Market failure and equity

IB DP Economics HL syllabus 2.8-2.9 and 2.12 full package

From €10 to €100 a tonne

A market for pollution, and a price that finally bit.

- EU permits: below €10 for much of 2012–2017.
- Above €100 in February 2023.

Four ways markets fail

> Too much, too little, none, or unfair.

- Externalities and common pool resources.
- Public goods; inequity.

External costs and benefits

> Third parties pay or gain.

- Pollution: MSC above MPC.
- Vaccination: MSB above MPB.

Too much: an external cost

The market over-produces by 8.

- Market (100, 20); optimum (92, 24).
- Welfare loss $\frac{1}{2} \times 8 \times 6 = 24$.

Too little: an external benefit

> The market under-consumes by 8.

- MSB lies 6 above MPB.
- Optimum (108, 22); loss 24 again.

Four policy fixes

Match the tool to the diagnosis.

- Tax = external cost; subsidy = external benefit.
- Regulation caps; permits fix the total.

Worked: a tax of 3

Consumers pay 2 of the 3.

- Price $20 \to 22$; quantity $100 \to 96$.
- Revenue $3 \times 96 = 288$.

The tragedy of the commons

Rival but non-excludable: over-used.

- Fisheries, groundwater, the atmosphere.
- Fix: property rights or quotas.

What makes a public good

> Non-rival and non-excludable.

- Street lights, defence, flood control.
- Common pool: rival. **Public good**: not.

The free-rider problem

> No one pays, so no firm provides.

- Benefit without paying.
- The state provides from taxes.

Markets answer "for whom?" by money

> Efficient is not the same as fair.

- Price rations by ability to pay.
- Equity is the other half of the pair.

The Lorenz curve and Gini

Gini 0.40 from five quintile shares.

- Shares 5, 10, 15, 20, 50%.
- Area under curve 0.30: Gini $= 1 - 2 \times 0.30$.

Poverty and redistribution

> Every fix trades equity against incentives.

- Absolute vs relative **poverty**.
- Progressive taxes, transfers, education and health.

The EU carbon market

> A cap, permits, and a price.

- Cap on CO_2 from power, industry, airlines.
- Import charge from 2026; China's market since 2021.

Firm K: cut or buy?

Cut, because 60 is below 90.

- Needs 0.2 million more tonnes of permits.
- Cut: €12 million. Buy: €18 million.

Permits or a carbon tax?

> Permits fix the quantity; a tax fixes the price.

- Permit price was unstable: below €10 for years.
- Leakage, revenue, monitoring for both.

The judgement

> Design matters as much as the tool.

- Fixed target: a tight, falling cap.
- Price stability: a tax, or a cap with a floor.

Check yourself

Can you do each of these?

- **Externality** diagrams with both optima.
- Public goods, commons, Lorenz and Gini.