs and firms.

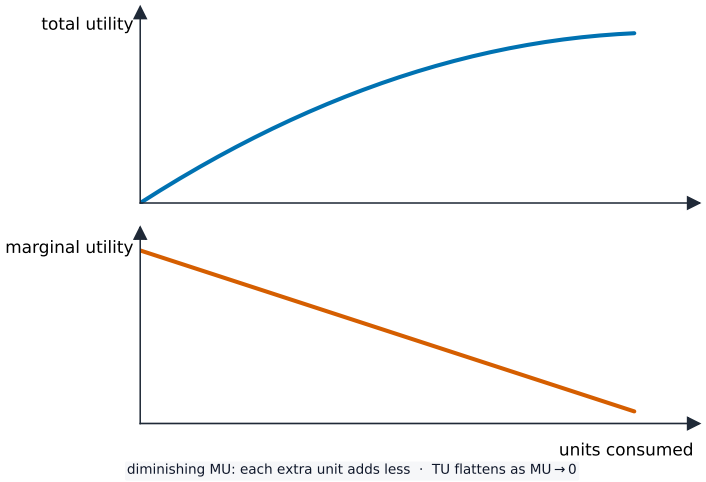
Utility and consumer choice

utility 效用 is the satisfaction a consumer gets from a good.

Consumers spend a limited income to get the most utility (satisfaction) they can.

- **total utility** 总效用 is the satisfaction from all the units consumed.
- **marginal utility** 边际效用 is the extra satisfaction from one more unit.

The law of **diminishing marginal utility** 边际效用递减 says each extra unit gives less extra satisfaction. Total utility still rises, but more and more slowly.



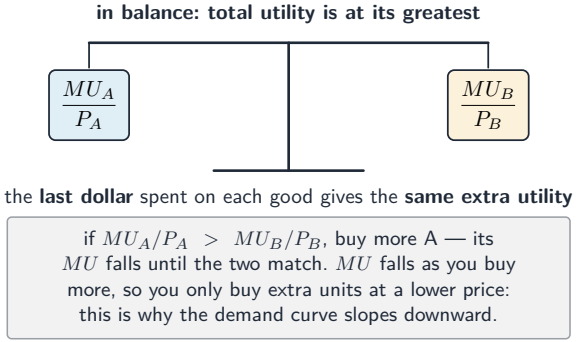
As more is consumed, total utility rises but flattens, because marginal utility falls — each extra unit adds less satisfaction.

The equi-marginal principle

A consumer with a fixed budget gets the most total utility when the last dollar spent on each good gives the same extra utility. This is the **equi-marginal principle** 等边际原则:

$$\frac{MU_A}{P_A} = \frac{MU_B}{P_B}$$

Because marginal utility falls as you buy more, you only buy extra units when the price falls. This is why the **demand curve** 需求曲线 slopes downward.



Utility is maximised when the last dollar on each good gives the same extra utility

Limitations

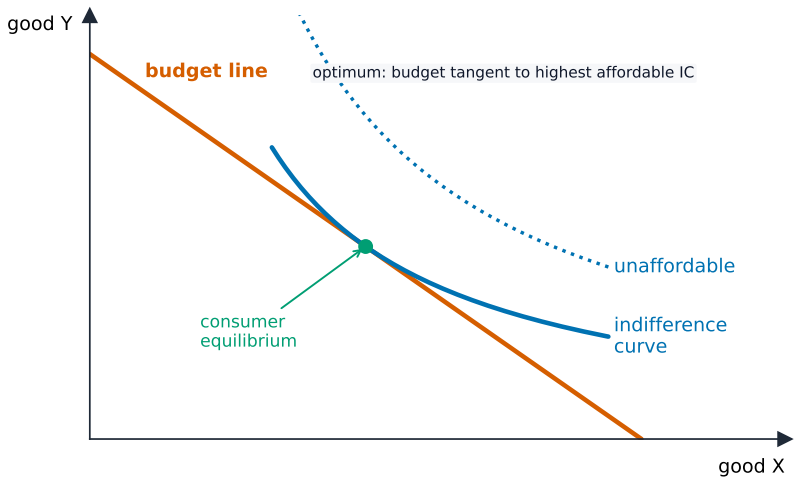
The approach is hard to use in practice: utility cannot really be measured in numbers, and people do not calculate like this. It also ignores habit and advertising.

Indifference curves and budget lines

An **indifference curve** 无差异曲线 shows all the combinations of two goods that give a consumer the **same** total utility. It slopes downward (more of one good means less of the other) and bows in towards the origin.

A **budget line** 预算线 shows all the combinations the consumer can just afford with their income, at the current prices.

consumer equilibrium 消费者均衡 is the best the consumer can do: the point where the budget line just touches the highest possible indifference curve.



The consumer's best choice is where the budget line is tangent to the highest reachable indifference curve; a higher curve is unaffordable.

Income and substitution effects

When the price of a good falls, the consumer buys more for two reasons:

- the **substitution effect** 替代效应 — the good is now cheaper than others, so the consumer switches towards it.
- the **income effect** 收入效应 — the consumer's money now buys more, so real income has risen.

These effects work differently for different goods:

- for a **normal good** 正常品, both effects raise the quantity bought.
- for an **inferior good** 低档品, the income effect works the other way (higher real income lowers demand), but it is usually weaker, so demand still rises when price falls.
- a **Giffen good** 吉芬品 is a rare, very inferior good where the income effect is so strong that demand actually **falls** when the price falls. Its demand curve slopes upward.

Efficiency and market failure

Economists judge how well resources are used.

productive efficiency	allocative efficiency
making goods at the lowest possible cost	*making the goods people most want*

Productive efficiency is lowest cost; allocative is making what people want

- **productive efficiency** 生产效率 — making goods at the lowest possible cost (using the fewest resources).
- **allocative efficiency** 配置效率 — making the goods people most want, where price equals marginal cost.
- **Pareto optimality** 帕累托最优 — a point where no one can be made better off without making someone else worse off.
- **dynamic efficiency** 动态效率 — improving over time through new technology and better products.

market failure 市场失灵 happens when the free market does not reach an efficient result. The main causes are monopoly power, **externalities** 外部性, **public goods** 公共物品, **information failure** 信息失灵, and **factor immobility** 要素不流动性 (factors cannot move quickly to where they are needed).

Externalities and social costs and benefits

Some costs and benefits fall on people outside the deal. We separate three levels:

- a **private cost** 私人成本 or **private benefit** 私人收益 falls on the buyer or seller.
- an **external cost** 外部成本 or **external benefit** 外部收益 falls on a third party.
- the **social cost** 社会成本 is private cost plus external cost; the **social benefit** 社会收益 is private benefit plus external benefit.

Marginal analysis

We study externalities with **marginal analysis** 边际分析, using these curves:

- **marginal private cost** 边际私人成本 (MPC) and **marginal social cost** 边际社会成本 (MSC).

- **marginal private benefit** 边际私人收益 (MPB) and **marginal social benefit** 边际社会收益 (MSB).

The best outcome for society is where MSC = MSB. But the market produces where MPC = MPB. The gap between these creates lost welfare.

- a **negative externality** 负外部性 (like pollution) means MSC is above MPC. The market makes **too much**.
- a **positive externality** 正外部性 (like education) means MSB is above MPB. The market makes **too little**.

The lost welfare from making too much or too little is the **deadweight welfare loss** 无谓损失 — the triangle on the diagram between the social and private curves.

Industrial pollution: a negative externality where social cost exceeds private cost

Costs, revenue and profit

Costs

In the **short run** 短期, at least one factor is fixed; in the **long run** 长期, all factors can change.

A large steel plant: big firms gain economies of scale, so average cost falls as output rises.

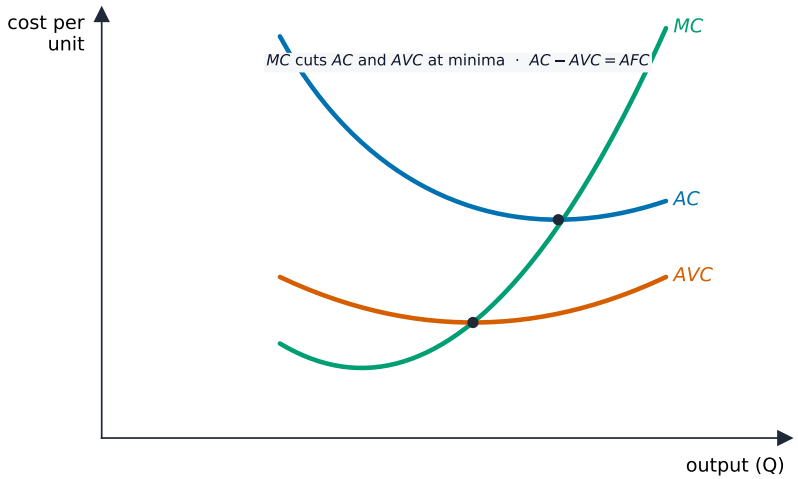
Cost	Meaning
fixed cost 固定成本	does not change with output (rent on a factory)
variable cost 可变成本	changes with output (raw materials)
total cost 总成本	fixed cost plus variable cost
average cost 平均成本	total cost per unit: $AC = TC/Q$
marginal cost 边际成本	the cost of one more unit: $MC = \Delta TC/\Delta Q$

Worked example. Making 10 units costs £500 in total; making 11 units costs £540. Find the average cost at 10 units and the marginal cost of the 11th unit.

$$AC = \frac{TC}{Q} = \frac{500}{10} = £50, \qquad MC = \frac{\Delta TC}{\Delta Q} = \frac{540 - 500}{11 - 10} = £40.$$

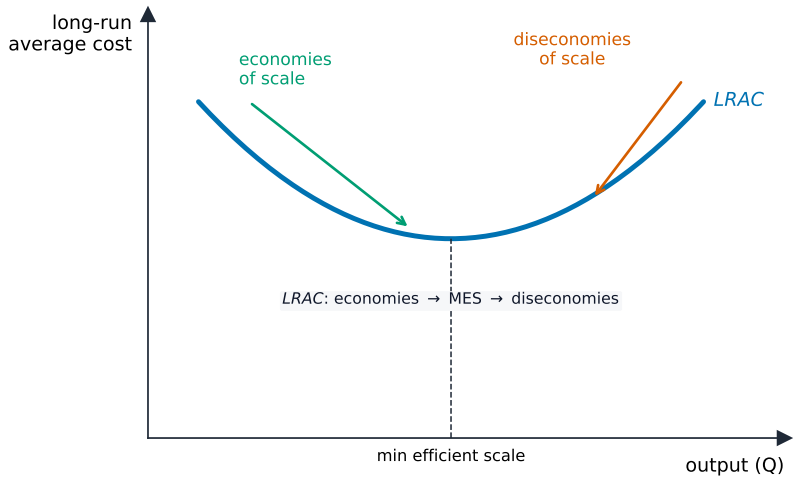
Here MC (£40) is below AC (£50), so making the 11th unit pulls the average cost down — whenever marginal cost is below average cost, average cost falls.

In the short run, output is limited by the law of **diminishing returns** 边际报酬递减: as you add more of a variable factor (workers) to a fixed factor (machines), each extra worker eventually adds less output. This makes marginal cost rise.



Marginal, average total and average variable cost are all U-shaped; MC cuts the two average curves at their lowest points.

In the long run, all factors vary, so we look at **returns to scale** 规模报酬. As a firm grows, it can gain **economies of scale** 规模经济 (lower average cost from buying in bulk, using big machines, and specialising). If it grows too big, it may suffer **diseconomies of scale** 规模不经济 (poor communication and control), and average cost rises.



Long-run average cost falls with economies of scale, reaches a minimum, then rises with diseconomies of scale.

Revenue

Revenue	Meaning
total revenue 总收益	all money from sales: $TR = P \times Q$
average revenue 平均收益	revenue per unit, which equals the price
marginal revenue 边际收益	the revenue from one more unit: $MR = \Delta TR / \Delta Q$

Worked example. A firm sells 10 units at £50 each. To sell an 11th unit it must lower the price to £48 on every unit. Find the total revenue at each output and the marginal revenue of the 11th unit.

$$TR_{10} = 50 \times 10 = £500, \qquad TR_{11} = 48 \times 11 = £528, \qquad MR = \frac{528 - 500}{1} = £28.$$

The marginal revenue (£28) is well below the £48 price, because the lower price applies to all 11 units, not just the extra one.

Profit

Profit is total revenue minus total cost. Economists include the opportunity cost of the owner's resources in cost, so:

- **normal profit** 正常利润 is just enough profit to keep the firm in the industry. It counts as a cost.
- **supernormal profit** 超常利润 (also called abnormal profit) is profit above normal.
- **subnormal profit** 次正常利润 is profit below normal — the firm may leave in the long run.

A firm makes the most profit at the output where $MR = MC$.

Worked example. At its best output a firm makes 100 units, sells each for £12 (its average revenue), and has an average cost of £9. Find the supernormal profit.

$$\text{profit} = (AR - AC) \times Q = (12 - 9) \times 100 = £300.$$

Because average revenue (£12) is above average cost (£9), the firm earns supernormal profit. If instead $AR = AC$, it would make only normal profit; if $AR < AC$, it would make a loss.

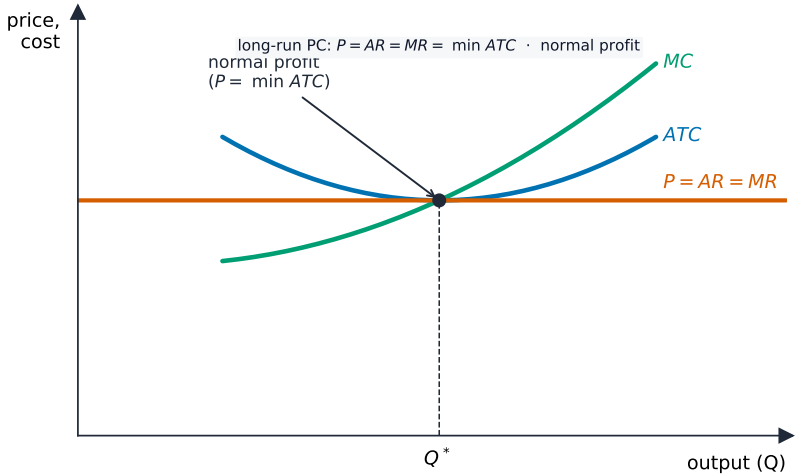
Market structures

A **market structure** 市场结构 describes a market by the number of firms, the barriers to entry, and the type of product.

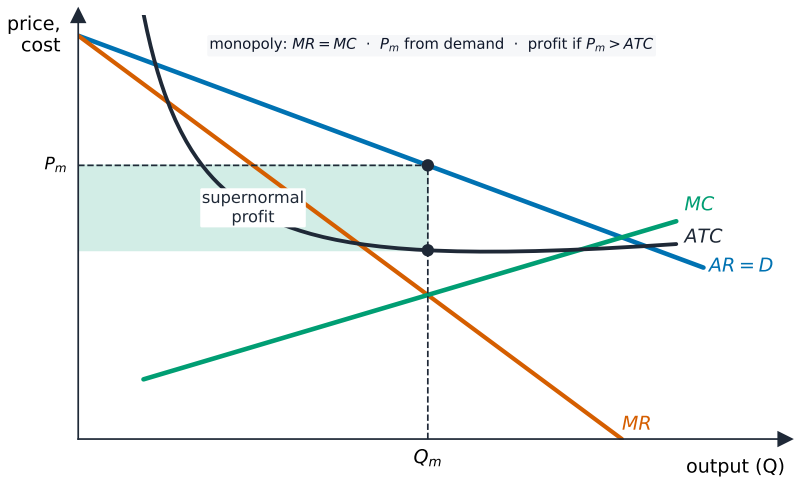
Structure	Firms	Barriers	Product	Long-run profit
perfect competition 完全竞争	very many	none	identical	normal only
monopolistic competition 垄断竞争	many	low	slightly different	normal
oligopoly 寡头垄断	a few	high	varies	often supernormal
monopoly 垄断	one	very high	unique	supernormal

The four structures sit on a spectrum of competition: many firms at one end (perfect competition), a single firm at the other (monopoly)

- in **perfect competition**, each firm is a tiny **price taker** 价格接受者 — it must accept the market price. Firms make only normal profit in the long run, and the market is both productively and allocatively efficient.
- in **monopolistic competition**, many firms sell slightly different products (**product differentiation** 产品差异化), so each has a little price-setting power, but free entry competes profit away.
- in an **oligopoly**, a few large firms dominate. They watch each other closely. They may compete hard on price, or they may agree to fix prices — this is **collusion** 合谋, and a group that does so is a **cartel** 卡特尔.
- a **monopoly** is a single seller protected by high **barriers to entry** 进入壁垒. It can earn supernormal profit for a long time but is usually inefficient.



In long-run equilibrium a perfectly competitive firm produces where MC = MR at the bottom of ATC, making only normal profit.



A monopoly produces where MC = MR, then charges the higher price buyers will pay (read off the AR curve), keeping a supernormal profit.

Price and non-price competition

- **price competition** 价格竞争 means cutting prices to win customers.
- **non-price competition** 非价格竞争 means competing in other ways — advertising, quality, branding and service.

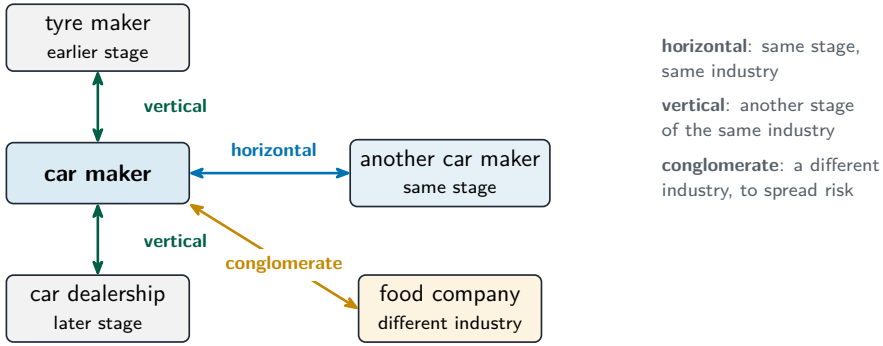
Price discrimination

price discrimination 价格歧视 is charging different consumers different prices for the **same** good (for example, cheaper train tickets for students). It needs price-setting power, groups with different elasticities, and a way to stop resale between groups. It raises the firm's profit.

The growth and survival of firms

Firms grow in two ways:

- **internal growth** 内部增长 (organic) — growing bigger by selling more.
- **external growth** 外部增长 — joining with another firm through a **merger** 合并 or takeover. Types:
  - **horizontal integration** 横向一体化 — joining a firm at the same stage of the same industry (two car makers).
  - **vertical integration** 纵向一体化 — joining a firm at a different stage (a car maker buys a tyre maker).
  - **conglomerate integration** 混合一体化 — joining a firm in a different industry, to spread risk.



External growth on the production chain: horizontal, vertical and conglomerate integration

Why some firms stay small

Many firms stay small because the market is small (local services), the owner wants to keep control, or there are few economies of scale. They survive by offering personal service or filling a **niche** 利基市场.

Firms also face **barriers to entry** and **barriers to exit** 退出壁垒 (such as costly machines that cannot be sold). High exit barriers can trap a firm in a loss-making market.

The objectives of firms

Not every firm simply chases the most profit.

- **profit maximisation** 利润最大化 — producing where MR = MC. The traditional aim.
- **revenue maximisation** 收益最大化 — producing where MR = 0, perhaps to grow market share.
- **sales maximisation** 销售最大化 — selling as much as possible while still making normal profit.
- **satisficing** 满意化 — aiming for "good enough" results that keep owners, workers and customers all reasonably happy.

Divorce of ownership from control

In large companies the owners (shareholders) are not the managers. This **divorce of ownership from control** 所有权与控制权分离 creates the **principal-agent problem** 委托代理问题: managers (the agents) may pursue their own aims — bigger salaries or an easier life — instead of the owners' aim of maximum profit.

Exam tips

- Calculate **AC, MC, TR and MR**, and remember a firm maximises profit where $MR = MC$.
- Distinguish the **market structures** (perfect competition, monopolistic competition, oligopoly, monopoly) by number of firms, barriers and price-setting power.
- Distinguish **normal from supernormal profit** and link long-run entry and exit to it.
- On a cost diagram, note that MC cuts AC at the minimum of AC.

Government microeconomic intervention (A Level)

A-Level Economics

This topic looks at how governments correct **market failure** 市场失灵, make incomes fairer, and act in the labour market.

Correcting market failure

A government has many tools to push a market towards a better use of resources.

- an **indirect tax** 间接税 on a good with a negative externality (like fuel) raises its price and cuts the quantity used.
- a **subsidy** 补贴 for a good with a positive externality (like solar panels) lowers its price and raises the quantity.
- a **price control** 价格管制 sets a legal maximum or minimum price.
- **tradable permits** 可交易许可证 cap total pollution and let firms buy and sell the right to pollute.
- **regulation** 管制 uses rules and laws, such as bans, safety standards and pollution limits.
- **state provision** 政府提供 means the government supplies a good directly, often free (schools, hospitals, defence).
- **nationalisation** 国有化 is taking an industry into government ownership; **privatisation** 私有化 is selling a state industry to private owners.

Competition policy

A firm with **monopoly power** 垄断势力 can raise prices and cut output. **competition policy** 竞争政策 is the set of laws used to protect competition — for example, blocking mergers that create too much power, banning price-fixing, and fining firms that abuse their position.

Government failure

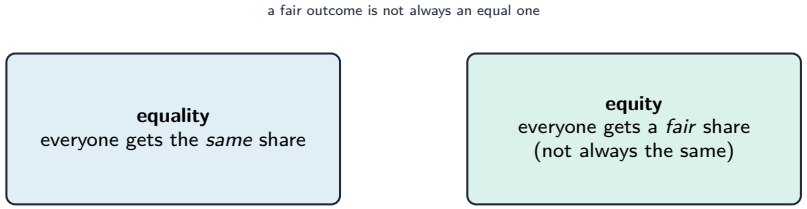
Intervention can backfire. **government failure** 政府失灵 is when the government's action leads to a worse use of resources than before — through poor information, high costs, long time lags, or unintended effects (such as a black market caused by a price control).

Demerit goods such as cigarettes are over-consumed when external costs are ignored — a classic market failure

Equity and redistribution

It is important to separate two words that sound alike:

- **equity** 公平 means fairness — people getting what is fair, which may not be an equal share.
- **equality** 平等 means everyone getting the **same**.



Equality gives everyone the same; equity gives everyone what is fair — so a fair outcome is not always an equal one

Income inequality: informal settlements often sit close to much wealthier districts.

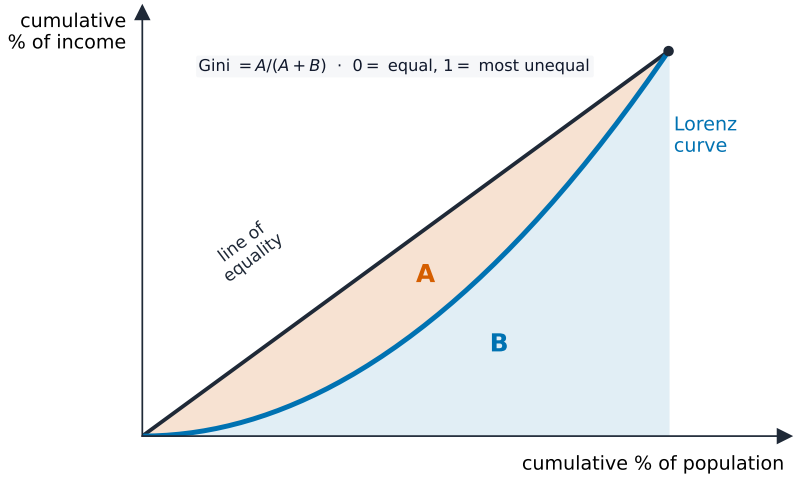
A fair (equitable) outcome is not always an equal one. Most governments worry about too much **inequality** 不平等.

Remember the difference between the two things being shared:

- **income** 收入 is a flow received over time (wages, rent, interest).
- **wealth** 财富 is a stock of assets owned (houses, shares, savings).

Measuring inequality

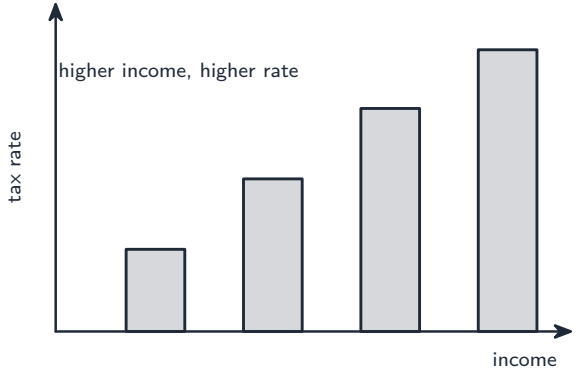
- the **Lorenz curve** 洛伦兹曲线 is a graph. It plots the share of total income against the share of the population, from poorest to richest. A straight diagonal line would mean perfect equality. The further the curve bends below the line, the more unequal the country.
- the **Gini coefficient** 基尼系数 turns this into one number between 0 and 1. Zero means perfect equality; one means one person has everything. A higher number means more inequality.



The Lorenz curve plots cumulative income share against cumulative population share; the more it sags below the line of equality, the higher the Gini coefficient.

Policies to redistribute

- a **progressive tax** 累进税 takes a larger share from higher incomes.
- **benefits** 福利金 (also called **transfer payments** 转移支付) give money to the poor, the old and the unemployed.
- free state services (education, health care) raise the real living standards of the poor.



A progressive tax takes a higher rate from higher incomes

These bring about **redistribution** 再分配 — moving income from richer to poorer people. Wealth is harder to redistribute than income, because the rich can hide assets or move them abroad, and wealth taxes are hard to collect.

Worked example. Country X has a Gini coefficient of 0.25 and country Y one of 0.48. What does that mean, and what does each Lorenz curve look like? The Gini runs from **0** (perfect equality) to **1** (one person has everything), so a **higher** number means **more** unequal: country Y at 0.48 is markedly more unequal than X at 0.25. On the graph, Y's **Lorenz curve sags further below** the 45° line of equality, while X's hugs it more closely. The Gini is exactly the area between the line of equality and the Lorenz curve, as a fraction of the whole triangle beneath that line - which is why a bigger sag gives a bigger number. One caution is worth stating: the Gini measures **relative** inequality only. It says nothing about **absolute** living standards, so a poor country and a rich one can share the same Gini.

Labour markets

A wage is just a price — the price of labour — so we use demand and supply to study the **labour market** 劳动力市场.

In a labour market, firms demand workers and the wage is the price of labour.

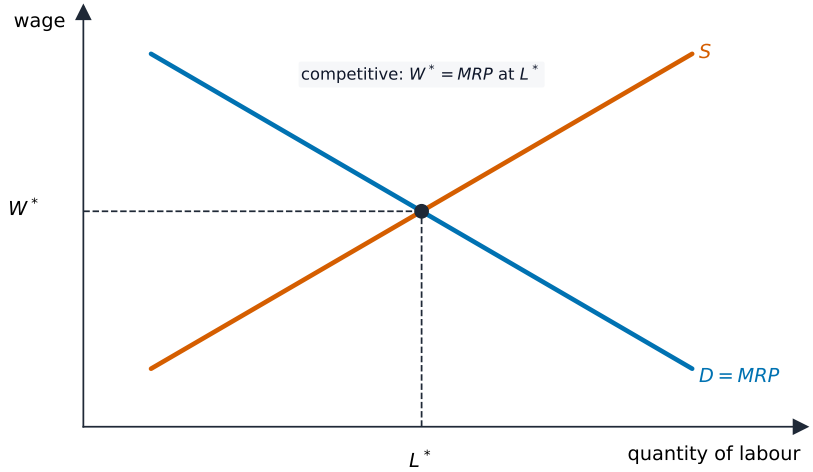
The demand for labour

The **demand for labour** 劳动力需求 is a **derived demand** 派生需求: firms want workers not for their own sake, but to make goods that sell. So labour demand depends on the **marginal revenue product** 边际收益产品 (MRP) — the extra revenue one more worker brings in. A worker is worth hiring while the MRP is at least as big as the wage.

The supply of labour

The **supply of labour** 劳动力供给 to a job rises when the **wage** 工资 rises, and also depends on training needed, working conditions, and how many people have the right skills.

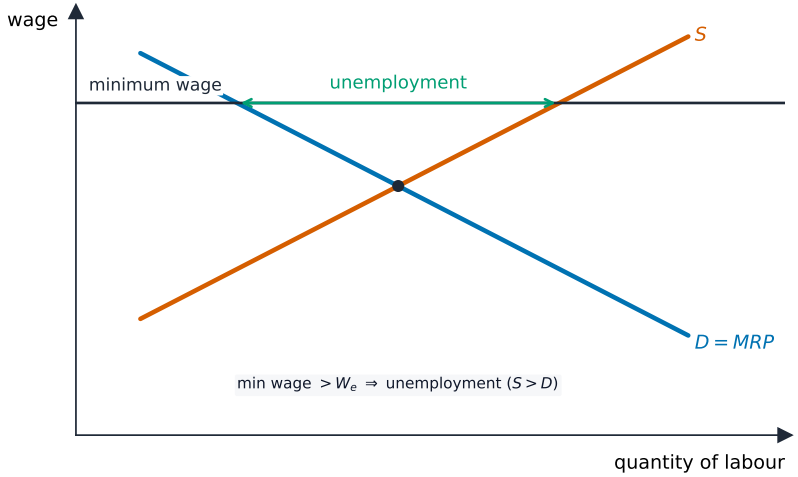
In a competitive labour market, the wage settles where the demand for labour equals the supply of labour.



In a competitive labour market the wage W^* and employment L^* are set where labour demand (MRP) meets labour supply.

When the market is not competitive

- a **monopsony** 买方垄断 is a single, dominant **buyer** of labour (for example, the only large employer in a town). It can pay a wage below the competitive level and hire fewer workers.
- a **trade union** 工会 is an organised group of workers that bargains for higher pay. A union can push the wage above the competitive level, but this may reduce the number of jobs.
- a **national minimum wage** 全国最低工资 is a legal lowest wage. Set above the market wage, it raises low pay but may cause some unemployment. Interestingly, in a monopsony it can raise **both** the wage and employment.



A minimum wage set above the equilibrium wage means more workers want jobs than firms will hire, leaving unemployment.

Wage differentials and discrimination

Wages differ between jobs — this is a **wage differential** 工资差异. The main reasons are differences in MRP (skilled work is more productive), the training and qualifications needed, and the risk or unpleasantness of the work.

Some wage gaps come from **discrimination** 歧视 — paying people differently because of gender, race or age rather than their productivity. Governments use equal-pay laws and anti-discrimination laws to reduce this.

Exam tips

- Evaluate ways to **correct market failure**, and warn of **government failure** (unintended effects, poor information).
- Distinguish **equity from equality**; discuss redistribution (progressive tax, benefits) and its trade-off with incentives.
- Analyse a **labour market** with the demand for and supply of labour, and explain wage differentials and the effect of a minimum wage.

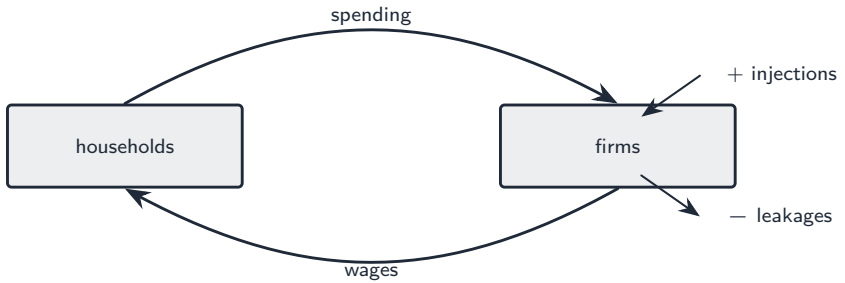
The macroeconomy (A Level)

A-Level Economics

This topic studies the wider economy at A Level depth: how spending multiplies, how growth links to the environment, the jobs–prices link, and money.

The circular flow and the multiplier

The **circular flow of income** 收入循环流 shows money passing between households and firms. **injections** 注入 add money to the flow (investment, government spending, exports); **leakages** 漏出 take it out (saving, taxation, imports).



Income circulates between households and firms, with injections and leakages

The multiplier

An injection raises income by **more** than the first amount. This is the **multiplier** 乘数. When a firm builds a factory, the builders earn income, and they spend part of it, which becomes someone else's income, and so on.

How much is spent again depends on the **marginal propensity to consume** 边际消费倾向 (MPC) — the fraction of extra income that people spend on home goods. The rest leaks out. In a simple model:

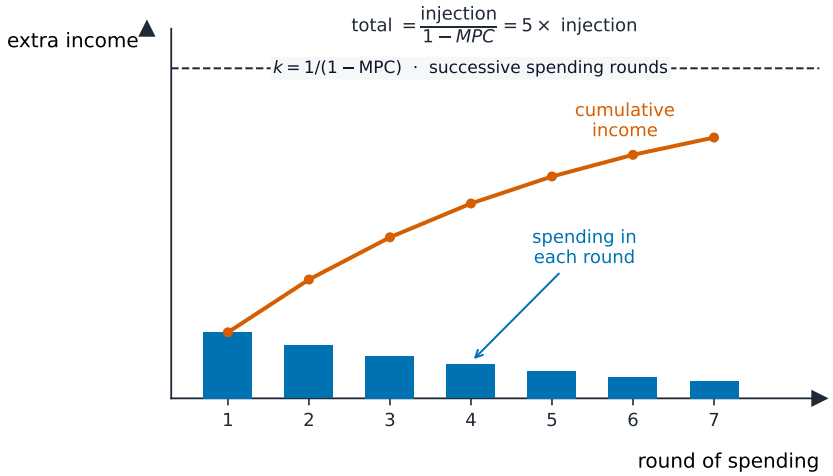
$$\text{multiplier} = \frac{1}{1 - MPC}$$

A bigger MPC (smaller leakages) gives a bigger multiplier. The main leakages are measured by the **marginal propensity to save** 边际储蓄倾向 (MPS) and the **marginal propensity to import** 边际进口倾向 (MPM).

Worked example. In an economy the MPC is 0.8. Find the multiplier, then the effect of a £10 billion rise in investment.

$$\text{multiplier} = \frac{1}{1 - 0.8} = \frac{1}{0.2} = 5.$$

National income therefore rises by $5 \times$ £10 billion = £50 billion — five times the original injection. (Because all income is either spent or saved, MPC + MPS = 1, so here MPS = 0.2 and the multiplier is also 1/MPS.)



An injection is spent round after round (each smaller by the MPC), so total income rises by a multiple of the first injection.

The accelerator

The **accelerator** 加速数 says that **investment** 投资 depends on the **rate of change** of output. When demand is rising quickly, firms need lots of new capital, so investment jumps. When demand merely stays high, investment falls back.

What drives consumption, saving and investment

- **consumption** 消费 and **saving** 储蓄 depend on **disposable income** 可支配收入 (income after tax), wealth, interest rates, and confidence.
- investment depends on interest rates, expected profit, technology, and business confidence.

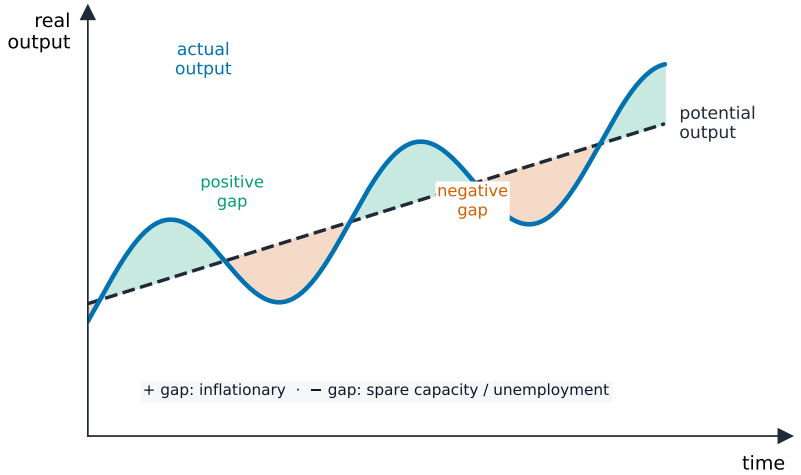
Economic growth and sustainability

economic growth 经济增长 is a rise in real output.

Investment in new buildings and capital is a key driver of economic growth.

- **actual growth** 实际增长 is the real rise in output that happens.
- **potential growth** 潜在增长 is the rise in the economy's capacity.

The **output gap** 产出缺口 is the difference between actual output and potential output. A **positive** gap (actual above potential) tends to cause inflation; a **negative** gap (actual below potential) means spare capacity and unemployment.



Actual output swings around potential output; above it is a positive (inflationary) gap, below it a negative gap with spare capacity.

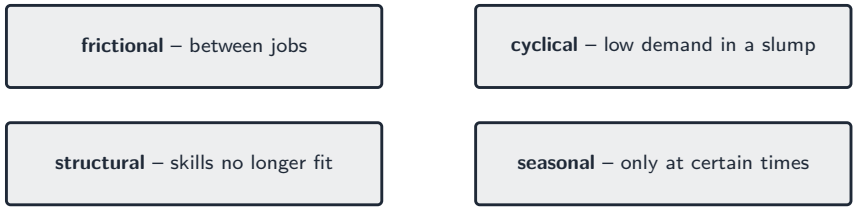
Sustainability

sustainable growth 可持续增长 is growth that meets today's needs without harming the ability of future generations to meet theirs. Fast growth can use up non-renewable resources and cause pollution, which threatens **sustainability** 可持续性. So a country must weigh growth today against the environment and resources of tomorrow.

The wind these turbines use is never used up, and they burn no fuel. Switching output from coal and oil to renewables like this lets an economy keep growing without spending the resources — or filling the air with the pollution — that would rob future generations

Employment and unemployment

unemployment 失业 is measured in two ways: the **claimant count** 申领救济人数 (people claiming benefits) and the wider **labour force survey** 劳动力调查 (a sample asked about work).



Four types of unemployment: frictional, structural, cyclical and seasonal

Types

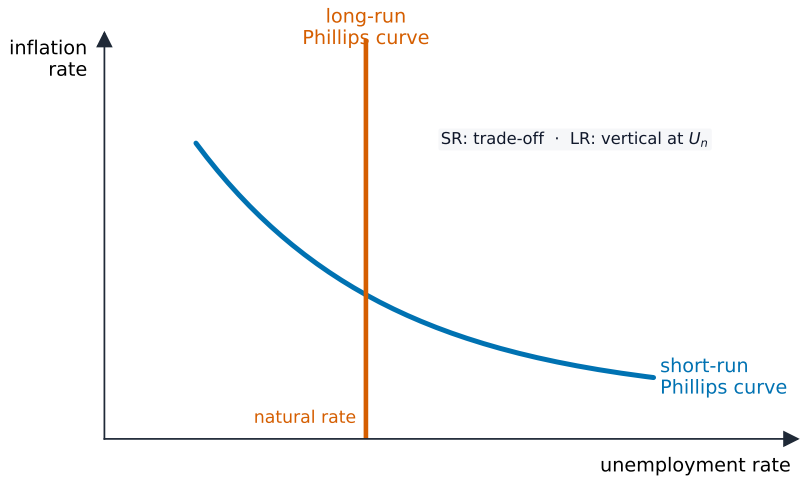
- **frictional unemployment** 摩擦性失业 — short spells between jobs.
- **structural unemployment** 结构性失业 — skills no longer match the jobs, as industries decline.
- **cyclical unemployment** 周期性失业 — caused by low demand in a recession.
- **seasonal unemployment** 季节性失业 — work only at certain times of year.

The natural rate and the Phillips curve

The **natural rate of unemployment** 自然失业率 is the unemployment left when the labour market is in balance (mainly frictional and structural). It cannot be removed just by raising demand.

The **Phillips curve** 菲利普斯曲线 shows the link between unemployment and inflation:

- in the **short run**, there is a trade-off: lower unemployment comes with higher inflation, because strong demand pushes up wages and prices.
- in the **long run**, the curve is vertical at the natural rate. Once people expect inflation, there is no lasting trade-off — pushing unemployment below the natural rate only speeds up inflation.



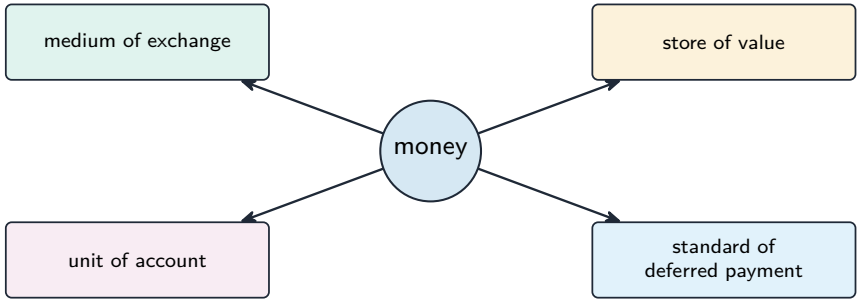
The short-run Phillips curve shows a trade-off between unemployment and inflation; the long-run curve is vertical at the natural rate.

Money and banking

What money does

money 货币 is anything widely accepted in payment. It has four jobs:

- a **medium of exchange** 交换媒介 — used to buy and sell, avoiding barter.
- a **store of value** 价值储藏 — it keeps its worth over time, so you can save it.
- a **unit of account** 记账单位 — a common way to measure and compare prices.
- a **standard of deferred payment** 延期支付标准 — it lets people borrow and repay later.



Money does four jobs at once — without it, trade would fall back on slow, awkward barter

Good money is durable, easy to carry, easy to divide, hard to fake, and limited in supply.

Banks

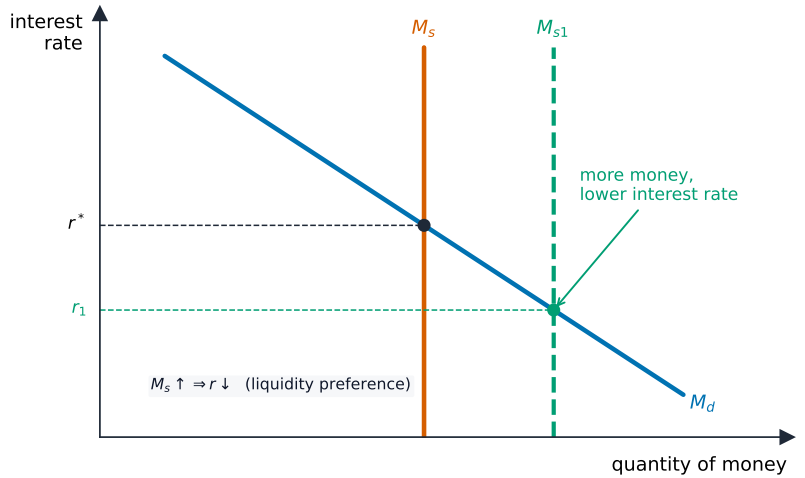
- the **central bank** 中央银行 issues notes, runs monetary policy, holds the country's reserves, and acts as **lender of last resort** 最后贷款人 to banks in trouble.
- **commercial banks** 商业银行 take deposits and make loans. By lending out most of what is deposited, the banking system creates money.

Commercial banks take deposits and make loans — and by lending, the banking system creates most of the money in the economy.

The demand for money and interest rates

People hold money rather than other assets for its **liquidity** 流动性 (it can be spent at once). The **demand for money** 货币需求 — also called **liquidity preference** 流动性偏好 — comes from the need to make everyday payments, to keep a safety buffer, and to be ready to buy assets.

The **interest rate** 利率 is the price of borrowing money. It is set where the demand for money meets the **money supply** 货币供给. A larger money supply tends to lower the interest rate.



The interest rate is set where the demand for money meets the money supply; a larger money supply lowers it.

Moral hazard

moral hazard 道德风险 is the danger that banks take bigger risks because they expect to be rescued if things go wrong. If a bank believes the government will bail it out, it may lend recklessly — knowing it keeps the gains but passes losses to others.

Exam tips

- Calculate the **multiplier** $= 1 \div (1 - MPC) = 1 \div MPS$ and apply it to an injection.
- Distinguish **actual from potential** growth and link sustainability to long-run capacity.
- Explain the **functions of money** and the role of banks and the central bank.

- Explain the **Phillips curve** trade-off (unemployment vs inflation) and why it may not hold in the long run.

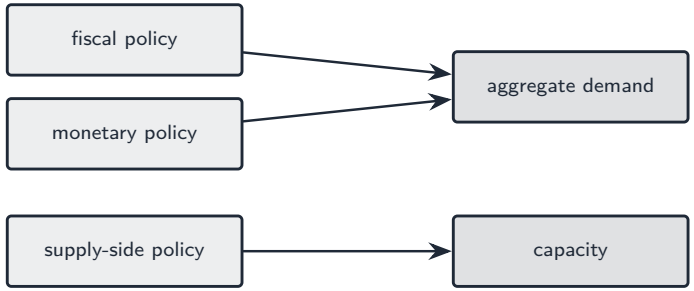
Government macroeconomic intervention (A Level)

A-Level Economics

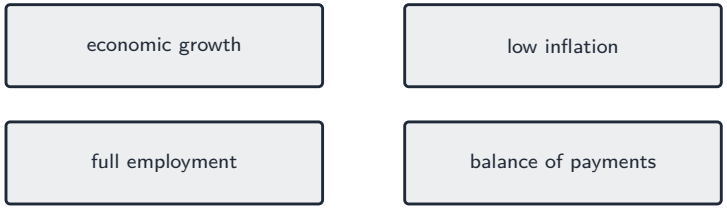
This topic pulls the macroeconomics together: the goals a government has, how they clash, and how well its tools work.

Objectives and the tools to reach them

Governments aim at several **macroeconomic objectives** 宏观经济目标 at once:



Fiscal and monetary policy act on demand; supply-side on capacity



The four macroeconomic objectives

Objective	How it is measured
economic growth 经济增长	the % change in real GDP
price stability 物价稳定 (low **inflation** 通货膨胀)	the % change in the consumer price index
full employment 充分就业	the unemployment rate
balance of payments 国际收支 stability	the current account balance

To reach these goals, the government uses three sets of tools:

- **fiscal policy** 财政政策 — changing government spending and taxes.
- **monetary policy** 货币政策 — changing the **interest rate** 利率 and the money supply.
- **supply-side policy** 供给侧政策 — raising the economy's capacity and productivity.

Fiscal and monetary policy mainly work on **aggregate demand** 总需求, so they are quick but can cause inflation. Supply-side policy works on capacity, so it is slow but lasting.

Central banks, such as the European Central Bank, are a main tool of macroeconomic policy.

Links and trade-offs between objectives

The objectives are **interrelated** — reaching one can move another. Often there is a **trade-off** 取舍, a **conflict** 冲突 where gaining on one goal costs you on another.

- **unemployment versus inflation.** Raising demand to cut unemployment tends to push prices up. The **Phillips curve** 菲利普斯曲线 shows this short-run trade-off. (In the long run it may disappear.)
- **growth versus inflation.** Fast demand-led growth can overheat the economy and cause inflation.
- **growth versus the balance of payments.** As incomes rise, people buy more imports, so the current account can worsen.

- **growth versus the environment.** More output often means more pollution and use of resources.
- **growth versus equality.** Growth does not always reach everyone, so the income gap can widen.

these goals pull against each other

lower unemployment ⇌ higher inflation

faster growth ⇌ higher inflation

faster growth ⇌ worse current account

faster growth ⇌ more pollution

The objectives pull against each other, so a government must trade one off against another — there is rarely a way to win on all of them at once

Because the goals are linked, a government must often accept "second best" on one aim to protect another. A clever policy mix tries to ease the trade-offs — for example, supply-side policy can raise growth **and** lower inflation, easing the usual clash.

The effectiveness of policy

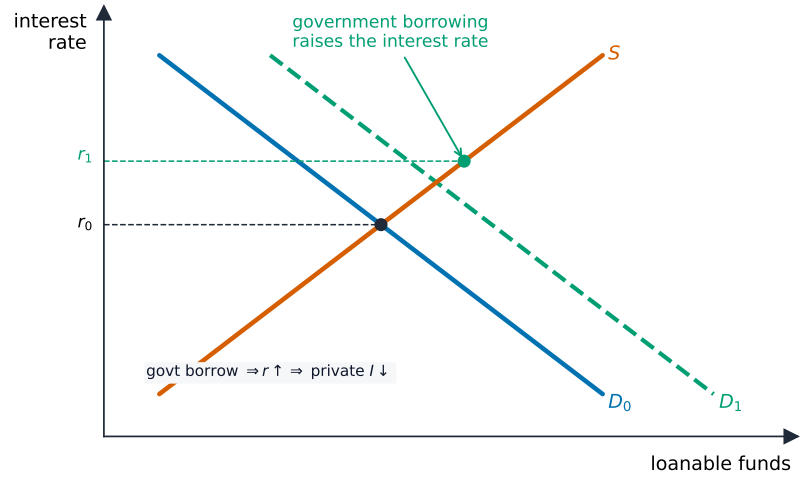
Each tool has strengths and weaknesses.

Financial markets react quickly to policy, which affects how well a policy works.

Fiscal policy

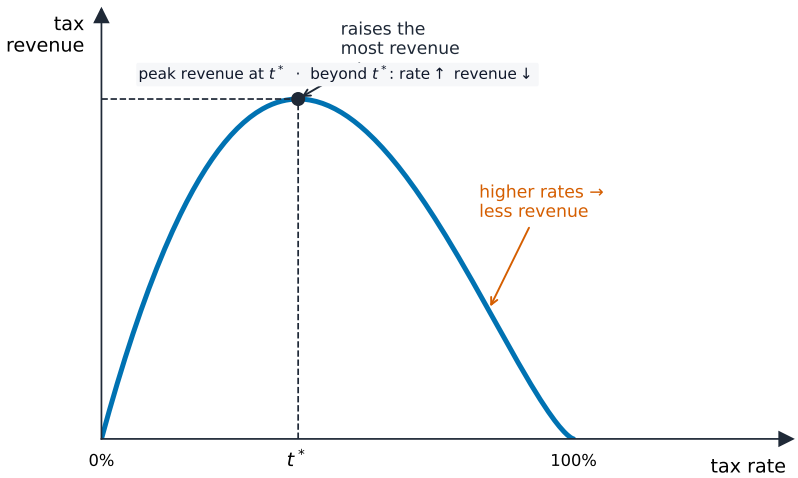
It can act directly and powerfully on demand, and it can target particular groups or regions. But:

- it suffers **time lags** 时滞 — a budget is set once a year, and the effects take time.
- large deficits add to the **national debt** 国债.
- it can cause **crowding out** 挤出效应 — heavy government borrowing raises interest rates and reduces private investment.



Heavy government borrowing shifts the demand for loanable funds right, raising the interest rate ($r_0 \to r_1$) and crowding out private investment.

The **Laffer curve** 拉弗曲线 is a useful warning. It shows that as the tax rate rises, **tax revenue** 税收收入 first rises but then **falls**: very high rates discourage work and encourage tax avoidance, so revenue drops. There is a tax rate that raises the most revenue, and going above it is self-defeating.



Tax revenue is zero at both a 0% and a 100% tax rate; it peaks at the rate t^*, and pushing rates above t^* actually lowers revenue.

Monetary policy

It is flexible — the interest rate can be changed at any time. But it also works with a long time lag, and in a deep slump even very low rates may fail to make worried firms and households borrow.

Supply-side policy

It is the only tool that can raise growth and lower inflation together, with no trade-off. But it is slow (education and training take years), it is costly, and some measures (like cutting benefits) can widen inequality.

Putting it together

No single policy can hit every target. The objectives conflict, the effects come with delays, and the future is uncertain. So governments usually combine **demand-side policies** 需求侧政策 (fiscal and monetary) for the short term with supply-side policy for the long term, and accept that some goals must be traded against others.

Worked example. A government cuts interest rates to reduce unemployment. Which other objective is put at risk, and why? Lower rates make borrowing cheaper and saving less attractive, so consumption and investment rise: **aggregate demand** rises, output rises, and unemployment falls. But that same rise in demand pulls **prices** up, especially as the economy nears full capacity - so the objective at risk is **low**

inflation. This is the classic **Phillips curve** trade-off: lower unemployment bought at the price of higher inflation. It also tends to worsen the **current account**, because richer consumers buy more imports. Name the **objective** at risk and the **mechanism** joining the two - and remember that a **supply-side** policy is the one tool that can improve both objectives at once, which is usually the evaluation the question is fishing for.

Exam tips

- Show the **trade-offs between objectives** (for example growth versus inflation, unemployment versus inflation).
- Evaluate **policy effectiveness** using time lags, expectations and the state of the economy.
- Match the tool (fiscal, monetary, supply-side, exchange rate) to the target, and judge the conflicts.

International economic issues (A Level)

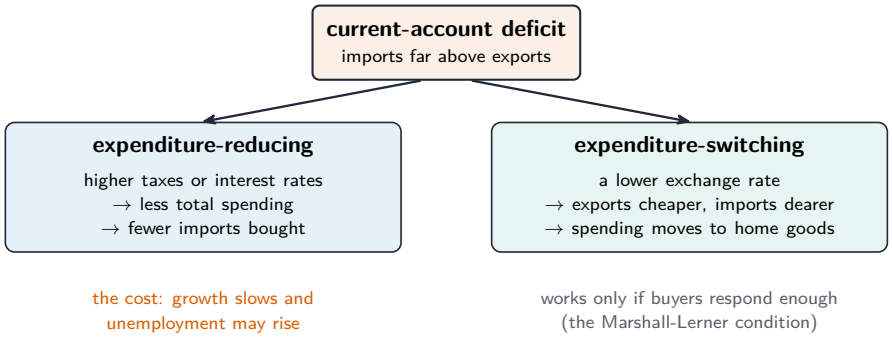
A-Level Economics

This final topic covers trade imbalances, exchange rates in depth, and how countries develop and connect.

Correcting a balance of payments imbalance

A country with a large **balance of payments** 国际收支 problem — usually a deficit on the **current account** 经常账户 — can use two kinds of policy.

- **expenditure-reducing** 支出减少 policies cut total demand (higher taxes or interest rates). With less spending, people buy fewer imports. But growth slows and unemployment may rise.
- **expenditure-switching** 支出转换 policies move spending away from imports towards home goods. The main tool is a lower **exchange rate** 汇率 — a **depreciation** 贬值 under floating rates, or a **devaluation** 法定贬值 under a fixed system — which makes exports cheaper and imports dearer.



Two routes out of a deficit: spend less overall, or switch spending to home goods

The Marshall–Lerner condition and the J-curve

A lower exchange rate only improves the current account if buyers respond enough. The **Marshall-Lerner condition** 马歇尔勒纳条件 says the sum of the price elasticities of demand for exports and imports must be greater than one:

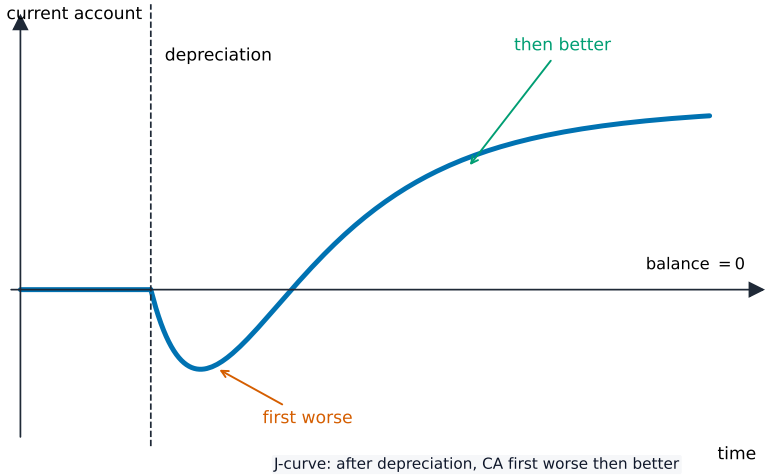
$$PED_{\text{exports}} + PED_{\text{imports}} > 1$$

Worked example. After a depreciation, the demand for a country's exports has $PED = 0.6$ and its demand for imports has $PED = 0.7$. Will the current account improve?

$$0.6 + 0.7 = 1.3 > 1,$$

so the Marshall-Lerner condition **is** met, and the depreciation should improve the current account in the long run. (If the two elasticities had summed to less than 1 — for example $0.3 + 0.4 = 0.7$ — a depreciation would make the deficit **worse**.)

Even when this holds, the gain takes time. The **J-curve effect** J 曲线效应 describes what happens: just after a depreciation, the current account first gets **worse** (imports cost more straight away, but trade volumes are slow to change), then later improves as buyers adjust — tracing the shape of a letter J.



After a depreciation the current account first worsens (imports cost more at once), then improves as trade volumes adjust — tracing a letter J.

Exchange rates

An **exchange rate** is the price of one currency in terms of another. There is more than one way to measure it:

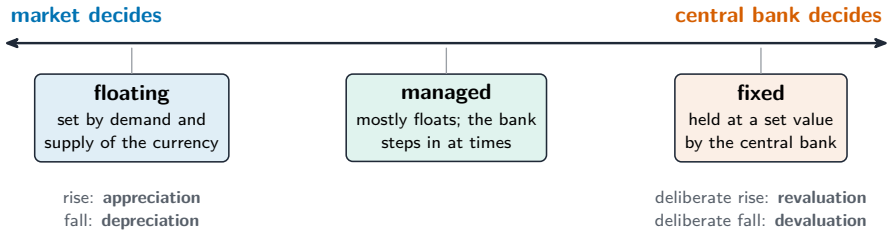
- the **nominal exchange rate** 名义汇率 is the everyday market rate between two currencies.

- the **real exchange rate** 实际汇率 adjusts the nominal rate for differences in prices between the countries, so it shows true competitiveness.
- the **trade-weighted exchange rate** 贸易加权汇率, also called the **effective exchange rate** 有效汇率, is an average of a currency's value against all its trading partners, weighted by how much trade is done with each.

The three systems

- a **floating exchange rate** 浮动汇率 is set by the demand for and supply of the currency.
- a **fixed exchange rate** 固定汇率 is held at a set value by the central bank.
- a **managed exchange rate** 管理浮动汇率 mostly floats, with the central bank stepping in at times.

Under floating rates, a rise in value is an **appreciation** 升值 and a fall is a **depreciation**. Under a fixed system, a deliberate rise is a **revaluation** 法定升值 and a deliberate fall is a **devaluation**. A weaker currency tends to raise exports and inflation; a stronger currency does the opposite.



The three exchange-rate systems, and the words for a rise or fall in each

Economic development

It is important not to confuse two ideas:

Growth is more income; development is wider wellbeing too

- **economic growth** 经济增长 is simply a rise in real output.
- **economic development** 经济发展 is wider. It is about people's **standard of living** 生活水平 — their health, education, and freedom of choice, not just their income.

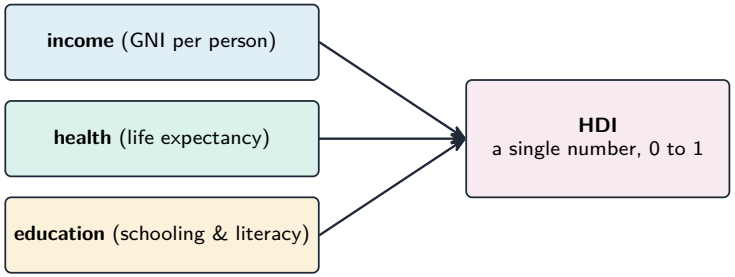
Economic development is wider than growth: it is about living standards in a fast-growing developing economy.

A country can grow without developing much (if the extra income goes to a few people). Development usually means rising incomes **plus** better health, more schooling, and less poverty.

Measuring development

The best-known measure is the **Human Development Index** 人类发展指数 (HDI). It combines three things into one number between 0 and 1:

- income (GNI per person),
- health (**life expectancy** 预期寿命 at birth),
- education (mean and expected **years of schooling** 受教育年限).



The HDI rolls income, health and education into one number — so it captures living standards far better than income alone

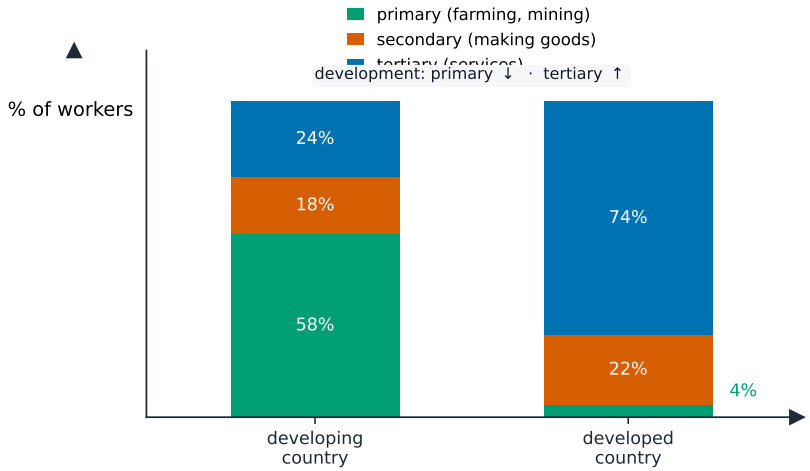
Other useful signs of development include access to clean water, the number of doctors per person, and mobile-phone and internet use.

Comparing countries at different levels of development

We often compare a **developed country** 发达国家 (high income, like Germany) with a **developing country** 发展中国家 (lower income, like Kenya). They differ in clear ways:

Feature	Developed	Developing
income per person	high	low
birth rate 出生率 and population growth	low	often high
life expectancy	high	lower
share of workers in farming	small	large

The **employment structure** 就业结构 also differs. As a country develops, workers move out of the **primary sector** 第一产业 (farming and mining), into the **secondary sector** 第二产业 (making goods), and later into the **tertiary sector** 第三产业 (services).



As a country develops, workers shift out of the primary sector and into the secondary and then the tertiary (services) sector.

Many things shape development: savings and investment, the quality of education and health, infrastructure, stable government and law, and access to world markets.

Relationships between countries

Richer and poorer countries are linked in several ways, each with good and bad sides.

- **trade** can raise incomes, but many developing countries rely on a few primary exports whose prices swing sharply.
- foreign **aid** 援助 can fund schools and roads, but it may create dependency or be wasted.
- **debt** 债务 owed to other countries can pay for development, but repaying it can drain a poor country's budget.
- **foreign direct investment** 外国直接投资 (FDI) by a **multinational corporation** 跨国公司 brings money, jobs and technology, but profits may flow back abroad and workers may be poorly treated.
- **migration** 移民 of workers can ease unemployment and bring in **remittances** 侨汇 (money sent home), but it can also drain a country of its most skilled people.

Globalisation

globalisation 全球化 is the growing links between countries — in trade, money, technology and people — so that the world acts more like one market. Its causes include cheaper transport and communication, **free trade** 自由贸易 agreements, and the spread of multinational firms.

Countries often join a **trade bloc** 贸易集团 — a group that trades freely among themselves (like the European Union).

Globalisation: falling trade and transport costs tie national economies together.

Benefits and costs

Benefits	Costs
lower prices and more choice	some industries and jobs are lost to cheaper countries
faster growth and technology transfer	the gap between rich and poor can widen
larger markets for firms	more pollution and use of resources
poorer countries can industrialise	powerful multinationals may avoid tax and dodge **protectionism** 贸易保护主义 rules

Globalisation helps developed and developing economies in different ways, but the gains are not shared evenly, which is why it remains so argued about.

Exam tips

- Distinguish **expenditure-reducing from expenditure-switching** policies for a deficit.
- Explain the **Marshall-Lerner condition** ($PED_x + PED_m > 1$) and the **J-curve** (the deficit worsens before it improves).
- Compare development with the **HDI** (income, education, health), not GDP alone.
- Evaluate **globalisation** with its winners and losers (growth and choice versus inequality and instability).