Public Goods & Information Failure

AQA A-Level Economics

Public Goods · Free Riders · Merit & Demerit Goods · Asymmetric Information · Nudges

Private Goods vs Public Goods

Goods are classified by two characteristics — whether they are rival and whether they are excludable:

Private Goods

Rival: one person's consumption reduces the amount available for others — if I eat an apple, you can't.

Excludable: people who don't pay can be prevented from consuming the good.

Rejectable: consumers can choose not to consume it.

The price mechanism works well — firms can charge for the good and make a profit, so the market provides it.

e.g. Food, clothing, cars, mobile phones and haircuts.

Public Goods

Non-rival: one person's consumption does not reduce the amount available to others.

Non-excludable: once provided, it is impossible (or very costly) to stop non-payers from benefiting.

Non-rejectable: people cannot choose not to consume it — e.g. national defence.

The marginal cost of an extra user is zero, so charging a price would be allocatively inefficient.

e.g. National defence, street lighting, flood defences, lighthouses and public fireworks displays.

The Free-Rider Problem

Definition:
A free rider is someone who benefits from a good without paying for it. Because public goods are non-excludable, consumers have an incentive to free ride.

Why the market fails:
If everyone waits for others to pay, no one reveals their true demand. Firms cannot charge enough to cover costs, so they will not provide the good at all — even though society values it.

A missing market:
This is complete market failure — the good is not provided by the free market at all.

The solution:
The government provides public goods directly, financed through taxation — so everyone pays through compulsory taxes.

Eval: it is hard for the government to know how much of the good people really want.

Government Failure Risk

Without price signals, the state may over- or under-provide public goods, or provide them inefficiently.

Private Provision

Some public goods are provided privately with sponsorship or advertising — e.g. free-to-air TV.

Real-World Example

UK defence is funded entirely through taxation. In 2025 the government committed to raising spending from ~2.3% to 2.5% of GDP by 2027.

Quasi-Public Goods & Common Resources

In practice, many goods have only some public good characteristics — and technology can change them:

Quasi-Public Goods

Goods that are partly non-rival and non-excludable. e.g. Roads are non-excludable and non-rival until they become congested — then one extra car slows everyone else down.

Common Resources

Non-excludable but rival — e.g. fish stocks, grazing land and clean air. Everyone can use them, but overuse depletes them: the tragedy of the commons.

Club Goods

Excludable but non-rival (up to capacity) — e.g. streaming services, gyms and private parks. Users can be charged, so the market can provide them.

Technology Changes Goods

New technology can make public goods excludable — e.g. TV was once a public good, but encryption allows subscription services. Road pricing and ANPR cameras make roads excludable.

Key point: public goods are defined by their characteristics — not by who provides them. Many goods provided by the state (e.g. the NHS) are not public goods.

Information Failure

Definition:

When consumers or producers lack the information needed to make welfare-maximising decisions.

Markets assume perfect information — in reality, information is often missing, costly or unequal

Types of information failure:

Imperfect Information

Consumers or producers do not have full, accurate information about prices, quality or the future — so they misjudge costs and benefits.

e.g. Consumers may not know which energy tariff is cheapest, or how much they will need in a pension.

Asymmetric Information

One party to a transaction has more or better information than the other — and can use it to their advantage.

e.g. A second-hand car seller knows far more about the car's faults than the buyer.

Misjudging Long-Term Effects

People underestimate the long-term benefits of some goods (merit goods) and the long-term costs of others (demerit goods).

e.g. Young people often underestimate the benefit of saving for retirement, or the harm from smoking.

Asymmetric Information in Practice

Where one side knows more than the other, markets can produce inefficient or unfair outcomes:

The Market for 'Lemons' (Akerlof)

Buyers can't tell good used cars from bad, so they pay an average price — good cars leave the market.

e.g. Warranties and vehicle history checks help reduce the problem.

Adverse Selection

High-risk people are more likely to buy insurance, but insurers can't identify them — so premiums rise.

e.g. Health insurers use medical questionnaires to screen customers.

Moral Hazard

Once insured, people or firms take more risks, as they don't bear the full cost of their actions.

e.g. Banks took excessive risks before 2008, expecting a government bailout.

Principal–Agent Problem

Agents (e.g. managers, financial advisers) have more information than principals and may act in their own interest.

e.g. Commission-based advisers selling unsuitable products.

Healthcare

Patients rely on doctors' knowledge — they cannot judge the treatment they need.

e.g. A key argument for state-provided healthcare through the NHS.

Financial Mis-Selling

Firms with more information sell products that consumers do not need or understand.

e.g. PPI mis-selling — UK banks paid out around £38bn in compensation.

Merit Goods

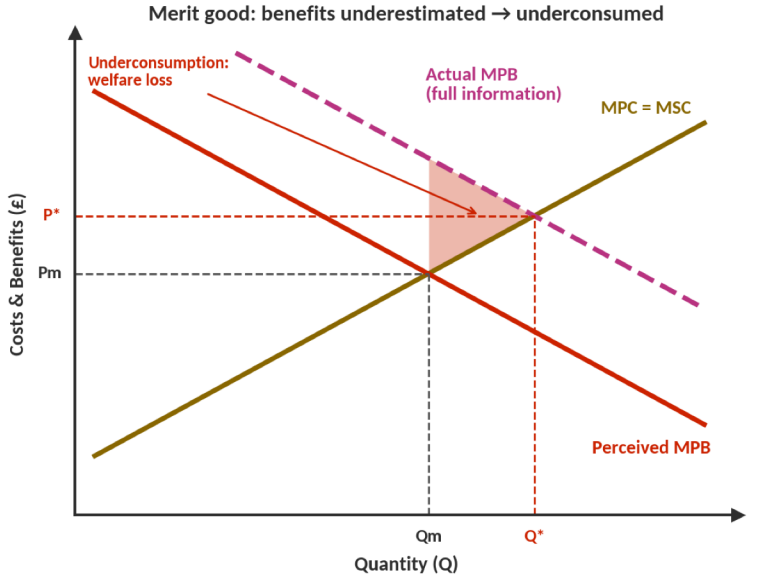
Definition:
A merit good is one that is underconsumed in a free market, because consumers underestimate its private benefits — an information failure. Many also generate positive externalities.

Examples:
Education, healthcare, vaccinations, pensions, museums, exercise and sports facilities.

Analysis:
Consumers base decisions on perceived MPB, which is below the actual MPB with full information. The market consumes at Qm, below the optimum Q*.

Welfare loss:
The shaded area — the benefit lost because too little of the good is consumed.

Whether a good is 'merit' is partly a value judgement — the government decides what is good for people.



Real-World Example

Pensions: auto-enrolment (from 2012) made workplace saving the default. Participation among eligible UK employees rose from around 55% to about 88%.

Demerit Goods

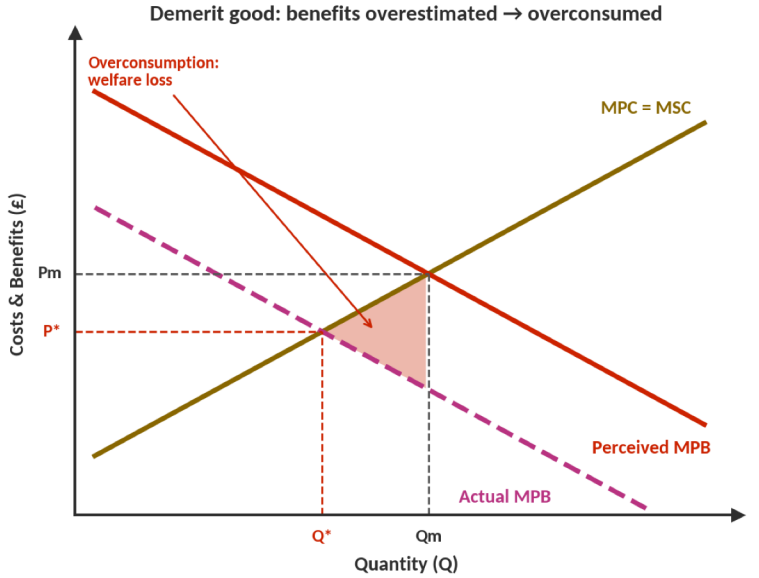
Definition:
A demerit good is one that is overconsumed in a free market, because consumers underestimate its private costs (or overestimate its benefits). Many also create negative externalities.

Examples:
Tobacco, alcohol, vapes, sugary drinks, gambling and recreational drugs.

Analysis:
Consumers base decisions on perceived MPB, which is above the actual MPB with full information — e.g. ignoring long-term health risks. The market consumes at Qm, above the optimum Q*.

Why information fails:
Addiction, short-termism (people value the present more than the future) and misleading advertising.

Policies: taxes, minimum prices, advertising bans, age limits and information campaigns.



Real-World Example

UK adult smoking fell from about 20% in 2011 to around 12% by 2023, after higher taxes, advertising bans and plain packaging — but youth vaping has risen.

Policies for Merit & Demerit Goods

Government can correct information failure directly, or change prices and quantities:

Information Provision

Campaigns, labelling and warnings help people judge the true costs and benefits.

Eval: cheap and tackles the cause — but people may ignore it.

Free or Subsidised Provision

The state provides merit goods free at the point of use — e.g. schools, NHS, vaccines.

Eval: raises consumption — but high opportunity cost and possible inefficiency.

Regulation & Compulsion

Laws requiring consumption (school to 18) or banning it (age limits on alcohol and tobacco).

Eval: effective if enforced — but reduces freedom of choice.

Indirect Taxes

Taxes on demerit goods raise their price and reduce consumption — e.g. tobacco duty.

Eval: demand is often inelastic, so consumption falls little; regressive.

Minimum Pricing

A legal minimum price per unit — e.g. alcohol minimum unit pricing in Scotland (65p).

Eval: targets cheap, strong drinks — but profits go to firms, not the government.

Nudges

Changing how choices are presented, e.g. opt-out pensions or organ donation.

Eval: low cost and keeps choice — but effects can be small.

★ Bonus: Behavioural Economics & Nudges

Bounded rationality:
People are not fully rational — they have limited time, information and brainpower. They use rules of thumb (heuristics), which can lead to poor decisions.

Behavioural biases:
Present bias (valuing today over the future); inertia (sticking with the default); herd behaviour; framing (the way choices are presented affects decisions); anchoring.

Nudge theory (Thaler & Sunstein):
Choice architecture: designing how choices are presented so people make better decisions — without banning options or changing prices.

Evaluation:
Cheap, and preserves freedom of choice. ✗ Effects may be small or fade over time. ✗ Some see nudges as manipulative 'nanny state' policy.

Default Choices

Making the socially preferred option the default — e.g. pension auto-enrolment — uses inertia for good.

The UK Nudge Unit

The Behavioural Insights Team (2010) used nudges to raise tax payments, e.g. letters saying 'most people pay on time'.

Real-World Example

Organ donation: England moved to an opt-out system in 2020 — adults are assumed to consent unless they opt out. Using the default aims to raise the number of donors.

Summary: Key Terms & Relationships

Key Term	Meaning
Rival / non-rival	Rival: one person's consumption reduces what is left for others. Non-rival: it doesn't.
Excludable	Non-payers can be prevented from consuming the good.
Public good	Non-rival and non-excludable — e.g. defence, street lighting. Not provided by the market.
Free-rider problem	People benefit without paying, so firms can't make a profit — a missing market.
Quasi-public good	Has some public good characteristics — e.g. roads (rival when congested).
Common resource	Non-excludable but rival — overuse leads to the tragedy of the commons.
Information failure	When people lack the information needed to make welfare-maximising decisions.
Asymmetric information	One party in a transaction knows more than the other.
Adverse selection	High-risk customers are more likely to buy insurance, pushing up premiums.
Moral hazard	Taking more risk because someone else bears the cost.
Merit good	Underconsumed because private benefits are underestimated — e.g. education.
Demerit good	Overconsumed because private costs are underestimated — e.g. tobacco.
Nudge	Changing choice architecture to influence behaviour without restricting choice.