Market failure and government intervention

Edexcel IAL Economics WEC11 sections 1.3.5-1.3.6 full package

Topic 2 at a glance

> Markets misallocate; the state corrects; sometimes the cure fails.

- WEC11 spec sections 1.3.5 and 1.3.6.
- An **external cost** of 6 reuses the topic-1 tax.

Five sources of market failure

Source	Why prices mislead
externalities	third-party costs and benefits are unpriced
public goods	free riders pay nothing
information gaps	one side knows more
moral hazard	the protected take more risk
bubbles	prices detach from fundamentals

Four kinds of externality

From	External cost	External benefit
production	factory emissions	training other firms use
consumption	congestion from driving	vaccination

A negative externality, drawn

> The market makes 100; society wants 92: the loss is 24.

- Q on the horizontal axis: marginal analysis.
- Context: emissions, congestion, passive smoking.

Worked: the welfare loss

1. **Social cost** $\text{MSC} = Q/4 - 5 + 6 = Q/4 + 1$
2. **Optimum** $70 - Q/2 = Q/4 + 1$: $Q = 92$, $P = 24$
3. **Loss** $\tfrac{1}{2} \times (100 - 92) \times 6 = 24$

Decision

Over-production of 8 costs society 24 a day.

A positive externality, drawn

> The market stops at 100; society wants 108: a gain of 24 is lost.

- Context: vaccination, education.
- The same triangle, now a gain left unclaimed.

Where externalities bite

Context	Example
transport	congestion and pollution
health	vaccination; passive smoking
education	spillovers from a skilled workforce
environment	emissions
financial	risk when a bank fails

Rival and excludable

	Excludable	**Non-excludable**
rival	**private good**: a sandwich	common resource: sea fish
non-rival	club good: a toll road	**public good**: flood defence

Free riders

> Nobody can be charged, so no firm supplies: the state must.

- Only the pure public corner fails this way.
- Examples: flood defence, street lighting.

Information gaps

> When one side knows more, resources go to the wrong places.

- Symmetric: both sides know the same.
- Asymmetric: the used-car seller knows the car.

Moral hazard

> Protection from risk encourages more risk.

- It arises after the contract is signed.
- Banks expecting bailouts lend recklessly.

A bubble, drawn

> Speculation feeds on itself, then the price crashes.

- Contexts: housing, stocks and shares.
- After the burst: negative equity, unemployment.

How governments intervene

Method	How it corrects
indirect tax	a tax of 6 moves output to (92, 24)
subsidy	6 per unit lifts output to 108
price controls	maximum and minimum prices
pollution permits	cap emissions, let firms trade
property rights	victims can sue
provision, **regulation**	public goods; bans, standards
information	closes information gaps

Maximum and minimum prices

A maximum of 16 leaves a shortage of 24; a minimum of 24, a surplus of 24.

- Maximum: rationing, queues, black markets.
- Minimum: the state may buy and store the surplus.

Tradeable pollution permits

> The cap fixes emissions at 84; demand sets the price at 28.

- Low-cost cleaners sell permits.
- High-cost cleaners buy them.

Government failure

Cause	Example
information gaps	a tax set too high overshoots
unintended consequences	black markets, surpluses
administrative costs	collecting, enforcing, storing
lack of incentives	no competition for state providers
moral hazard	guaranteed prices change behaviour

Data response: London's congestion charge

1. **Before** 100,000 vehicles a day
2. **After an 18% fall** $100{,}000 \times 0.82 = 82{,}000$
3. **Revenue at £5** $82{,}000 \times £5 = £410{,}000$ a day

Decision

Traffic fell to 82,000 a day, raising £410,000.

Data response: charge or build roads?

Road pricing

targets the **externality**

funds buses and rail

but regressive

Building roads

popular, adds capacity

induced demand returns

costly, slow, polluting

Check yourself

Question	**Answer**
Welfare loss, **external cost** 6?	$\frac{1}{2} \times 8 \times 6 = 24$
Optimum with an **external benefit**?	108
Maximum price 16?	shortage 24
Public good?	non-rival, non-excludable
Government failure?	a net welfare loss