

Course Companion

IGCSE Economics

Every topic handout in one volume

全部专题讲义合集

exercises.lol

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The basic economic problem

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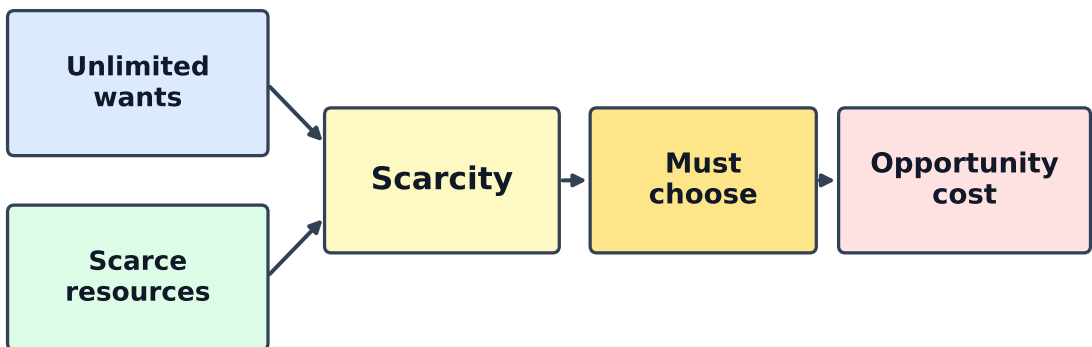
The economic problem

Economics is about how people use **resources** 资源 to meet their needs and wants. The main idea is simple. People want a lot, but there are not enough resources to make everything. This is the **economic problem** 经济问题.

Two facts cause the economic problem:

- Resources are **finite** 有限的. There is only a limited amount of them.
- People's **wants** 欲望 are unlimited. People always want more and better things.

Because wants are unlimited but resources are limited, resources are **scarce** 稀缺. We call this problem **scarcity** 稀缺性. Scarcity is the root of all economics.



Exam: scarcity forces choice — opportunity cost is the next-best alternative forgone

The economic problem: scarcity forces choice, and every choice has an opportunity cost

Goods, services, and choices

We use resources to make **goods** 物品 (things you can touch, like food and phones) and **services** 服务 (jobs done for you, like a haircut or a bus ride).

Because resources are scarce, we cannot have everything. So everyone must make **choices**. Scarcity forces four groups to choose:

- **consumers** 消费者 — people who buy and use goods and services. They choose what to buy.

- **workers** 工人 — they choose which job to do.
- **producers** 生产者, also called **firms** 企业 — they make goods and services. They choose what to produce.
- **governments** 政府 — they choose what to provide and how to spend public money.

Economic goods and free goods

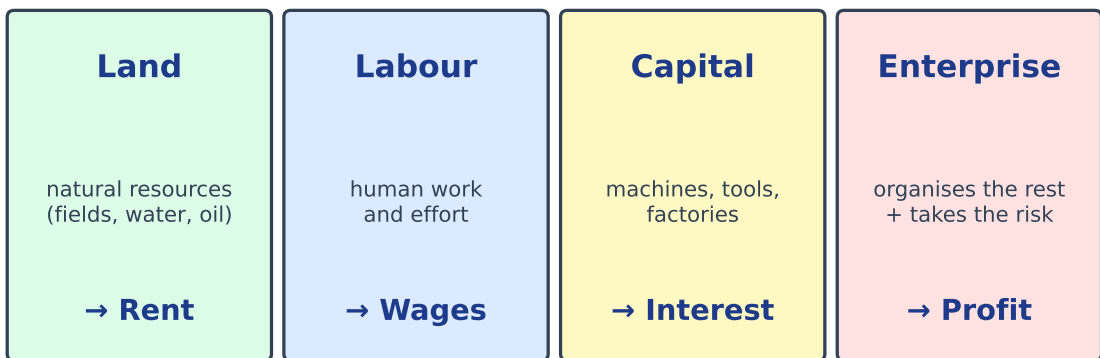
Most things are **economic goods** 经济物品. They are scarce, so making or using one means giving something else up. Economic goods have an **opportunity cost** 机会成本 (explained below).

A few things are **free goods** 免费物品. They are not scarce — there is enough for everyone and they cost nothing to use. Examples are the air you breathe and sunlight. A free good has no opportunity cost.

Be careful: a “free” sample or a “free” gift is *not* a free good. Resources were used to make it, so it is still an economic good.

Factors of production

To make goods and services, firms use four types of resource. We call them the **factors of production** 生产要素.



Exam: name factor + reward together (land→rent, labour→wages, capital→interest, enterprise→profit)

The four factors of production and the reward each one earns

The four factors

Factor	What it is	Example
land 土地	natural resources	fields, water, oil, forests
labour 劳动	human work	a teacher, a builder, a nurse
capital 资本	man-made things used to produce	machines, tools, factories
enterprise 企业家才能	organising the other three and taking risks	a person who starts a business

The person who provides enterprise is the **entrepreneur** 企业家. They bring the other factors together and risk their own money to start and run a business.



Land — natural resources such as farmland — is one of the four factors of production

The reward to each factor

Each factor earns a **reward** 报酬 — the income it gets for being used:

Factor	Reward
land	rent 地租
labour	wages 工资
capital	interest 利息
enterprise	profit 利润

Mobility, quantity and quality

The **mobility** 流动性 of a factor means how easily it can move to a different use or place. A worker with many skills can change jobs easily, so labour is mobile. A worker with only one skill, or a factory that cannot be moved, is less mobile.

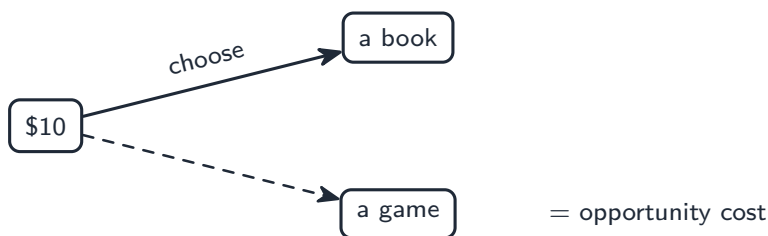
The quantity and quality of factors can change:

- **Quantity** can rise or fall. The amount of labour grows if the birth rate rises or people move into the country to work. Land can be lost to the sea or gained by draining it.
- **Quality** can rise. Training and education make labour better. New technology makes capital better. Higher quality means each factor can produce more.

Opportunity cost



Consumers choosing what to buy at a busy market — scarcity forces everyone to make choices



Choosing one thing means giving up the next best alternative

When you choose one thing, you give up the next best choice. That is the real cost of your decision.

Opportunity cost is the next best **alternative** 替代选择 you give up when you make a choice.

It affects every decision-maker:

- A **consumer** who buys a game gives up the book they could have bought instead.
- A **worker** who takes one job gives up the pay of the next job they could have done.
- A **producer** who makes more cars uses factors that could have made trucks.
- A **government** that builds a hospital gives up the school it could have built with the same money.

Opportunity cost matters because resources are scarce. Every choice has a cost, even when no money changes hands.

Production possibility curve (PPC) diagrams

A **production possibility curve** 生产可能性曲线 (PPC) shows the largest amounts of two goods a country can make when it uses all its resources fully.

Imagine an economy that makes only two types of good, one on each axis:

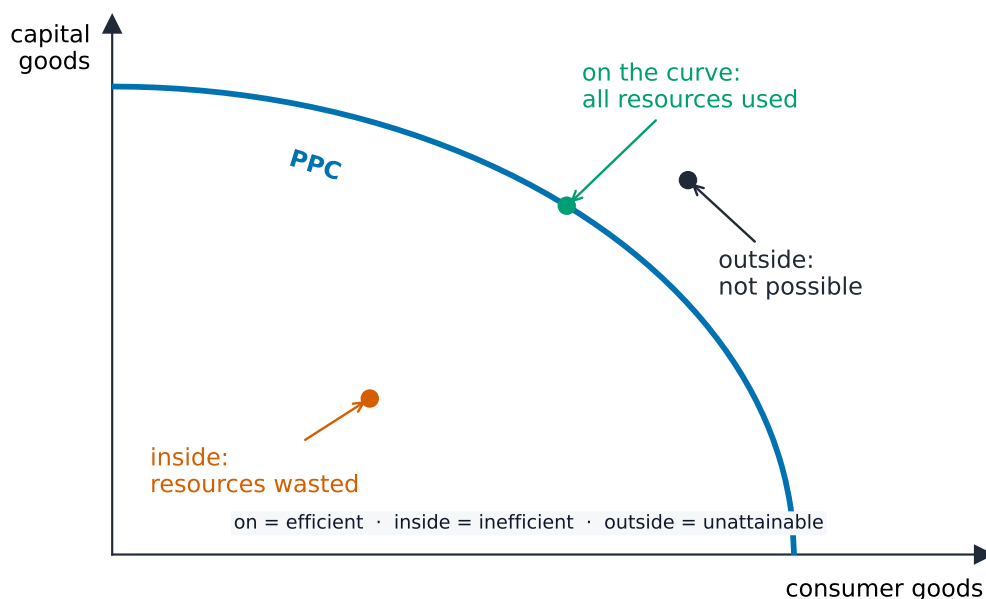
- **capital goods** — used to make other goods, like machines.
- **consumer goods** — used up by people, like food and clothes.

The PPC is the line joining every point where the economy uses all its resources to make the most it can.

Reading the diagram

Picture the two goods on the two axes. The PPC is a curve that bends from one axis down to the other (it usually bows outward, away from the corner):

- A point **on** the curve: all resources are used fully. The economy makes the most it can.
- A point **inside** the curve: resources are wasted or not all used — for example, there is **unemployment** 失业. The economy could make more.
- A point **outside** the curve: this is impossible now. There are not enough resources to reach it.



A point on the curve uses all resources; inside the curve some are wasted (e.g. unemployment); outside is not possible with today's resources.

Movements along the curve

If the economy already uses all its resources (a point on the curve), making more of one good means making less of the other. You must move factors from one good to the other. This is a **trade-off** 取舍.

The amount of the second good you give up is the opportunity cost of the extra first good. This is why the PPC is a clear picture of opportunity cost.

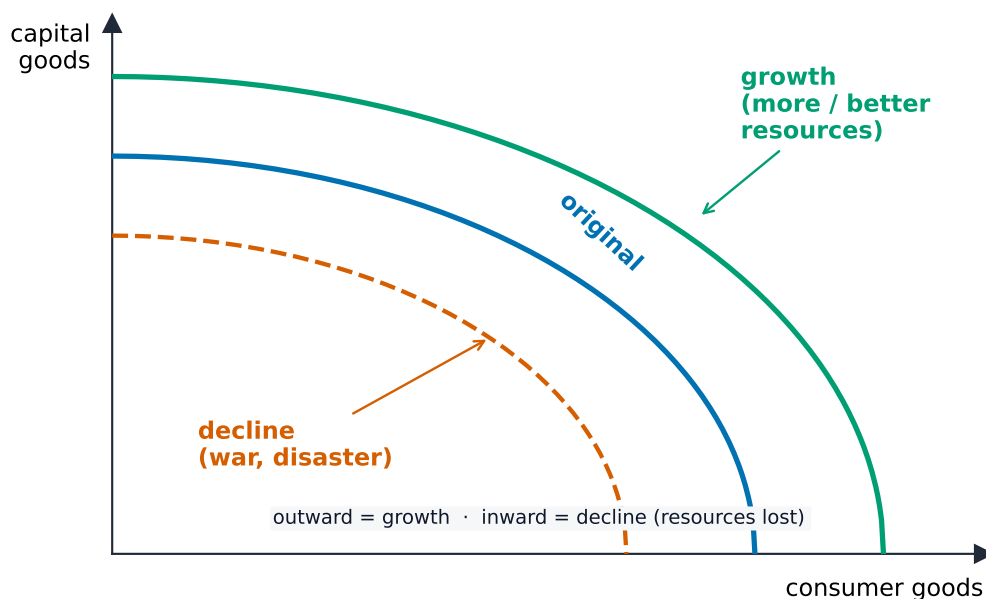
Worked example. An economy on its PPC makes 40 machines and 60 tonnes of food. To make 50 machines it must cut food to 45 tonnes. Give the opportunity cost of the extra machines. Then say what a point of 30 machines and 40 tonnes of food would tell you. The economy is already **on** the curve, so more of one good

must mean less of the other: the 10 extra machines cost $60 - 45 = 15$ tonnes of **food**. That lost food **is** the opportunity cost, so quote it in tonnes of food - never in money. The second point lies **inside** the curve, which means resources are idle or wasted, most likely through unemployment; from there the economy could make more of **both** goods, so moving out to the curve costs nothing at all. Opportunity cost only bites once you are **on** the curve.

Shifts of the curve

The whole curve can move:

- It shifts **outward** (to the right) when the country can make more of *both* goods. This is **economic growth** 经济增长. Causes: more resources (a bigger workforce, more land discovered) or better-quality resources (training, new technology).
- It shifts **inward** (to the left) when the country can make less. This is **economic decline** 经济衰退. Causes: fewer or worse resources — for example a war, a natural disaster, or using up **non-renewable resources** 不可再生资源 (resources like oil and coal that cannot be replaced once used).



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

Do not confuse the two. Moving from inside the curve *to* the curve (by using idle resources) is a short-term gain. Moving the whole curve outward is a long-term change.

Exam tips

- **Scarcity** (unlimited wants, limited resources) forces **choice**, and every choice has an **opportunity cost** — the next best alternative you give up.
- Learn the four **factors of production** and the reward each earns: land–rent, labour–wages, capital–interest, enterprise–profit.
- On a **PPC**, a point *on* the curve uses all resources fully, *inside* wastes some (e.g. unemployment), and *outside* is impossible for now. Moving along the curve shows opportunity cost.
- Moving *to* the curve (using idle resources) is a short-term gain; shifting the whole curve *outward* is long-term economic growth from more or better resources.

The allocation of resources

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Markets and the price mechanism

Economics is split into two parts:

- **microeconomics** 微观经济学 — the study of single parts of the economy, such as one industry or one product.
- **macroeconomics** 宏观经济学 — the study of the whole economy, like total jobs, prices, and growth.

A **market** 市场 is any place or system where buyers and sellers meet to trade. It does not need a building — it can be online or over the phone.



A stock exchange is a market: as buyers and sellers trade, their offers set the price of each share

When a market is free, no one is in charge of deciding what to make. Instead, the **price mechanism** 价格机制 (the free movement of prices) **allocates** 配置 **resources** 资源 — it decides what is made, how, and for whom. Price does three jobs:

- the **signalling** 信号 function — a price change tells buyers and sellers what is happening. A rising price signals “make more”; a falling price signals “make less”.
- the **incentive** 激励 function — a higher price gives **firms** 企业 a reason to produce more, because they can earn more.
- the **rationing** 配给 function — when a product is scarce, its price rises. The high price shares out the limited amount to those willing to pay.

Demand

Demand 需求 is the amount of a **good** 物品 that **consumers** 消费者 (buyers) are willing and able to buy at each price, in a period of time.

The **law of demand** 需求定律 says: when the price of a good rises, the quantity demanded falls; when the price falls, the quantity demanded rises. Price and quantity move in opposite directions — an **inverse relationship** 反向关系. This is true **ceteris paribus** 其他条件不变 (a Latin phrase meaning “all other things stay the same”).

Movements and shifts

It helps to separate two ideas:

- **quantity demanded** 需求量 — the amount bought *at one price*.
- **demand** — the whole pattern of buying at every price.

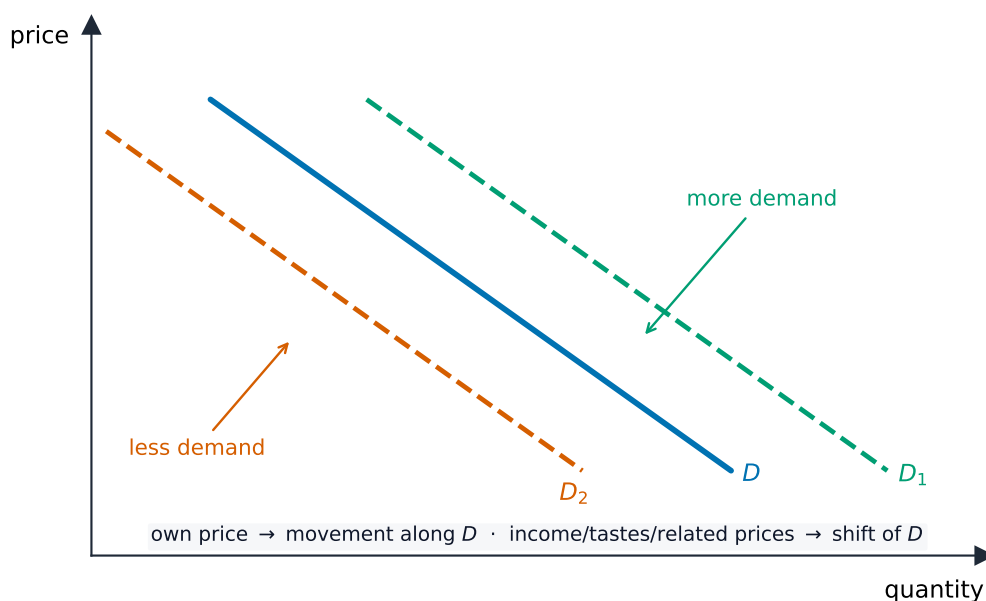
On a demand diagram, price is on the up axis and quantity on the across axis. The **demand curve** 需求曲线 slopes downward from left to right: high price, low quantity; low price, high quantity.

- A change in the good’s **own price** causes a **movement along** the demand curve. You slide to a new point on the *same* line.
- A change in any other condition causes a **shift** 移动 of the whole curve. A rightward shift means more is demanded at every price; a leftward shift means less.

Conditions of demand

These are the things (other than the good's own price) that shift the demand curve:

- **income** 收入 — more income usually means more demand.
- **tastes** 偏好 — if a good becomes popular, demand rises.
- price of **substitutes** 替代品 — goods used *instead* of each other (tea and coffee). If coffee gets dearer, demand for tea rises.
- price of **complements** 互补品 — goods used *together* (cars and fuel). If cars get dearer, demand for fuel falls.
- **population** 人口 — more people means more demand.
- **advertising** 广告 — good adverts raise demand.



The demand curve slopes down. A change in income, tastes, population or related prices shifts the whole curve; a change in the good's own price is a movement along it.

Supply

Supply 供给 is the amount of a good that firms are willing and able to sell at each price, in a period of time.

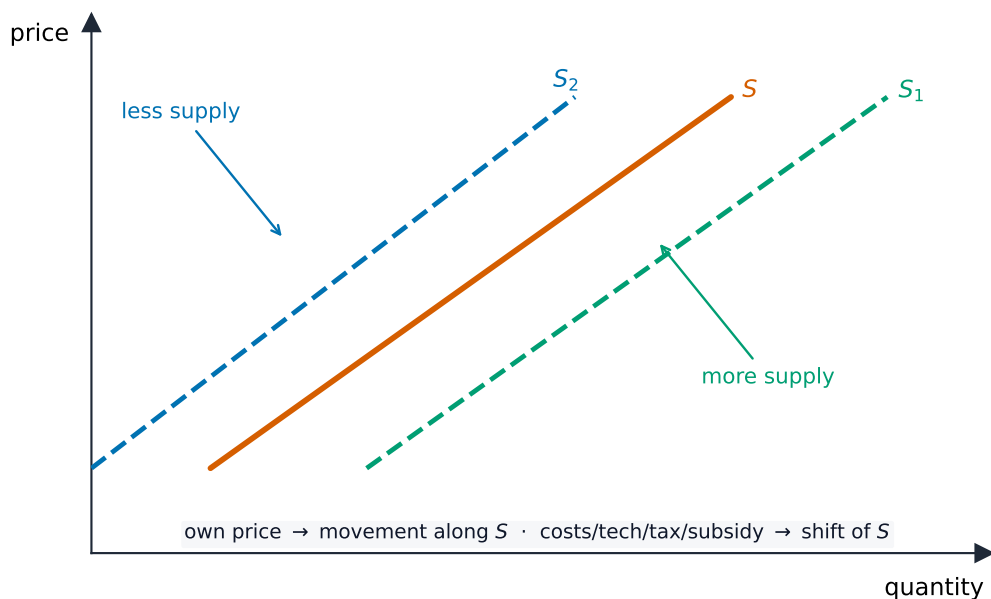
The **law of supply** 供给定律 says: when the price rises, the quantity supplied rises too. Price and quantity move the same way — a **direct relationship** 正向关系. Firms supply more at a high price because they can earn more.

Movements and shifts

- **quantity supplied** 供给量 — the amount offered *at one price*.
- The **supply curve** 供给曲线 slopes upward from left to right.
- A change in the good's own price → a movement along the curve.
- A change in any other condition → a shift of the whole curve.

Conditions of supply

- **costs of production** 生产成本 — if costs rise, firms supply less (curve shifts left).
- **technology** 技术 — better technology lowers costs, so supply rises.
- **taxes** and subsidies — a **tax** 税收 on a good raises firms' costs (supply falls); a **subsidy** 补贴 (money from the government) lowers costs (supply rises).
- weather — important for farm goods.
- number of firms — more firms means more supply.



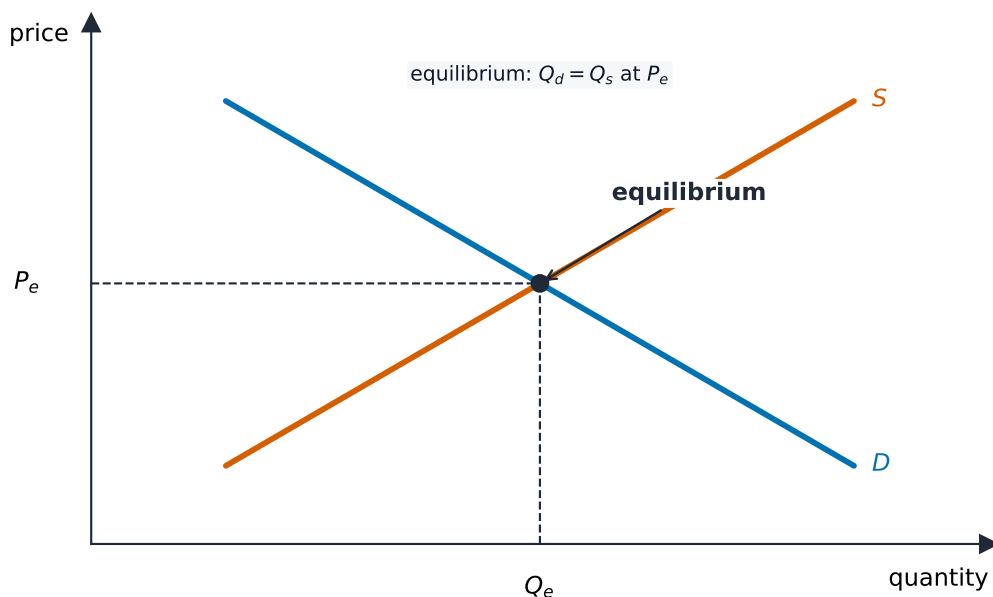
The supply curve slopes up. Lower costs, better technology or a subsidy shift it right; higher costs or a tax shift it left.

Price determination

The price of a good is set where demand and supply meet. Draw both curves on one diagram. They cross at a single point. This point gives:

- the **equilibrium** 均衡 price — the price where the amount buyers want to buy exactly equals the amount firms want to sell.
- the equilibrium quantity — the amount traded at that price.

At equilibrium, quantity demanded equals quantity supplied. There is no good left over and no buyer left waiting.



The price settles where the demand and supply curves cross — the equilibrium price P_e and quantity Q_e .

Price changes

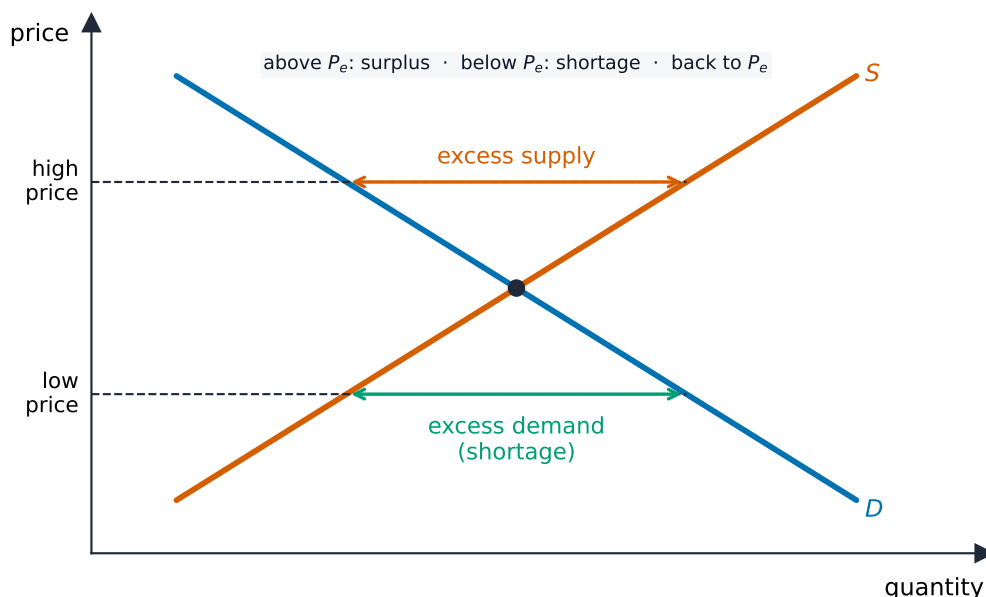
When a curve shifts, the crossing point moves, so price and quantity change:

- Demand rises (shifts right): price rises and quantity rises.
- Demand falls (shifts left): price falls and quantity falls.
- Supply rises (shifts right): price falls and quantity rises.
- Supply falls (shifts left): price rises and quantity falls.

Disequilibrium

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

- If price is **below** equilibrium, buyers want more than firms supply. This is **excess demand** 超额需求, also called a **shortage** 短缺. Buyers compete, so the price is pushed up until equilibrium returns.
- If price is **above** equilibrium, firms supply more than buyers want. This is **excess supply** 超额供给, also called a **surplus** 过剩. Sellers cut the price until equilibrium returns.



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.

Price elasticity of demand (PED)

Price elasticity of demand 需求价格弹性 measures how much the quantity demanded changes when the price changes.

$$\text{PED} = (\% \text{ change in quantity demanded}) \div (\% \text{ change in price})$$

(We usually ignore the minus sign and read the size of the number.) The **determinants** 决定因素 (the things that decide PED) include whether the good has close substitutes, whether it is a need or a luxury, and what share of income it takes.

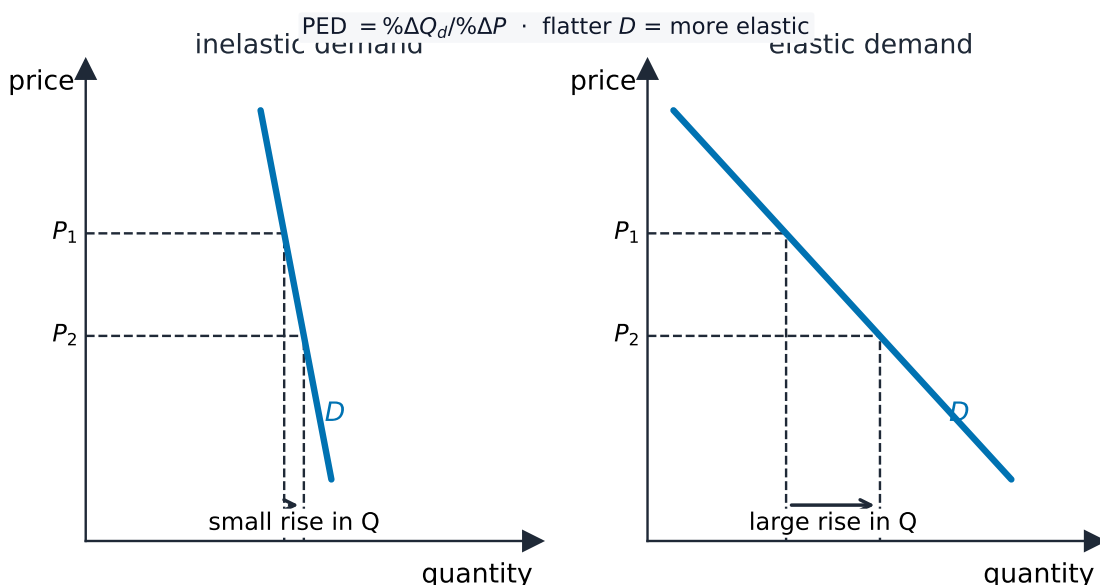
Worked example. When the price of a good rises by 20%, the quantity demanded falls by 10%. Find the PED.

$PED = (\% \text{ change in quantity demanded}) \div (\% \text{ change in price}) = 10 \div 20 = 0.5$.

Because 0.5 is less than 1, demand is **inelastic** — the quantity changed by a smaller percentage than the price.

Reading the value

- PED greater than 1: demand is **elastic** 富有弹性. Quantity changes by a large %. (Goods with many substitutes, like one brand of crisps.)
- PED less than 1: demand is **inelastic** 缺乏弹性. Quantity changes by a small %. (Needs with few substitutes, like petrol or salt.)
- PED equal to 1: **unit elastic** 单位弹性. Quantity changes by the same % as price.



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

PED and total revenue

Total revenue 总收益 is the money a firm gets from sales: price $\times$ quantity sold. (To the buyer, the same money is **total expenditure** 总支出.) PED tells a firm what happens to revenue if it changes its price:

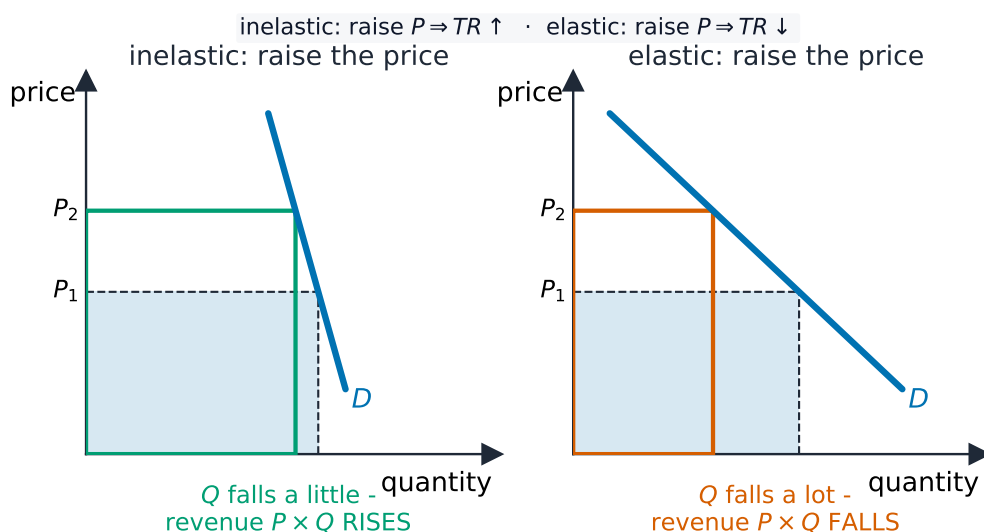
- If demand is inelastic, raising the price *raises* total revenue (quantity falls only a little).
- If demand is elastic, raising the price *lowers* total revenue (quantity falls a lot).

This is useful. A firm sets prices knowing how buyers will react. A government taxes inelastic goods (like cigarettes) because people keep buying them, so the tax raises a lot of money.

Worked example. A bus company sells 1,000 tickets a day at £2 each. It raises the price by 10% to £2.20, and daily sales fall by 5% to 950. Find the PED and what happens to total revenue.

- $PED = 5 \div 10 = 0.5$, so demand is inelastic (less than 1).
- old revenue = $£2 \times 1,000 = £2,000$.
- new revenue = $£2.20 \times 950 = £2,090$.

Total revenue rose by £90. Because demand is inelastic, the price rose by a bigger percentage than the quantity fell, so raising the price raised revenue.



The same price rise raises revenue when demand is inelastic, but lowers it when demand is elastic

Price elasticity of supply (PES)

Price elasticity of supply 供给价格弹性 measures how much the quantity supplied changes when the price changes.

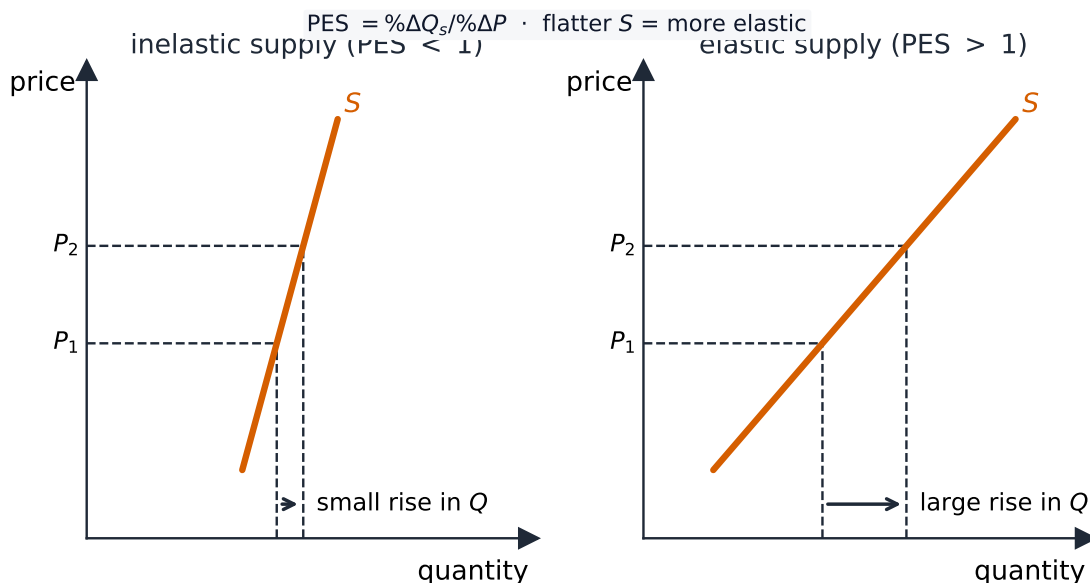
$$PES = (\% \text{ change in quantity supplied}) \div (\% \text{ change in price})$$

Supply is elastic if PES is greater than 1, and inelastic if PES is less than 1.

Worked example. When the price of a good rises by 10%, the quantity supplied rises by 30%. Find the PES.

$PES = (\% \text{ change in quantity supplied}) \div (\% \text{ change in price}) = 30 \div 10 = 3$.

Because 3 is greater than 1, supply is elastic.



The same price rise: a small quantity response when supply is inelastic, a large one when it is elastic

The determinants of PES are:

- **time** — supply is more elastic over a long time, because firms can change how much they make.
- **spare capacity** 闲置产能 — if a firm has unused machines and workers, it can raise output quickly, so supply is elastic.
- **stocks** 库存 — goods kept in store can be sold quickly, making supply elastic.
- ease of switching factors — if a firm can move factors of production to make this good easily, supply is more elastic.

Farm goods often have inelastic supply in the short run, because crops take a season to grow.

The market economic system

In a **market economy** 市场经济, the price mechanism makes all the choices. There is no government planning. (The opposite is a **planned economy** 计划经济, where the government makes the choices.)

Advantages of the market system:

- Prices guide resources to where they are wanted, without anyone planning.
- Firms compete, so they cut costs and create new and better goods.
- Consumers have wide choice.

Disadvantages:

- Some useful goods are not made because they earn no profit.
- The strong (rich firms and people) do well; the weak may be left with nothing.
- Markets can fail (see below).

Market failure

Market failure 市场失灵 happens when the price mechanism leads to an **inefficient** 低效率 use of resources — resources are not shared out in the best way for society. The main causes:

External costs and benefits



Pollution from a power station is an external cost — it falls on third parties, not just the producer

When you produce or consume something, the cost or benefit to *you* is not always the cost or benefit to *everyone*.

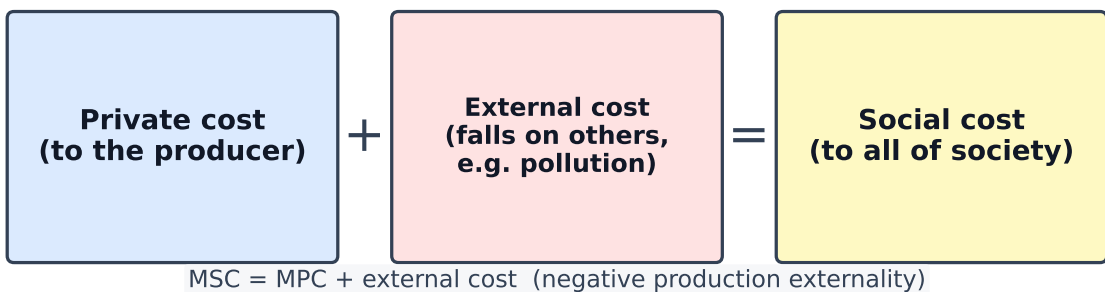
- a **private cost** 私人成本 is the cost to the person doing the activity.
- an **external cost** 外部成本 is a cost paid by other people — for example, smoke from a factory harms nearby families.

- the **social cost** 社会成本 is the private cost plus the external cost (the cost to the whole of society).

In the same way:

- a **private benefit** 私人效益 is the benefit to the person doing the activity.
- an **external benefit** 外部效益 is a benefit that others get for free — for example, your neighbour's tidy garden is nice for you too.
- the **social benefit** 社会效益 is the private benefit plus the external benefit.

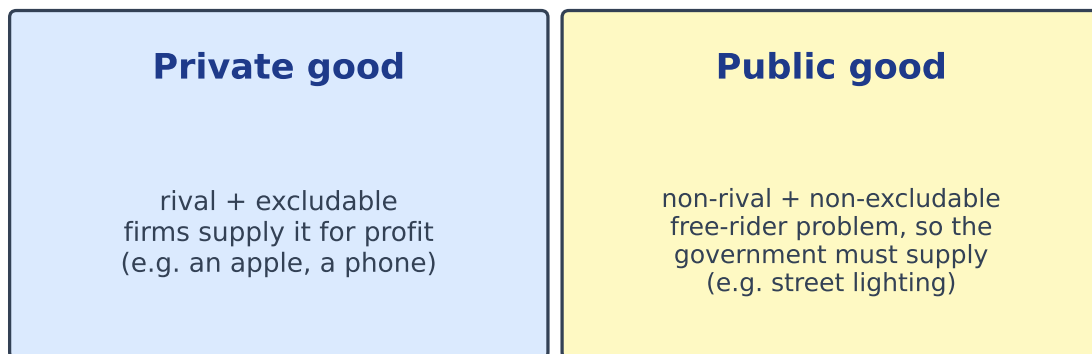
Markets fail because firms and consumers only think about their *private* costs and benefits, not the external ones.



An external cost (e.g. pollution) falls on third parties, so the social cost is greater than the producer's private cost

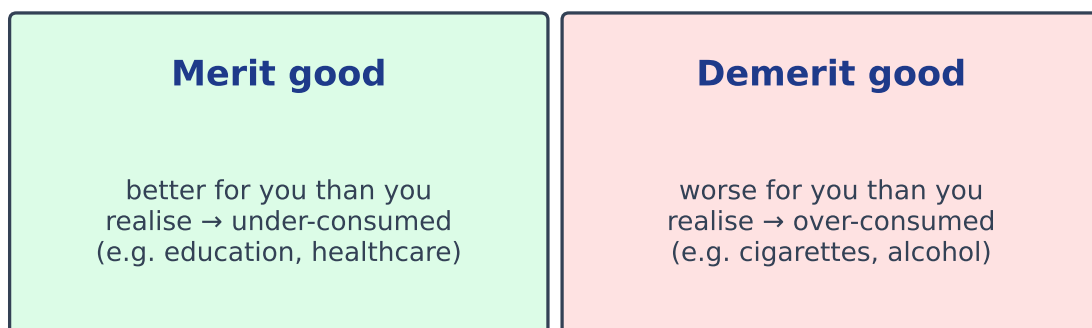
Merit, demerit and public goods

- **merit goods** 有益物品 are better for you than you realise, so the market makes too few (education, healthcare).
- **demerit goods** 有害物品 are worse for you than you realise, so the market makes too many (cigarettes, alcohol).
- **public goods** 公共物品 are things everyone can use and no one can be stopped from using, like street lights or national defence. The market makes none, because firms cannot charge for them.



Exam: public goods fail the free-rider test — non-rival and non-excludable → government supply

A private good is rival and excludable (firms supply it); a public good is non-rival and non-excludable (the government must supply it)



Exam: merit → under-consumed (subsidise); demerit → over-consumed (tax / regulate)

Merit and demerit goods are mis-judged because of information failure

Abuse of monopoly power

A **monopoly** 垄断 is a single firm that controls a market. With no competition, it can charge high prices and make poor-quality goods. This is another market failure.

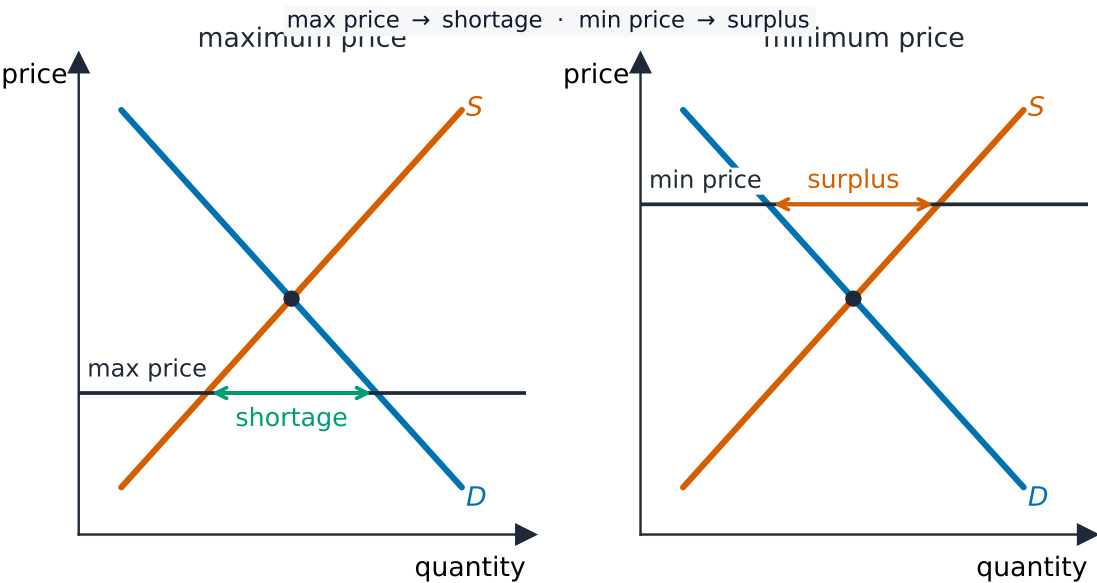
The mixed economic system

A **mixed economy** 混合经济 has both:

- a **private sector** 私营部门 — firms owned by people, guided by the price mechanism.
- a **public sector** 公共部门 — activity run by the government.

Most real economies are mixed; China’s, for example, is a socialist market economy. The government steps in to correct market failure. This is government **intervention** 干预. The main methods:

Method	What it does
maximum price 最高价格	a price ceiling, set below equilibrium, to keep a good (like rent) cheap — but it causes a shortage
minimum price 最低价格	a price floor, set above equilibrium, to keep a price up (like a fair wage) — but it causes a surplus
indirect tax 间接税	a tax on a good (added to its price) to cut demand for demerit goods
subsidy	money paid to firms to cut the price and raise output of merit goods
regulation 监管	rules and laws, like banning smoking in public
direct provision 直接提供	the government makes and gives out goods itself, like state schools



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

Judging intervention

Intervention can fix market failure, but it has costs. Taxes and rules cost money to collect and check. Governments can get things wrong too (this is called government failure). So you should always weigh the good effects against the bad ones before deciding.

Exam tips

- A change in a good's **own price** is a *movement along* the curve; a change in anything else (income, tastes, related prices) *shifts* the whole curve.
- **Equilibrium** is where demand meets supply. Below it there is excess demand (a shortage, so price rises); above it there is excess supply (a surplus, so price falls).
- $PED = \% \Delta Q \div \% \Delta P$. Demand is **inelastic** if $PED < 1$ (raising price raises revenue) and **elastic** if $PED > 1$ (raising price lowers revenue).
- **Market failure** (external costs, merit/demerit/public goods, monopoly) means resources are used badly; the government corrects it with taxes, subsidies, rules and direct provision.

Microeconomic decision-makers

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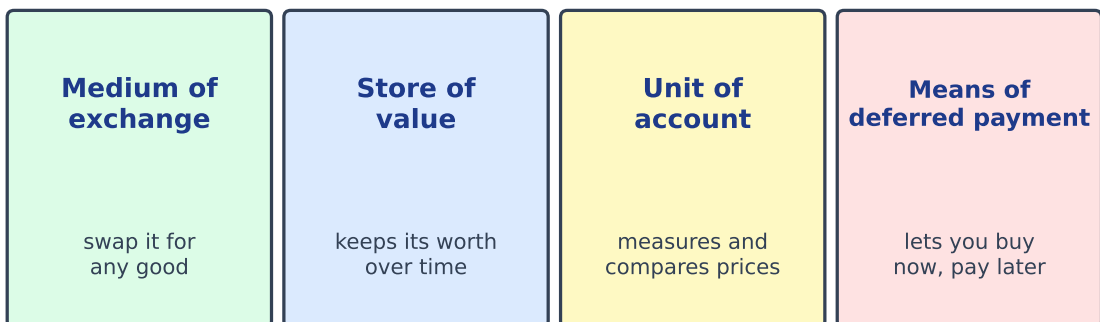
Money and banking

Long ago, people swapped goods directly. This is called **barter** 物物交换. Barter is hard: you must find someone who has what you want *and* wants what you have. **Money** 货币 solves this problem.

The functions of money

Money does four jobs:

- a **medium of exchange** 交换媒介 — you swap money for goods, so you do not need barter.
- a **store of value** 价值储藏 — you can hold money now and spend it later, because it keeps its value.
- a **unit of account** 记账单位 — money measures and compares the value of things (this is the price).
- a **means of deferred payment** 延期支付手段 — you can buy now and pay later.



Exam: list all four functions — medium of exchange, store of value, unit of account, deferred payment

Money's four functions: a medium of exchange, a store of value, a unit of account, and a means of deferred payment



Money — banknotes and coins — works as a medium of exchange, a store of value, a unit of account, and a means of deferred payment

The characteristics of money

Good money must be:

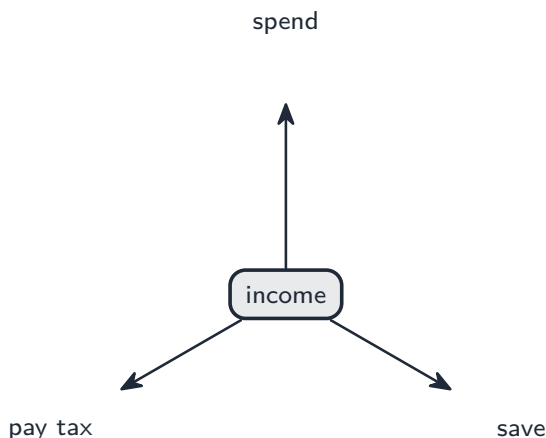
- **durable** 耐用的 — it lasts a long time.
- **portable** 便于携带的 — easy to carry.
- **divisible** 可分割的 — can be split into small amounts for small payments.
- limited in supply, hard to copy, and accepted by everyone.

Banks

- A **central bank** 中央银行 is the government's bank. It issues notes, looks after the banking system, and sets **interest rates** 利率. There is one in each country.
- **commercial banks** 商业银行 are the ordinary banks that people and **firms** 企业 use. They keep savings safe, lend money, and let people pay each other.

Households

A **household** 家庭 is a person or group living together and making money decisions. Each household must choose how much to spend, save, and borrow.



A household can spend, save or pay tax with its income

- **saving** 储蓄 is income that is not spent now.
- **borrowing** 借贷 is spending money you do not have yet, and paying it back later (usually with an extra charge).

Three main things change these choices:

- **income** 收入 — with more income, people spend and save more.
- interest rates — a higher interest rate makes saving more rewarding and borrowing dearer. So saving rises and borrowing falls.
- **confidence** 信心 — if people feel sure about their jobs and the future, they spend and borrow more. If they are worried, they save more.

Workers

Choosing a job

When a worker chooses an **occupation** 职业 (a type of job), two kinds of factor matter:

- **wage factors** — the pay. The **wage** 工资 is the money you earn. Higher pay attracts more workers.

- **non-wage factors** — everything else: working hours, holidays, how safe or pleasant the job is, whether you enjoy the work, distance from home, and the chance to move up to a higher job.

Why workers earn different amounts

Workers are not all paid the same. The reasons include:

- skills & qualifications
- danger / difficulty of the job
- demand for the job

all affect a worker's wage

Wages depend on skills, the difficulty of the job, and demand

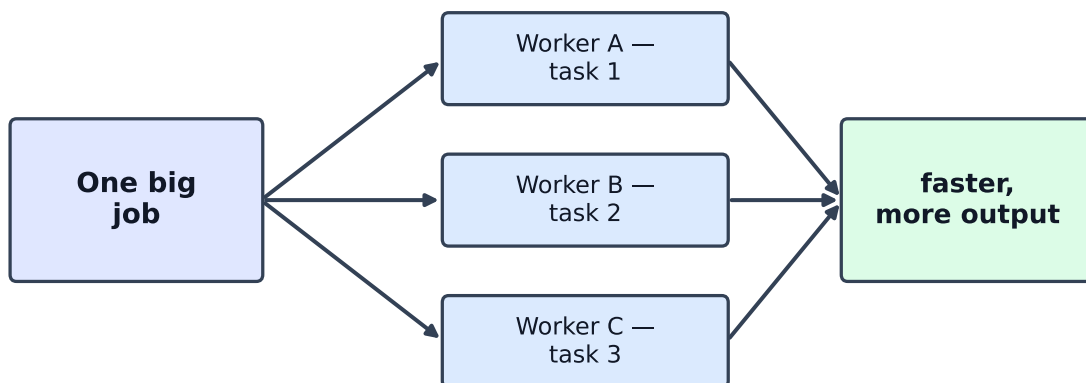
- **skill** 技能 and **qualifications** 资格 — workers who are hard to replace, or who studied for years, earn more.
- **danger** — risky or dirty jobs may pay more to attract workers.
- **trade unions** 工会 — a trade union is a group of workers who join together to bargain for better pay and conditions. Strong unions can raise pay.
- **discrimination** 歧视 — unfair treatment because of gender, race, or age can cause unfair pay gaps.

Division of labour

Division of labour 劳动分工 (also called **specialisation** 专业化) means splitting a job into small tasks, with each worker doing one task again and again.

Advantages: workers get faster and better at their one task; less time is wasted moving between tasks; this raises output.

Disadvantages: doing one task is boring, so workers may make mistakes or leave; if one worker is absent, the whole line can stop; each worker learns only one skill.



Exam: specialisation raises productivity — but monotony and interdependence are trade-offs

Division of labour: splitting a job into small repeated tasks raises output per worker

Firms

The size of firms

Firms come in many sizes, from one person to huge companies. We can measure size by the number of workers, the amount of **capital** 资本 used, or the output.

Some firms stay small because: the **market** 市场 is small; the product is personal (like a hairdresser); the owner wants to stay in control; or there is little money to grow.

How firms grow

Firms grow by selling more, or by joining with other firms. When two firms join, it is a **merger** 合并 (or takeover). There are three types:

- **horizontal merger** 横向合并 — two firms at the *same* stage of the *same* industry join (two car makers).

- **vertical merger** 纵向合并 — two firms at *different* stages of the same industry join (a car maker and a tyre maker). “Backward” is towards the supplier; “forward” is towards the seller.
- **conglomerate merger** 混合合并 — two firms in *different* industries join (a car maker and a food company).

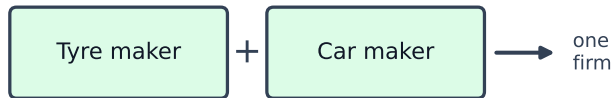
Horizontal

same stage, same industry



Vertical

different stages, same industry



Conglomerate

different industries



Exam: horizontal = same stage; vertical = supply chain; conglomerate = different industries

The three types of integration: horizontal (same stage), vertical (different stages of one industry), and conglomerate (different industries)

Business failure

Firms can suffer **business failure** 企业倒闭 (they close down) for many reasons: costs too high, too few sales, poor management, too many rivals, not enough cash, or a fall in **demand** 需求.

Firms and production

Labour-intensive and capital-intensive

- **labour-intensive** 劳动密集型 production uses a lot of **labour** 劳动 (many workers) and little machinery — for example, hand-made crafts.
- **capital-intensive** 资本密集型 production uses a lot of capital (machines) and few workers — for example, a modern car factory.



A car assembly line is capital-intensive (many machines, few workers) and uses the division of labour — each worker repeats one task

Productivity

Productivity 生产率 means output per worker (or per machine) in a set time. Higher productivity means each worker makes more, so the cost of each unit falls. Training, better machines, and good management all raise productivity.

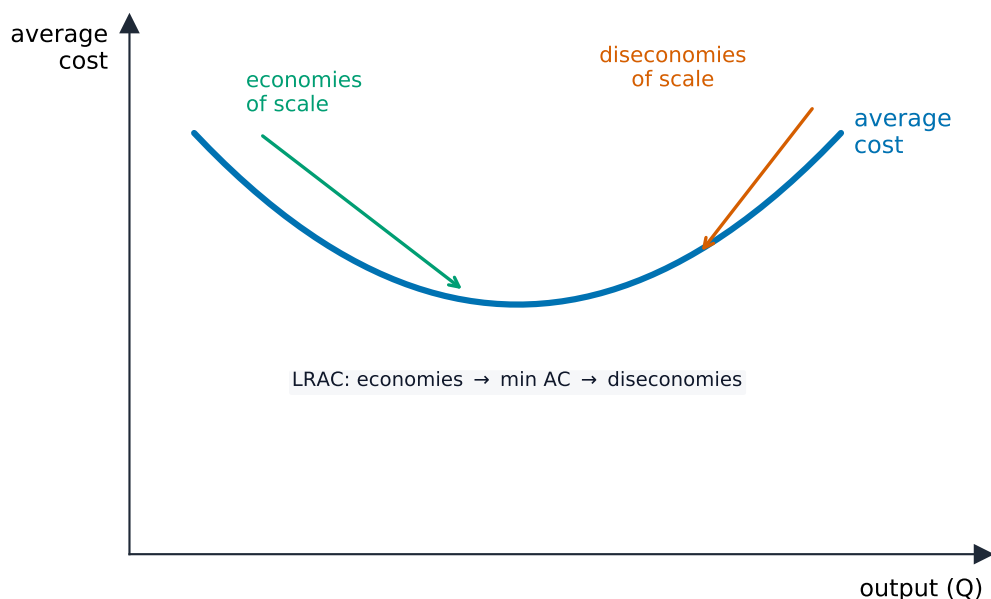
Demand for and supply of factors

Firms buy **factors of production** 生产要素 (**land** 土地, labour, capital, and **enterprise** 企业家才能). The price and amount of each factor are set by its own demand and supply, just like any market. For example, if many firms want skilled workers, the wage for those workers rises.

Economies and diseconomies of scale

As a firm grows and makes more, the cost of each unit can change:

- **economies of scale** 规模经济 — as output rises, the average cost of each unit *falls*. Reasons: buying materials in bulk is cheaper, big machines work more efficiently, and large firms borrow money cheaply.
- **diseconomies of scale** 规模不经济 — if a firm grows *too* big, the average cost of each unit starts to *rise*. Reasons: a huge firm is hard to manage, messages travel slowly, and workers may feel less important.



Average cost falls as a firm grows (economies of scale), reaches a low point, then rises if it grows too big (diseconomies of scale).

These can be *internal* (caused by the firm's own size) or *external* (caused by the whole industry growing).

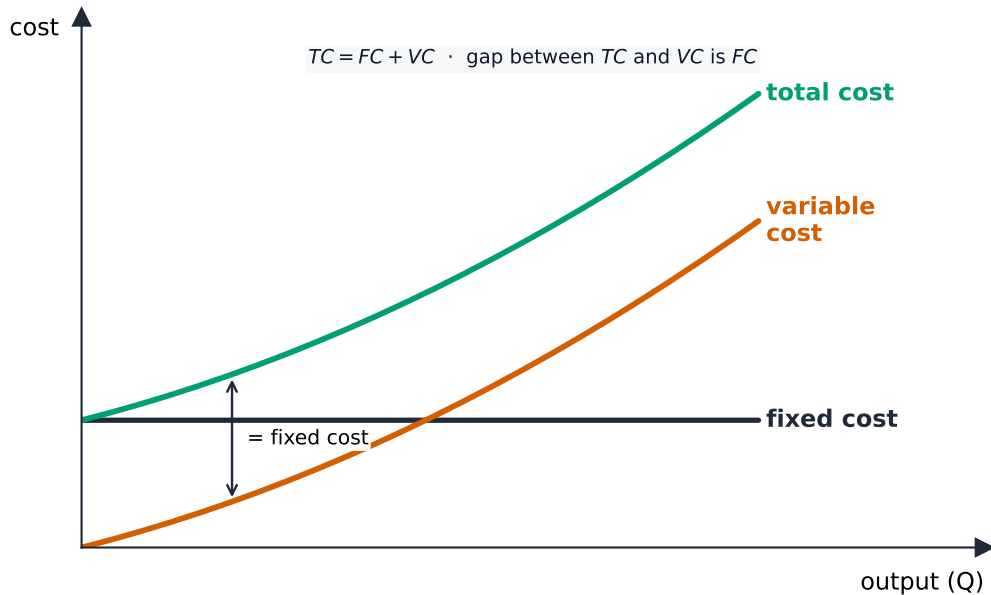
Firms' costs, revenue and objectives

Costs

A **cost** 成本 is money a firm spends to produce. Costs split into:

- **fixed costs** 固定成本 — costs that do *not* change with output, such as rent and insurance. You pay them even if you make nothing.
- **variable costs** 可变成本 — costs that *change* with output, such as materials and power. More output means more variable cost.

- **total cost** 总成本 — fixed cost plus variable cost.
- **average cost** 平均成本 — the cost of *each* unit: total cost divided by the number of units made.



Fixed cost stays the same as output rises; variable cost rises; total cost is fixed plus variable, so the gap between total and variable cost is the fixed cost.

Revenue

Revenue 收益 is the money a firm gets from selling its goods.

- **total revenue** 总收益 — the price multiplied by the quantity sold.
- **average revenue** 平均收益 — total revenue divided by the quantity sold (this is the same as the price).

Profit and other objectives

Profit 利润 is what is left after costs:

$$\text{profit} = \text{total revenue} - \text{total cost}$$

Worked example. A firm has fixed costs of £2,000 and variable costs of £3 per unit. It makes 500 units and sells them at £10 each. Find its total cost, total revenue, profit and average cost.

- variable cost = $3 \times 500 = \text{£}1,500$, so total cost = $2,000 + 1,500 = \text{£}3,500$.
- total revenue = $10 \times 500 = \text{£}5,000$.

- profit = 5,000 - 3,500 = £1,500.
- average cost = total cost ÷ units = 3,500 ÷ 500 = £7 per unit.

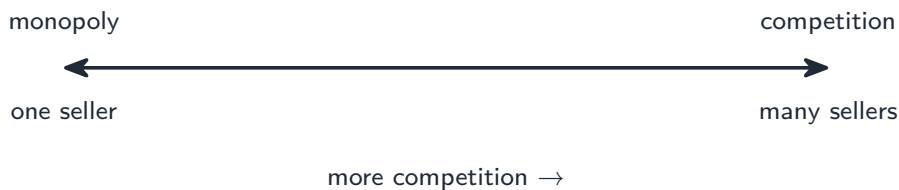
The firm makes a profit because the price (£10) is above the average cost (£7).

Most firms want as much profit as possible. But firms can have other **objectives** 目标:

- **survival** 生存 — a new firm first just wants to stay open.
- **growth** 增长 — getting bigger, to gain economies of scale and market power.
- social objectives — some firms aim to help people or protect the environment, not only to earn profit.

Types of markets

Markets differ by how many firms there are and how hard it is for new firms to join.



Markets range from monopoly (one seller) to perfect competition (many)

Competitive markets

A competitive market has many firms selling similar goods, and it is easy for new firms to enter. This is strong **competition** 竞争. In such a market:

- firms must keep prices low and quality high, or buyers go elsewhere.
- firms work hard to cut costs and make new products.

This is good for consumers: low prices, wide choice, and good quality.



In a competitive market many firms sell similar goods, so each must keep prices low and quality high to win customers

Monopoly

A **monopoly** 垄断 is a market with only *one* firm, or one firm that controls most of it. New firms find it hard to enter because of **barriers to entry** 进入壁垒 — for example, very high start-up costs, or the one firm controlling key supplies.

In a monopoly:

- the firm can charge high prices, because buyers have no other choice.
- there is little pressure to improve quality or cut costs.
- but a large monopoly may gain economies of scale, and may use its profit to pay for research.

Competition versus monopoly

	Consumers	Firms
competition	lower prices, more choice, better quality	lower profit; must work hard to survive
monopoly	higher prices, less choice	higher profit and an easy life, but may grow lazy

Exam tips

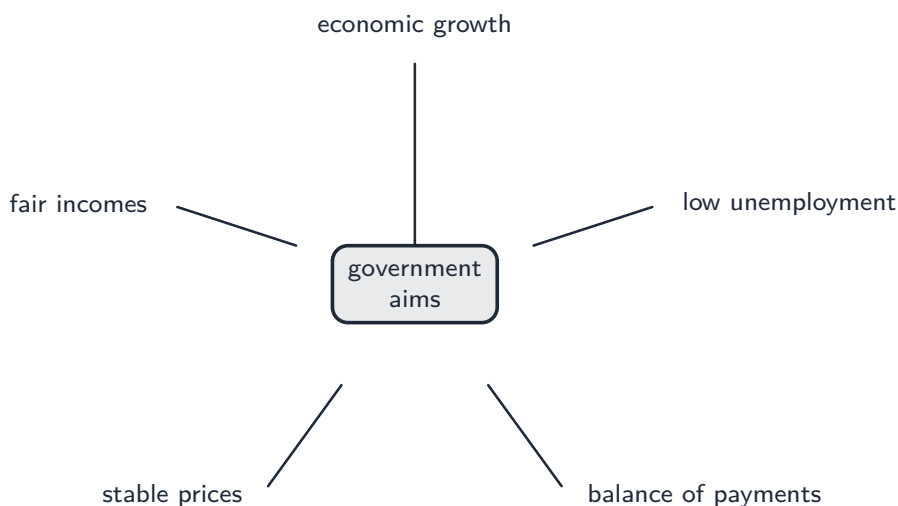
- Money’s four functions: a **medium of exchange**, a **store of value**, a **unit of account**, and a **means of deferred payment**.
- Key formulas: $\text{profit} = \text{total revenue} - \text{total cost}$; $\text{total revenue} = \text{price} \times \text{quantity}$; $\text{average cost} = \text{total cost} \div \text{number of units}$.
- **Fixed costs** do not change with output (rent, insurance); **variable costs** do (materials, power). $\text{Total cost} = \text{fixed} + \text{variable}$.
- **Economies of scale** make average cost *fall* as a firm grows; growing *too* big brings diseconomies of scale (average cost rises).
- Know the merger types: **horizontal** (same stage of the same industry), **vertical** (different stages of one industry), **conglomerate** (different industries).

Government and the macroeconomy

IGCSE Economics

Government macroeconomic aims

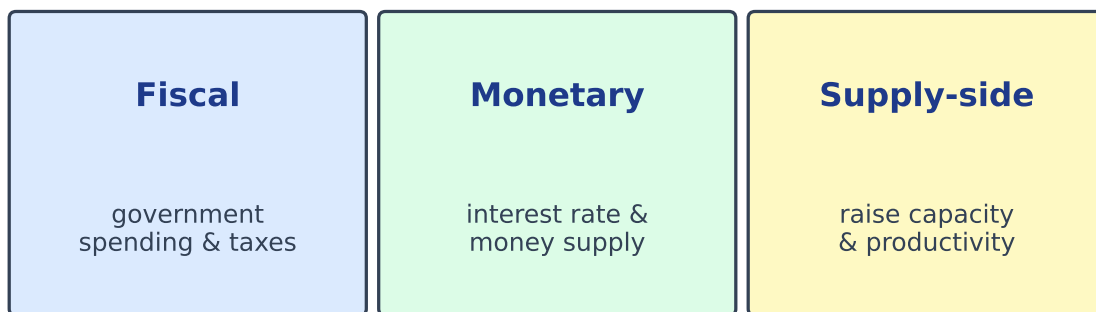
Governments try to manage the whole economy — the **macroeconomy** 宏观经济. They have five main aims:



*Five main aims: growth, low unemployment, stable prices, balance of payments
stability, fair incomes*

1. **economic growth** 经济增长 — the economy makes more goods and services each year.
2. **full employment** 充分就业 — almost everyone who wants a job has one, so **unemployment** 失业 is low.
3. **price stability** 价格稳定 — prices rise only slowly, so **inflation** 通货膨胀 is low.
4. **balance of payments** 国际收支 stability — the money flowing in and out of the country (from trade) is roughly even.
5. **redistribution of income** 收入再分配 — sharing income more fairly, so the gap between rich and poor is not too wide.

These aims can **conflict** 冲突 (work against each other). For example, fast growth can pull prices up, causing inflation. Cutting unemployment can do the same. So a government must balance its aims.



Exam: fiscal = G & T; monetary = interest rate / money; supply-side = capacity & productivity

The government's three sets of policy tools for managing the macroeconomy

Fiscal policy

Fiscal policy 财政政策 means the government changing two things to manage the economy:

- **government spending** 政府支出 — money the government spends, for example on schools, hospitals, and roads.
- **taxation** 税收 — money the government takes from people and firms.

The government **budget** 预算 sets spending against tax. There are three outcomes:

- a **budget deficit** 预算赤字 — spending is more than the tax raised, so the government must borrow.
- a **budget surplus** 预算盈余 — the tax raised is more than spending.
- a **balanced budget** — the two are equal.

Types of tax

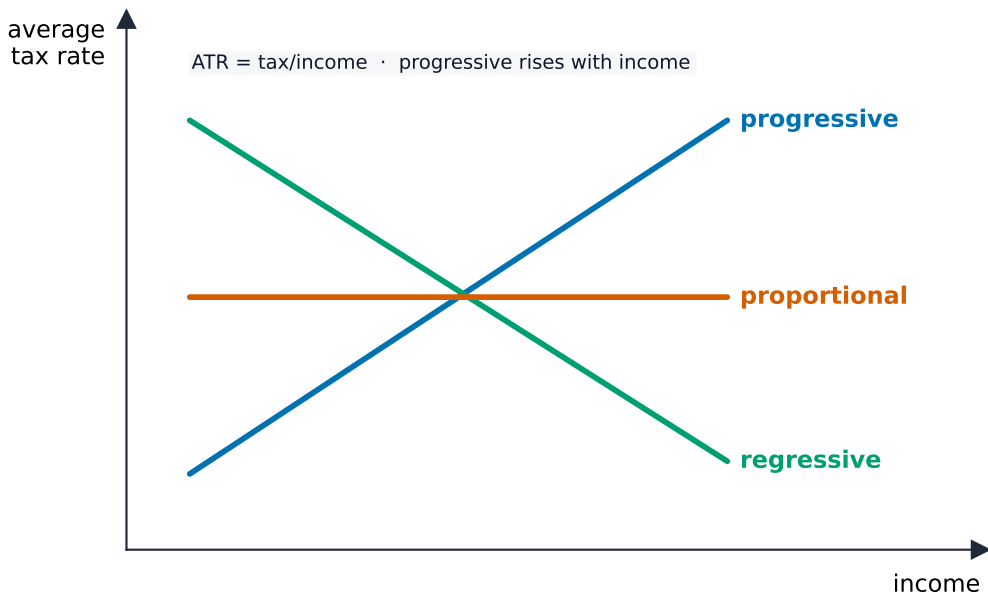
Taxes are grouped in two ways. By *what* is taxed:

- a **direct tax** 直接税 is paid straight to the government from **income** 收入 or **profit** 利润 (income tax, corporation tax).
- an **indirect tax** 间接税 is added to the price of goods and paid when you spend (a sales tax).

By *how the rate changes with income*:

- a **progressive tax** 累进税 takes a *bigger* % from higher incomes. This helps redistribute income.

- a **regressive tax** 累退税 takes a *smaller* % from higher incomes, so it hits the poor harder.
- a **proportional tax** 比例税 takes the *same* % from everyone.



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

What fiscal policy does

To boost the economy (raise growth and jobs), the government can spend more or cut taxes. This raises total **demand** 需求 — but if demand grows too fast, it can cause inflation.

To slow the economy (fight inflation), the government can spend less or raise taxes. This lowers demand, but can raise unemployment.

Monetary policy

Monetary policy 货币政策 is the **central bank** 中央银行 changing **interest rates** 利率 (and the **money supply** 货币供给) to manage the economy. The interest rate is the cost of borrowing and the reward for saving.

- **Lower** interest rates: borrowing is cheaper, so people and firms spend and **invest** 投资 more. Demand rises, giving more growth and jobs — but maybe more inflation.

- **Higher** interest rates: borrowing is dearer, so spending falls. Demand falls, giving less inflation — but maybe more unemployment.



The central bank runs monetary policy: it sets the interest rate to manage demand, inflation and growth

Supply-side policy

Supply-side policy 供给侧政策 tries to raise the amount the economy *can* produce. It improves the quantity and quality of the **factors of production** 生产要素. Methods include:

- **education and training** — better skills raise **productivity** 生产率.
- **privatisation** 私有化 — selling state-owned firms to private owners, who may run them better.
- **deregulation** 放松管制 — removing rules that hold firms back.
- **incentives** 激励 — lower taxes on income and profit, so people work harder and firms invest more.

Supply-side policy can raise growth and jobs *and* lower inflation at the same time. Its weakness is that it works slowly.

Economic growth

Economic growth is a rise in **real GDP**.

GDP (gross domestic product 国内生产总值) is the total value of all goods and services a country produces in a year. **Real 实际** GDP is GDP after the effect of rising prices is removed, so it shows the *true* change in output.

Worked example. A country's real GDP was £500 billion last year and £515 billion this year. Find the rate of economic growth.

- $\text{economic growth} = (515 - 500) \div 500 \times 100 = 3\%$.

Because this uses *real* GDP (with the effect of rising prices taken out), the 3% is a true rise in output, not just higher prices. If prices had risen but output had not, real GDP — and so growth — would be zero.



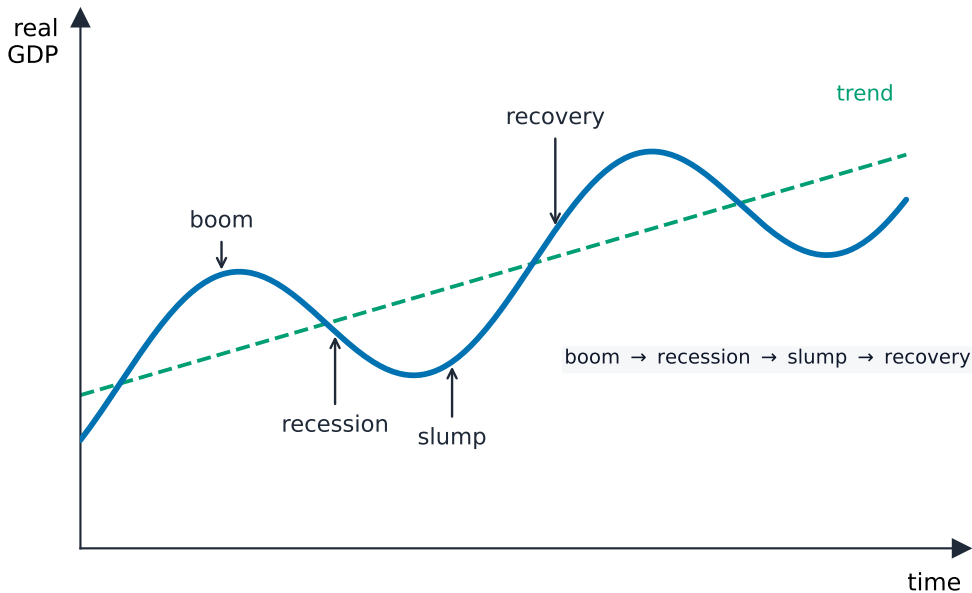
Investment in new buildings and capital, seen in Shanghai's Pudong skyline, drives economic growth

The business cycle

Real GDP does not rise smoothly. It moves through a **business cycle 经济周期** with four stages:

- **boom 繁荣** — fast growth; output and jobs are high, but prices rise quickly.
- **recession 衰退** — output falls and jobs are lost. (A recession is often defined as falling real GDP for six months.)
- **slump 萧条** — the bottom of the cycle; very low output and high unemployment.

- **recovery** 复苏 — output starts to rise again.



Real GDP moves through boom, recession, slump and recovery around its rising trend.

Causes and effects

Growth comes from more or better factors of production: investment in new machines, a bigger or more skilled workforce, and new technology.

Good effects: higher incomes, more jobs, better **living standards** 生活水平, and more tax for the government to spend.

Bad effects: prices may rise (inflation); the gap between rich and poor may grow; and there may be more pollution and use of scarce resources.

A recession brings the opposite: lower incomes, more unemployment, and business failures.

Employment and unemployment

Measuring unemployment

Unemployment is people who can work and want to work, but cannot find a job. There are two ways to measure it:

- the **claimant count** 失业救济申领人数 — it counts people who claim **unemployment benefit** 失业救济金. It misses those who want work but cannot claim.

- the **labour force survey** 劳动力调查 — a survey that counts people who are not working but are looking for work and are ready to start.

The **labour force** 劳动力 is everyone who is working plus everyone who is unemployed (and looking for work).

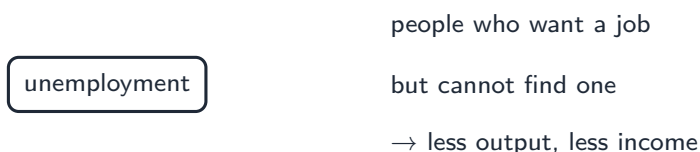
Worked example. A country has 24 million people in work and 2 million people who are unemployed and looking for work. Find the labour force and the unemployment rate.

- labour force = $24 + 2 = 26$ million.
- unemployment rate = $2 \div 26 \times 100 = 7.7\%$.

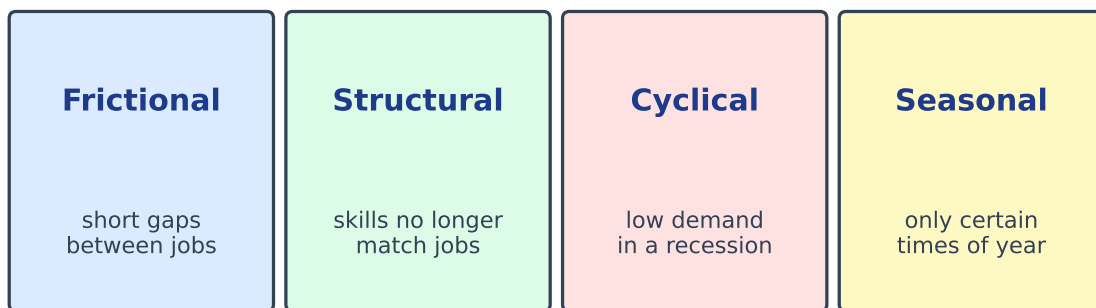
People who are not looking for work (for example retired people or full-time students) are counted in neither figure, so a fall in the rate is good news only if it means more people found jobs, not that they stopped looking.

Types of unemployment

- **frictional unemployment** 摩擦性失业 — short-term unemployment between jobs (a worker who just left one job and is looking for the next).
- **structural unemployment** 结构性失业 — a whole industry shrinks and workers' skills are no longer wanted (for example, coal miners after the mines close).
- **cyclical unemployment** 周期性失业 — caused by a recession, when total demand is low so firms need fewer workers. (It is also called demand-deficient unemployment.)



Unemployment means people who want a job cannot find one



Exam: name the type + cause — cyclical needs demand stimulus; structural needs retraining

The four types of unemployment: frictional (between jobs), structural (skills no longer match), cyclical (low demand in a recession) and seasonal

Effects of unemployment

- workers lose income and may lose their skills.
- the country loses the output those workers could have made.
- the government pays more in benefits and collects less in tax.
- crime and poor health may rise.

Sectors and the changing pattern of employment

The economy has three **sectors**:

- the **primary sector** 第一产业 extracts raw materials (farming, fishing, mining);
- the **secondary sector** 第二产业 makes things (manufacturing, construction);
- the **tertiary sector** 第三产业 provides services (banking, tourism, retail, transport).

As a country develops, jobs shift **primary** → **secondary** → **tertiary**. Early on most work is farming; industrialisation moves workers into factories; then **deindustrialisation** 去工业化 and rising incomes grow the service sector, so most jobs end up tertiary. Modern economies also see more **part-time and flexible** work.



A long queue of people — unemployment is people willing and able to work who cannot find jobs

Inflation

Inflation is a rise in the *average* level of prices over time. The opposite — falling prices — is **deflation** 通货紧缩.

Measuring inflation

Inflation is measured by the **Consumer Prices Index** 消费者价格指数 (CPI). We pick a “basket” of goods a typical family buys, give each good a **weight** 权重 (a bigger weight for things people spend more on), and track how the price of the whole basket changes each year.

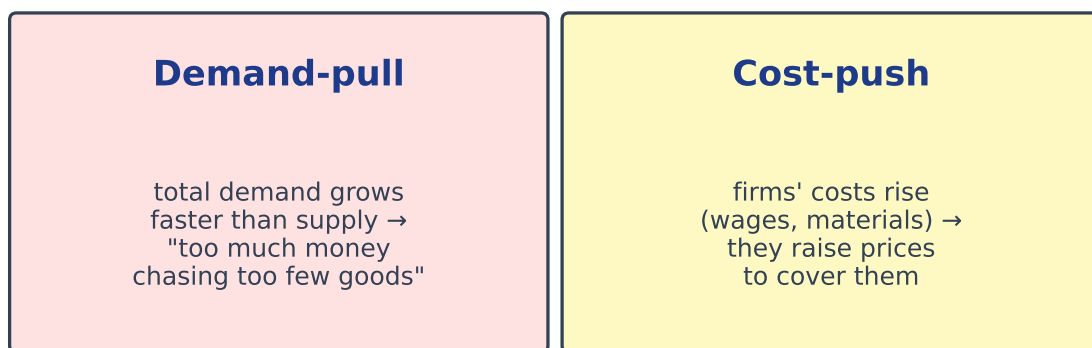
Worked example. A country’s Consumer Prices Index (CPI) was 100 last year and 104 this year. Find the rate of inflation.

- inflation rate = $(104 - 100) \div 100 \times 100 = 4\%$.

Prices rose by 4% on average. If next year the index reaches 107, the inflation rate is $(107 - 104) \div 104 \times 100 = 2.9\%$. Prices are still rising, but more slowly — a smaller inflation rate is *not* the same as deflation, because for deflation the index itself would have to fall.

Causes

- demand-pull** 需求拉动 inflation — total demand grows faster than the economy can supply, so prices are pulled up.
- cost-push** 成本推动 inflation — firms’ costs rise (wages, materials), so they raise prices to cover them.



Exam: demand-pull = AD excess; cost-push = rising costs (wages, oil, imported inputs)

The two causes of inflation: demand-pull (excess demand) and cost-push (rising costs)

Effects of inflation

- money loses **purchasing power** 购买力 — each unit of money buys less.
- savings become worth less.
- firms must keep changing prices on labels and lists, which costs time and money.
- the country's goods become dearer than other countries' goods, which hurts exports.

Deflation

Falling prices sound good, but deflation can be harmful. People put off buying, hoping for lower prices later. So demand falls, firms cut output, and unemployment rises.

Exam tips

- Learn the government's five aims (growth, low unemployment, low inflation, balance of payments, fair incomes) — they can **conflict**, e.g. fast growth can pull up inflation.
- **Fiscal policy** = government spending and taxes; **monetary policy** = the central bank changing interest rates; **supply-side policy** = raising what the economy *can* produce.
- Key rates: unemployment rate = $\text{unemployed} \div \text{labour force} \times 100$; inflation rate = $\text{change in CPI} \div \text{old CPI} \times 100$; growth = $\text{change in real GDP} \div \text{old real GDP} \times 100$.
- **Deflation** (falling prices) can be harmful, because people delay buying, so demand and jobs fall.

Economic development

IGCSE Economics

Living standards

“Living standards” means how well people live — their income, health, education, and quality of life.

Indicators of living standards

An **indicator** 指标 is a number we use to measure something. Two indicators of **living standards** 生活水平 are common.

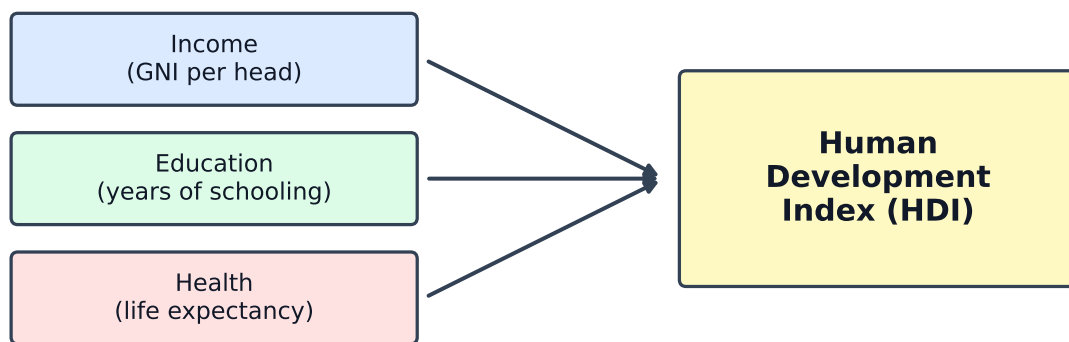
Real GDP per head is the main one. **GDP** (gross domestic product 国内生产总值) is the total value of goods and services a country makes in a year. **Real** 实际 means after rising prices are taken out. **Per head** 人均 means divided by the number of people. So real GDP per head shows the average output — and roughly the average **income** 收入 — of each person. Higher real GDP per head usually means higher living standards.

Worked example. A country produces real GDP of £600 billion and has a population of 50 million people. Find its real GDP per head.

- real GDP per head = 600 billion ÷ 50 million = £12,000 per person.

This is only an *average*. It does not show how the income is shared: the same £12,000 average could hide most people being much poorer while a few are very rich. That is why HDI, below, adds health and education.

The **Human Development Index** 人类发展指数 (HDI) is a wider measure. It combines three things: income per head, education (years of schooling), and health (measured by **life expectancy** 预期寿命 — how long people are expected to live). HDI gives a fuller picture than GDP alone.



Exam: $\text{HDI} = \text{income} + \text{education} + \text{health}$ — broader than GDP alone for living standards

The HDI combines income (GNI per head), education (years of schooling) and health (life expectancy) into one number between 0 and 1

Limits of the comparison

Comparing living standards is not simple:

- GDP per head is an *average*. It hides the **income distribution** 收入分配 — a country can have a high average but a few rich people and many poor people.
- it leaves out unpaid work, and work in the hidden economy.
- it does not measure pollution, free time, or safety.
- prices and money differ between countries, so the same income buys different amounts.

This is why HDI, which adds health and education, is often a better guide.

Poverty

Poverty 贫困 is when people cannot afford a basic standard of living. There are two types:

- **absolute poverty** 绝对贫困 — people cannot afford even the basics: enough food, clean water, shelter, and clothing.
- **relative poverty** 相对贫困 — people are poor *compared with others* in the same country. They can afford the basics but much less than most people around them.

Absolute poverty

cannot afford basic needs:
food, clean water,
shelter and clothing

Relative poverty

poor compared with others
in the same country —
can afford basics,
but much less than most

Exam: absolute = cannot meet basic needs; relative = far below the country's typical living standard

Two types of poverty: absolute (cannot afford basic needs) and relative (poor compared with others in the same country)



Absolute poverty: in informal settlements many people lack basic needs such as safe housing, clean water and sanitation

Causes of poverty

- low income, low **wages** 工资, or no job (unemployment).
- poor education and poor health, which make it hard to get good work.
- old age, or having many children to support.

Policies to reduce poverty

- **economic growth** 经济增长 — a growing economy creates jobs and income.
- **redistribute** 再分配 income — use progressive taxes on the rich to pay for help for the poor.
- a **minimum wage** 最低工资 — a legal lowest wage, so low-paid workers earn more.
- state **benefits** 福利 — money paid by the government to the poor, old, or unemployed.
- better state education and healthcare, so the poor can improve their lives.

Population

A country's **population** 人口 is the number of people living in it. Three things change its size.

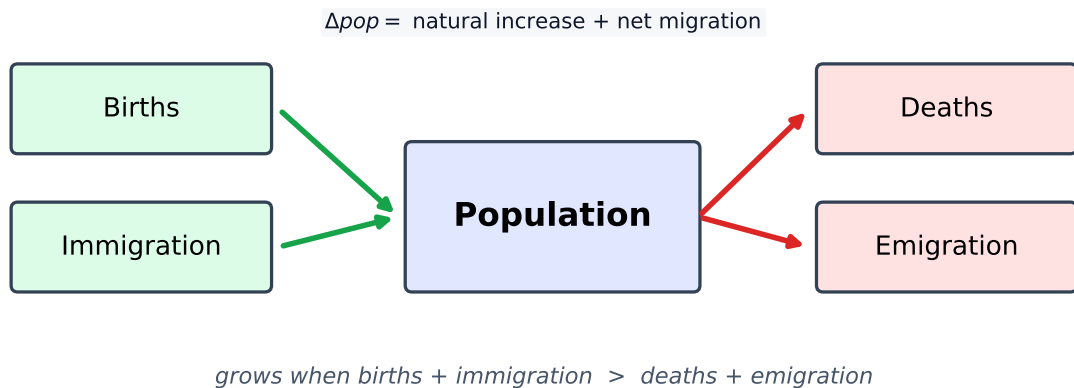
- the **birth rate** 出生率 — the number of births each year for every 1000 people.
- the **death rate** 死亡率 — the number of deaths each year for every 1000 people.
- **migration** 移民 — people moving between countries. **immigration** 迁入 is people moving *in*; **emigration** 迁出 is people moving *out*. **Net migration** 净移民 is immigration minus emigration.

The population grows when births plus immigration are more than deaths plus emigration.

Worked example. In one year a country has 800,000 births, 500,000 deaths, 300,000 immigrants and 100,000 emigrants. Find the net migration and the total change in population.

- net migration = immigration - emigration = 300,000 - 100,000 = 200,000 (a net gain).
- natural change = births - deaths = 800,000 - 500,000 = 300,000.
- total change = natural change + net migration = 300,000 + 200,000 = 500,000.

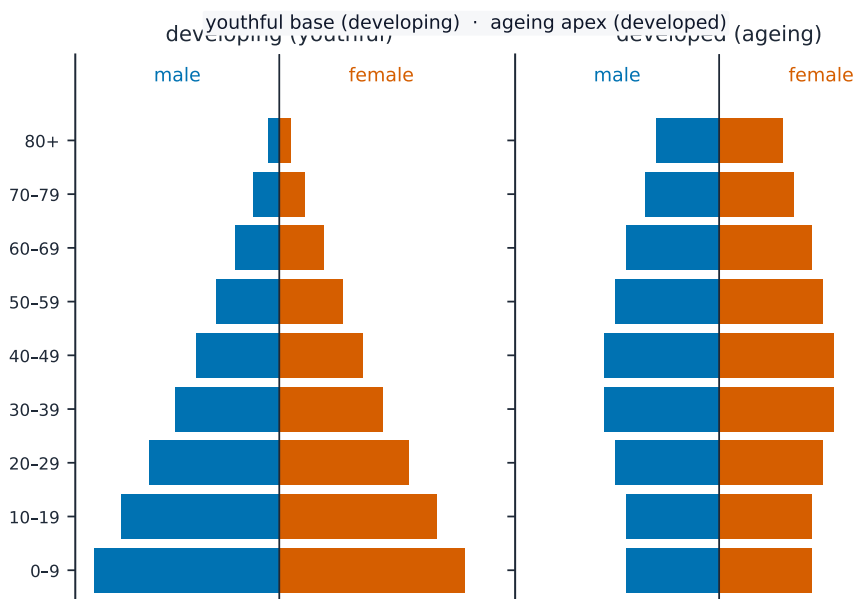
So the population grew by 500,000 people that year.



A country's population grows when births plus immigration are greater than deaths plus emigration

Population structure

The **population structure** 人口结构 is how the population is split by age and sex. We often draw it as a **population pyramid** 人口金字塔 — a chart with age groups stacked up, males on one side and females on the other.

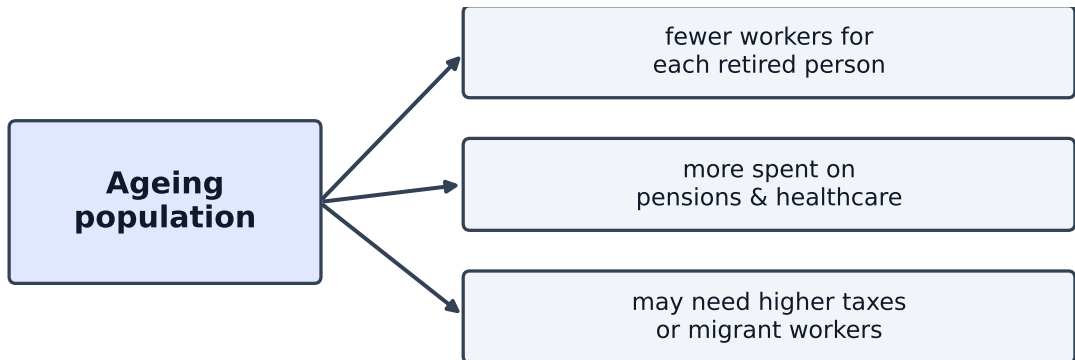


A developing country has a wide-based, youthful pyramid; a developed country is more column-shaped with a wider top (an ageing population).

An ageing population

In many richer countries the **ageing population** 人口老龄化 is a big change: people live longer and have fewer children, so the share of old people rises. Effects:

- fewer workers compared with the number of retired people, so each worker must support more people.
- the government spends more on pensions and healthcare.
- it may need higher taxes, or workers from other countries, to fill the gap.



Exam: ageing raises dependency ratio — pressure on pensions, healthcare, and tax base

The main effects of an ageing population

Differences in economic development between countries

Economic development 经济发展 means a rise in people's well-being, not just more output. We often split the world into **developed countries** 发达国家 (rich, like Japan or Germany) and **developing countries** 发展中国家 (poorer, with lower incomes).



A developed economy: high incomes support a modern city of offices, finance and services

Why countries differ

- **income** — developed countries have much higher income per head.
- **productivity** 生产率 — developed countries use more capital and skill, so each worker produces more. In many developing countries, farmers do **subsistence farming** 自给农业 (growing food just for their own family), which produces little to sell.
- **population** — developing countries often have higher birth rates and younger populations.
- **resources, education, and health** — better schools, hospitals, and use of resources all raise development.
- **debt** 债务 — many developing countries owe large amounts of money, and paying it back leaves less for schools and hospitals.
- **trade** 贸易 — developed countries trade more, and often sell higher-value goods.

How developed and developing countries are linked

The two groups depend on each other. Developing countries sell raw materials and cheap goods to developed countries, and buy machines and skills from them. Trade, aid, and investment from richer countries can help poorer countries develop — but developing countries can also become too dependent on them.

Exam tips

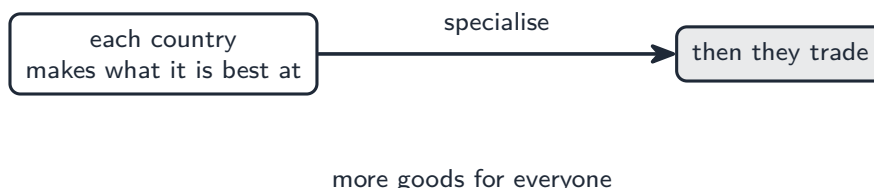
- **Real GDP per head** = $\text{GDP} \div \text{population}$, but it is an *average* that hides how income is shared. **HDI** adds health and education for a fuller picture.
- A population grows when births + immigration is greater than deaths + emigration. **Net migration** = immigration – emigration.
- An **ageing population** means fewer workers for each retired person, so more government spending on pensions and healthcare.
- Distinguish **absolute poverty** (cannot afford basic needs like food and shelter) from **relative poverty** (poor compared with others in the same country).

International trade and globalisation

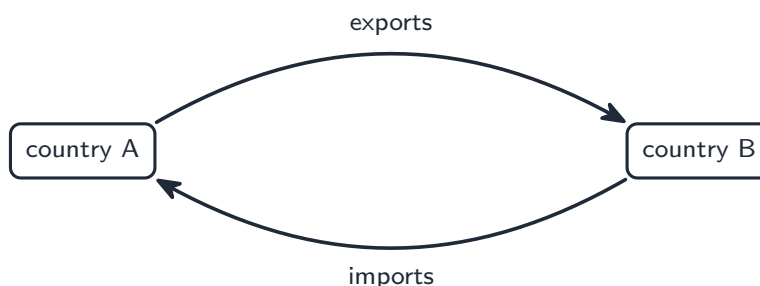
IGCSE Economics

Specialisation and free trade

Countries **trade** 贸易 with each other: they sell some goods and buy others. Just as one worker can focus on one task, a whole country can focus on making the goods it is best at. This is **specialisation** 专业化 at a national level.



Each country makes what it is best at, then trades



Exports are sold abroad; imports are bought from abroad



A container port: countries specialise and trade huge volumes of goods by sea

When a country specialises, it sells the goods it makes well (**exports** 出口) and buys the goods other countries make well (**imports** 进口).

Free trade

Free trade 自由贸易 means trade between countries with no barriers — no taxes or limits on imports. Its benefits:

- countries can buy some goods more cheaply from abroad than by making them at home.
- consumers get a wider choice of goods.
- firms can sell to bigger markets, so they gain economies of scale.
- more competition makes **domestic** 国内的 firms (firms in your own country) work harder and improve.

All of this can raise **living standards** 生活水平: lower prices and more goods for everyone.

Free trade also has disadvantages:

- domestic firms may not be able to **compete** 竞争 with cheaper foreign goods, so they close. This causes job losses.
- a country can become too **dependent** 依赖 on other countries for important goods.
- new, small industries may never grow if they face strong foreign rivals from the start.

Globalisation and trade protection

Globalisation 全球化 is the way the world's economies are becoming more and more joined together — through trade, travel, the internet, and firms working across borders.

Multinational companies

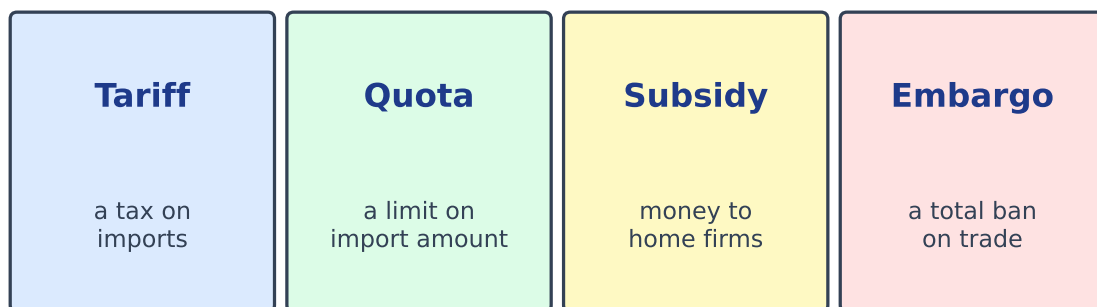
A **multinational company** 跨国公司 (MNC) is a firm that produces in more than one country — for example, a car maker with factories in several countries. The country an MNC sets up in is the **host country** 东道国.

- **Benefits** to the host country: new jobs, investment, new skills and technology, and more tax.
- **Drawbacks**: profits may flow back to the MNC's home country; local firms may be pushed out; and some MNCs pay low wages or pollute (for example, by sending waste to poorer countries).

Trade protection

Trade protection 贸易保护 is a government putting up barriers to limit imports and protect its own firms. The main methods:

- a **tariff** 关税 — a tax on imports, which makes them dearer.
- a **quota** 配额 — a limit on the *amount* of a good that can be imported.
- a **subsidy** 补贴 — money paid to domestic firms so they can sell more cheaply than foreign rivals.
- an **embargo** 禁运 — a total ban on trade in a good, or with a country.



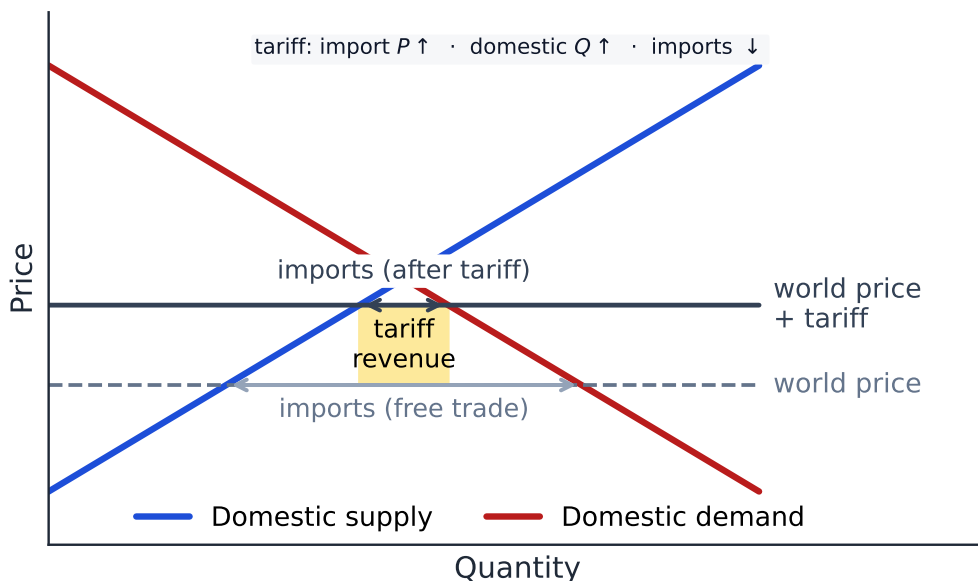
Exam: tariff = tax; quota = quantity limit; subsidy = home support; embargo = ban

The four main methods of trade protection

Reasons for protection: to protect jobs; to protect an **infant industry** 幼稚产业 (a

new industry too small to compete yet); to stop **dumping** 倾销 (foreign firms selling below cost to destroy local rivals); and to raise government revenue from tariffs.

But protection has costs. Prices rise and choice falls for consumers; protected firms stay weak and lazy; and other countries may hit back with their own barriers — a trade war.



A tariff raises the price from the world price to “world price + tariff”: domestic supply rises, demand falls, imports shrink, and the shaded box is the government’s tariff revenue

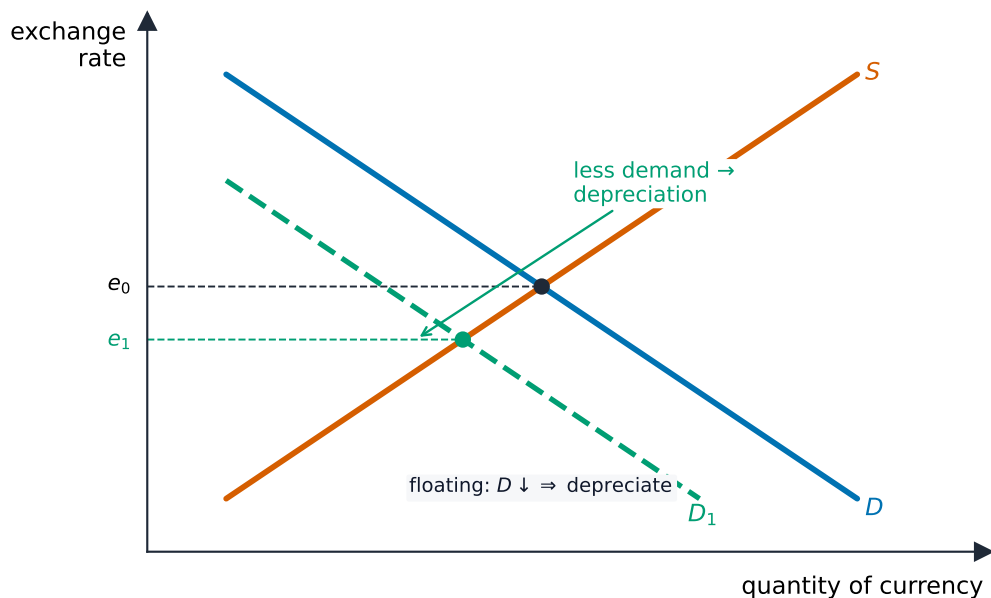
Foreign exchange rates

The **exchange rate** 汇率 is the price of one **currency** 货币 in terms of another — for example, £1 = 1.30 US dollars.

How the rate is set

In a **floating exchange rate** 浮动汇率 system, the rate is set by the **demand** 需求 for and **supply** 供给 of the currency, just like any market.

- if more people want a currency — to buy that country’s exports, or to invest there — demand for it rises, so its price (the exchange rate) rises.
- for example, if a country’s interest rates rise, foreigners want to save money there, so demand for its currency rises and the rate goes up.



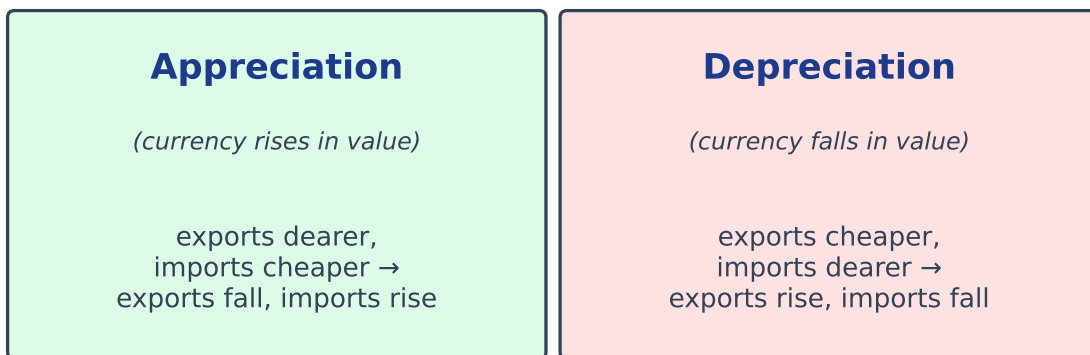
The exchange rate is set where demand for the currency meets supply. If demand falls ($D \rightarrow D_1$), the rate falls — a depreciation.

Appreciation and depreciation

- **appreciation** 升值 — the currency rises in value (it buys more foreign money).
- **depreciation** 贬值 — the currency falls in value.

A change in the rate changes the price of exports and imports:

- if a currency appreciates (rises), its exports become dearer for foreigners and its imports become cheaper. So exports fall and imports rise.
- if a currency depreciates (falls), its exports become cheaper for foreigners and its imports become dearer. So exports rise and imports fall.



Exam: appreciation hurts export competitiveness; depreciation can boost net exports (SPICED)

How a change in the exchange rate affects exports and imports

Worked example. The exchange rate is £1 = 1.30 US dollars. (a) A UK firm sells a machine for £2,000 — what is its price to a US buyer? (b) A US laptop costs 650 dollars — what does it cost a UK buyer?

- (a) price in dollars = $2,000 \times 1.30 = 2,600$ dollars.
- (b) price in pounds = $650 \div 1.30 = £500$.

To change pounds into dollars you *multiply* by the rate; to change dollars into pounds you *divide*. Now suppose the pound appreciates to £1 = 1.50 dollars. The same £2,000 machine then costs a US buyer $2,000 \times 1.50 = 3,000$ dollars — dearer than before, which is why a stronger pound makes a country's exports harder to sell abroad.

The current account of the balance of payments

The **balance of payments** 国际收支 is a record of all the money flowing into and out of a country. Its main part is the **current account** 经常账户, which has four sections:

exports (money in) > imports (money out)

= a surplus

imports > exports = a deficit

Exports above imports is a surplus; below is a deficit

- **trade in goods** 货物贸易 — exports and imports of physical goods (cars, food, oil).
- **trade in services** 服务贸易 — exports and imports of services (tourism, banking, shipping).
- **primary income** 初次收入 — wages, interest, and profit earned from abroad.
- **secondary income** 二次收入 — money sent with nothing given in return, such as aid and gifts.



Cargo ships carry goods between countries — the trade-in-goods part of the current account

Deficit and surplus

- a **current account deficit** 逆差 — more money flows out than in (the country buys more from abroad than it sells).
- a **current account surplus** 顺差 — more money flows in than out.

Correcting a deficit

A country with a large deficit must borrow money or sell assets to pay for it. To correct a deficit, a government can:

- cut total demand, so people buy fewer imports.
- let the currency depreciate, to make exports cheaper and imports dearer.
- use trade protection (tariffs and quotas) to cut imports.
- use supply-side policy to improve the **competitiveness** 竞争力 of its firms, so exports rise.

Exam tips

- To convert currency: pounds → dollars, *multiply* by the rate; dollars → pounds, *divide* by the rate.
- When a currency **appreciates**, its exports become dearer and its imports cheaper (so exports fall, imports rise); a **depreciation** does the opposite.
- **Trade protection** (tariffs, quotas, subsidies, embargoes) can protect jobs and infant industries, but it raises prices, cuts choice, and can start a trade war.
- A **current account deficit** means more money flows out than in. It can be reduced by cutting demand, letting the currency depreciate, or improving competitiveness.