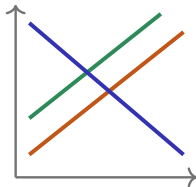


Market Failure & Government

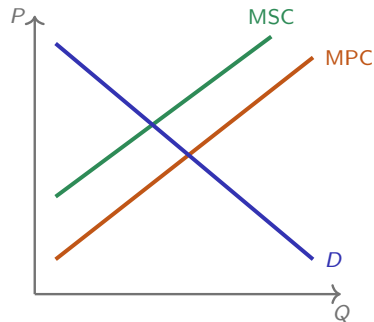
AP Microeconomics ■ Unit 6

AP Microeconomics



What we will cover

- 1 Efficiency & market failure
- 2 Externalities
- 3 Public & private goods
- 4 Regulating market power
- 5 Inequality





Efficient & inefficient outcomes

Society does best where the last unit's benefit to everyone meets its cost to everyone:

MSB

=

MSC

At $MSB = MSC$ total surplus is greatest – **socially efficient** . Any other quantity is a **market failure** with a **deadweight loss** .

Socially Efficient and Inefficient Market Outcomes

productive efficiency
*making goods at the
lowest possible cost*

allocative efficiency
*making the goods
people most want*

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

What makes a market outcome socially efficient

socially efficientthe outcome that **maximises total surplus****the condition****marginal social benefit** equals **marginal social cost****consumer surplus**

what buyers were willing to pay minus what they paid

producer surplus

what sellers received minus what they were willing to accept

total surplus

the two added – the area between the demand and supply curves up to the quantity traded

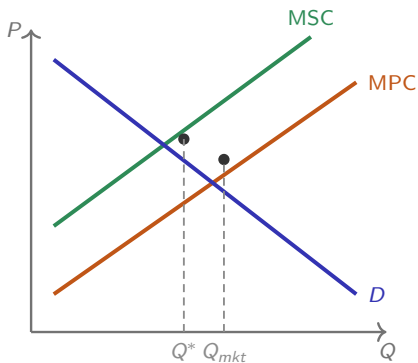
deadweight loss

the surplus destroyed when quantity is not the efficient one

A free competitive market reaches $MSB = MSC$ *only* when private and social values coincide. Every case in this unit is a way that fails.



Externalities



An **externality** spills onto a **third party** .

- **negative** (pollution): $MSC > MPC$, market **overproduces**
- **positive** (vaccines): $MSB > MPB$, market **underproduces**

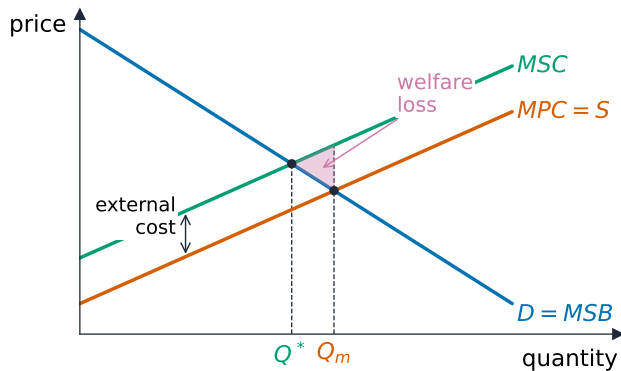
The gap creates a deadweight loss from Q^* .

Cigarettes: externalities mean private market – one



Cigarettes: externalities mean private markets may not reach socially efficient outcomes

Cigarettes: externalities mean private market – two



A negative externality: the market over-produces, causing a welfare loss

Correcting externalities

- **Pigouvian tax** = external cost → cut output
- **Subsidy** = external benefit → raise output
- **Tradable permits** – cap & trade pollution

Worked example

Steel private cost \$200; smoke harm \$30.
A \$30 Pigouvian tax internalises the cost
and cuts to Q^* .



Taxes and permits internalise external costs

Three ways to correct an externality

a Pigouvian tax

set equal to the external cost, so the private cost rises to the social one

a subsidy

for a positive externality, so the private benefit rises to the social one

Coase theorem

if **property rights are clear** and bargaining is **costless**, private parties can solve it themselves without government

why Coase often fails

many affected parties, unclear rights, and real bargaining costs

tradable permits

a cap plus a market, which finds the cheapest abatement

Each remedy **internalises** the externality – makes the decision-maker face the full social cost. Say which cost is being moved onto whom.



Public & private goods

		Excludable	Non-excl.
Rival	Rival	Private	Common
	Non-rival	Club	Public

Two properties: **rivalry** and **excludability** .

- **free-rider problem** : public goods underproduced
- **tragedy of the commons** : common resources overused

Public and Private Goods

		Excludable	Non-excludable
Non-rival	Rival	Private good food, clothes	Common resource ocean fish, air
	Non-rival	Club good cinema, toll road	Public good street light, defence

Goods classified by whether they are rival and excludable

Two traits sort every good into four kinds

rivalry	does one person's use reduce another's?
excludability	can non-payers be kept out ?
private good	rival <i>and</i> excludable – a sandwich
public good	non-rival and non-excludable – national defence, a lighthouse
the free-rider problem	because non-payers cannot be excluded, no one pays, so the market supplies too little or none
the other two	common resources (rival, non-excludable – fisheries) and club goods (non-rival, excludable – cable TV)

Ask the two questions in order and the category follows. The market failure attached to each kind then follows from the category.



Regulating market power

Marginal-cost pricing

$P = MC$: efficient quantity, but a natural monopoly then makes a loss

Average-cost pricing

$P = ATC$: firm breaks even, slight inefficiency

Antitrust policy blocks anti-competitive mergers. But **government failure** – when the cure costs more than the failure – means intervention is not free.

Government tools, and how the tax type matters

antitrust laws	break up or block anti-competitive mergers and collusion
price regulation	a ceiling set at marginal cost restores efficiency but may leave the firm making a loss
a per-unit tax	adds to marginal cost – shifts supply up, raises price, cuts quantity, and creates deadweight loss
a lump-sum tax	a fixed charge – it does not change marginal cost, so price and quantity are unchanged and profit falls
a lump-sum subsidy	the mirror: it raises profit and changes nothing about the chosen quantity
the reason	a firm chooses quantity where $MR = MC$, so only something that moves MC can move the quantity

Ask whether the tool touches marginal cost. That single question decides whether output changes at all.



Inequality – the Lorenz curve

The **Lorenz curve** plots cumulative income vs population. The more it sags, the more unequal.

Gini coefficient = $\frac{A}{A+B'}$
from 0 (equal) to 1 (one person has all).



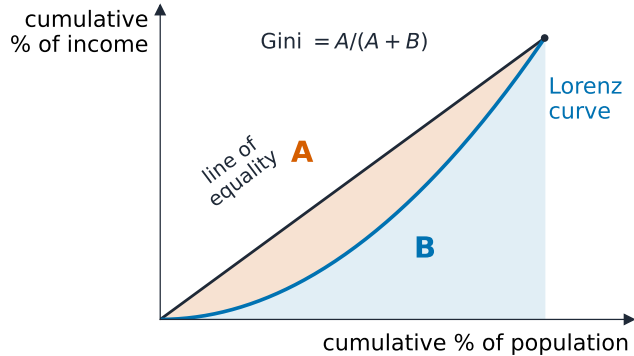
Income shares diverge across households

Where inequality comes from, and what is traded away

human capital	differences in skills and education – the largest single source
inheritance	wealth and opportunity passed on rather than earned
discrimination	pay differences not explained by productivity
progressive taxes	take a higher share from higher incomes, and fund transfers
transfer payments	benefits and social insurance, which change the income distribution after tax
the efficiency–equity trade-off	redistribution can weaken the incentive to work or invest – the standard objection

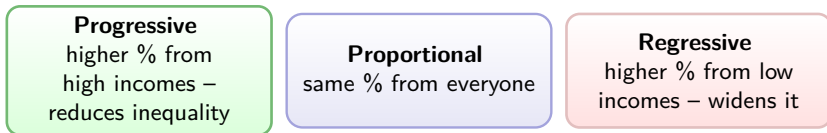
The Lorenz curve and Gini coefficient measure the distribution *before* and *after* tax. Comparing the two is what shows the policy's effect.

Inequality



The Lorenz curve and Gini coefficient measure income inequality

Taxes & redistribution



Inequality has many sources: differences in **human capital**, discrimination, and inherited wealth. **Wealth inequality** usually exceeds income inequality.

Key points

Efficient at $MSB = MSC$;
any gap is a **market failure**

Externalities: negative over-
produce, positive underproduce

Public goods → free rid-
ers; **commons** → overuse

Lorenz & Gini measure inequality

Exam tips

- A **negative externality** makes the market over-produce; correct with a **Pigovian tax** equal to the external cost. A positive externality under-produces; correct with a subsidy.
- A **public good** is non-rival and non-excludable, so free-riding leads markets to under-provide it.
- Classify goods by rivalry and excludability; common resources (rival, non-excludable) suffer the tragedy of the commons.
- The same policy can help or hurt efficiency depending on whether the market was already efficient or failing.
- Measure inequality with the **Lorenz curve** and **Gini coefficient** (0 = equality, 1 = inequality).



Unit 6 – key takeaways

1

Externality

negative over-produces – Pigovian tax

2

Public good

non-rival, non-excludable; free-riding

3

Commons

rival and non-excludable – tragedy

4

Inequality

Lorenz curve and Gini (0 to 1)

Check yourself

- 1 A factory pollutes. Which cost is missing from its decision?
- 2 What are the two features of a public good?
- 3 What does a Lorenz curve further from the diagonal mean?
- 4 Name one way to correct a negative externality.

Answers 1. the external cost – so $MSC > MPC$ 2. non-rival and non-excludable
3. more inequality 4. a Pigouvian tax, regulation, or tradable permits