

# Microeconomics

## IB SL Study Guide

---

### Contents

#### Market Failure

##### Externalities

- Key Concepts: MSC, MSB, MPC, MPB

- Negative Externalities of Production

- Negative Externalities of Consumption

- Positive Externalities of Production

- Positive Externalities of Consumption

##### Merit and Demerit Goods

- Merit Goods

- Demerit Goods

##### Public Goods

- Characteristics of Public Goods

- Private Goods

- The Four-Category Framework

##### Common Pool Resources and the Tragedy of the Commons

- The Tragedy of the Commons

#### Government Intervention in Microeconomics

- Indirect Taxes (Pigouvian Taxes)

- Subsidies for Positive Externalities

- Price Controls

- Regulation and Legislation

#### Market Power: Monopoly and Oligopoly

- Monopoly

- Oligopoly and Game Theory Basics

#### HL Theory of the Firm

- Costs of Production

- Revenue

- Profit Maximisation:  $MC = MR$  Rule

- Market Structures Comparison

#### Government Intervention — Policy

- Evaluation Summary

- Practice Questions

## Market Failure

**Market failure** occurs when the free market, left to its own devices, fails to allocate resources efficiently. The result is a misallocation that reduces total social welfare compared with the socially optimal outcome.

The main sources of market failure in Unit 2 are:

- **Externalities** (positive and negative)
- **Merit and demerit goods**
- **Public goods**
- **Common pool resources**
- **Asymmetric information** (HL context)
- **Market power** (monopoly and oligopoly)

### **MEMORISE THIS**

Market failure exists whenever the **market equilibrium quantity** differs from the **socially optimal quantity** — producing either too much or too little of a good relative to what maximises social welfare.

## Externalities

An **externality** is a cost or benefit that falls on a third party not involved in the transaction between buyer and seller. Externalities are the most heavily tested form of market failure in IB Economics.

### Key Concepts: MSC, MSB, MPC, MPB

| Term       | Meaning                                                                                            |
|------------|----------------------------------------------------------------------------------------------------|
| <b>MPC</b> | Marginal Private Cost — the cost borne by the producer of one additional unit                      |
| <b>MSC</b> | Marginal Social Cost — total cost to society of one additional unit (MPC + external cost)          |
| <b>MPB</b> | Marginal Private Benefit — the benefit to the consumer of one additional unit                      |
| <b>MSB</b> | Marginal Social Benefit — total benefit to society of one additional unit (MPB + external benefit) |

**Social optimum:** The welfare-maximising output is where  $MSC = MSB$ .

**Market equilibrium:** The free market produces where  $MPC = MPB$  (i.e., where private supply meets private demand).

When externalities exist, the market equilibrium deviates from the social optimum — producing either too much (negative externalities) or too little (positive externalities).

## Negative Externalities of Production

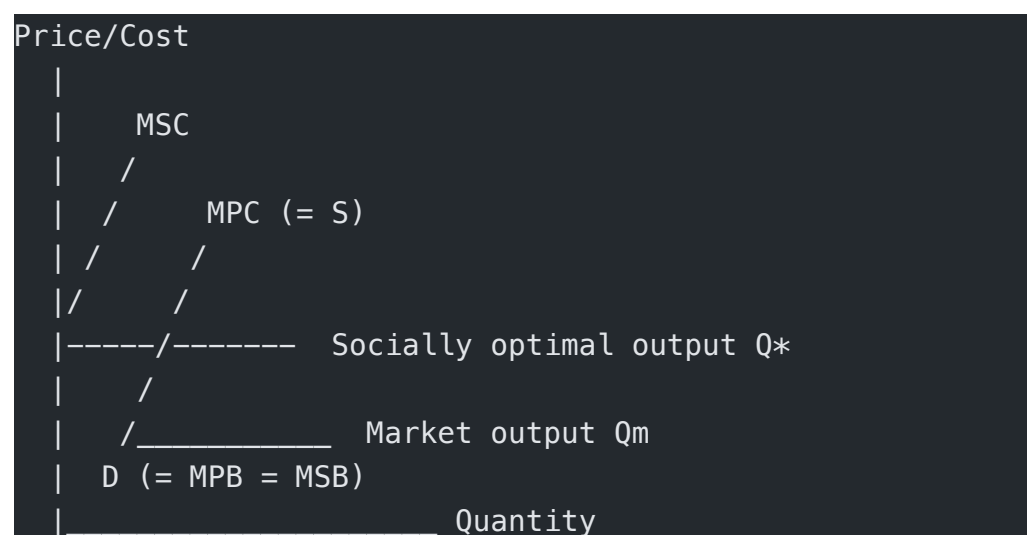
A **negative externality of production** occurs when a firm's production imposes costs on third parties not reflected in the firm's private costs.

**Classic example:** A factory discharges pollution into a river, harming downstream fishing communities and increasing public health costs. These external costs are not borne by the factory — they are borne by society.

### Diagram analysis:

- Supply curve = MPC
- Demand curve = MPB = MSB (no external benefit on the consumption side)
- MSC is above MPC by the amount of the external cost per unit
- Free market produces at  $Q_m$  (where MPC = MPB)
- Socially optimal output is  $Q^*$  (where MSC = MSB)
- Since  $MSC > MPC$ , the social optimum  $Q^*$  is **less than**  $Q_m$
- The market **overproduces** relative to the social optimum

**Deadweight welfare loss (DWWL):** The shaded triangle between  $Q^*$  and  $Q_m$ , bounded above by MSC and below by MSB. It represents the net welfare loss from overproduction.



### ⚠ EXAM ALERT

In a negative externality of production diagram, the key distinction is: **MSC is above MPC** (external cost is added to private cost). The market equilibrium is at the intersection of MPC and MPB — **not** MSC and MSB. The deadweight welfare loss triangle is always between  $Q^*$  and  $Q_m$ .

## Negative Externalities of Consumption

A **negative externality of consumption** occurs when the act of consuming a good imposes costs on third parties.

**Classic example:** Cigarette smoking — passive smokers bear health costs they did not choose.

### Diagram analysis:

- Supply = MPC = MSC (no external cost on the production side)
- Demand = MPB (private benefit to the consumer)
- MSB is **below** MPB by the amount of the external cost per unit (the harm to others is treated as a reduction in social benefit)
- Free market produces at  $Q_m$  (where MPC = MPB)
- Socially optimal output  $Q^*$  is **less than**  $Q_m$
- The market **overproduces**

### 💡 IB TIP

Some IB textbooks show negative consumption externalities with the MPB curve above MSB. This is the standard treatment: the external cost is netted against the social benefit, so MSB lies below MPB. Always label both curves and show  $Q^* < Q_m$  with the DWL triangle.

## Positive Externalities of Production

A **positive externality of production** occurs when a firm's production confers benefits on third parties not captured in the firm's private revenue.

**Classic example:** A beekeeper's bees pollinate neighbouring farmers' crops at no charge.

### Diagram analysis:

- MSC is **below** MPC (external benefit reduces the true social cost)
- Free market output  $Q_m$  is **less than** the socially optimal  $Q^*$
- The market **underproduces**

## Positive Externalities of Consumption

A **positive externality of consumption** occurs when the consumption of a good confers benefits on third parties.

**Classic example:** Education — an educated population benefits employers, lowers crime, and contributes to innovation beyond the direct benefit to the student.

### Diagram analysis:

- Supply = MPC = MSC

- Demand = MPB (private benefit to the consumer)
- MSB is **above** MPB by the amount of the external benefit per unit
- Free market produces at  $Q_m$  (where  $MPC = MPB$ )
- Socially optimal output  $Q^*$  is **greater than**  $Q_m$
- The market **underproduces**
- DWL triangle lies between  $Q_m$  and  $Q^*$

### **MEMORISE THIS**

#### **Externality summary:**

| Type                 | MSC vs MPC  | MSB vs MPB  | Market output vs $Q^*$ |
|----------------------|-------------|-------------|------------------------|
| Negative production  | $MSC > MPC$ | $MSB = MPB$ | Over-produces          |
| Negative consumption | $MSC = MPC$ | $MSB < MPB$ | Over-produces          |
| Positive production  | $MSC < MPC$ | $MSB = MPB$ | Under-produces         |
| Positive consumption | $MSC = MPC$ | $MSB > MPB$ | Under-produces         |

## **Merit and Demerit Goods**

Merit goods are under-consumed at market equilibrium; demerit goods are over-consumed. Government intervention corrects these market failures through subsidies, taxes, or regulation.

### **Merit Goods**

A **merit good** is a good that is underprovided by the free market because individuals underestimate the private benefits it confers, or because it also generates positive externalities. Society as a whole benefits from greater consumption than the free market would deliver.

**Examples:** Education, healthcare, vaccinations, public libraries.

#### **Why they are underprovided:**

1. Positive externalities of consumption mean  $MSB > MPB$  — the market ignores social benefits.
2. Information failure — individuals may not fully appreciate the long-term benefits (e.g., young people undervaluing pension savings).
3. High private cost may deter consumption even when social benefit is high.

### **Demerit Goods**

A **demerit good** is a good that is overprovided by the free market because individuals overestimate the private benefits, or because consumption imposes negative externalities on others.

**Examples:** Tobacco, alcohol, illegal drugs, gambling.

### Why they are overprovided:

1. Negative externalities of consumption mean  $MSB < MPB$  — the market ignores social costs to others.
2. Information failure — individuals underestimate health and addiction risks.
3. Present bias — consumers discount future costs (cancer, liver disease) relative to present pleasure.

#### IB TIP

Merit and demerit goods are frequently confused with public goods. Remember: merit/demerit goods are ordinary private goods (excludable and rival) — they are simply under- or over-consumed because of externalities or information failures. The market failure is a quantitative one (wrong output level), not a structural one (inability to charge a price).

## Public Goods

Public goods are non-excludable and non-rivalrous, creating free-rider problems that prevent markets from providing them efficiently. Government provision is the typical solution.

### Characteristics of Public Goods

A **public good** has two defining characteristics:

1. **Non-rival:** One person's consumption does not reduce the amount available for others. The marginal cost of providing the good to an additional user is zero.
2. **Non-excludable:** It is impossible (or prohibitively costly) to prevent non-payers from consuming the good once it has been provided.

**Examples:** National defence, street lighting, flood defence systems, public fireworks displays.

**The free-rider problem:** Because non-payers cannot be excluded, individuals have an incentive to enjoy the good without paying — they “free ride” on others' contributions. This means private firms cannot profitably supply public goods, leading to market failure through **underprovision or complete non-provision**.

## Private Goods

A **private good** is both **rival** (one person's use reduces availability for others) and **excludable** (non-payers can be refused access).

**Examples:** Food, clothing, cars, cinema seats.

## The Four-Category Framework

|                  | Excludable                      | Non-excludable                                   |
|------------------|---------------------------------|--------------------------------------------------|
| <b>Rival</b>     | Private goods (food, clothes)   | Common pool resources (fish stocks, forests)     |
| <b>Non-rival</b> | Club goods (Netflix, golf club) | Public goods (national defence, street lighting) |

### ⚠ EXAM ALERT

IB examiners test whether candidates can correctly classify goods. A lighthouse is often cited as a public good (non-rival and non-excludable in its traditional form). However, modern technology (GPS signals, selective jamming) could make some goods excludable that were previously not — always consider the context.

## Common Pool Resources and the Tragedy of the Commons

A **common pool resource (CPR)** is a resource that is **rival** (consumption reduces availability) but **non-excludable** (no one can be prevented from using it).

**Examples:** Ocean fish stocks, groundwater aquifers, forests, clean air.

### The Tragedy of the Commons

The **tragedy of the commons** (Hardin, 1968) describes how individually rational behaviour leads to the collective overuse and eventual depletion of a shared resource.

#### The logic:

- Each user gains the full private benefit from extracting one more unit.
- The cost of depletion is shared across all users.
- Therefore each user's private marginal cost of extraction is lower than the social marginal cost.
- Every user over-extracts; the resource is depleted.

#### Real-world examples:

- North Atlantic cod fisheries: decades of over-fishing led to stock collapse in the 1990s.
- Deforestation of communal forests.
- Traffic congestion on unpriced roads.

#### Policy responses:

- **Privatisation** — assign property rights so the owner internalises the cost of depletion (e.g., quota systems for fishing).
- **Government regulation** — catch limits, licensing, seasonal restrictions.

- **Community management** — local self-governance (Ostrom’s “governing the commons” — the argument that communities can manage CPRs without privatisation if given clear rules and enforcement mechanisms).

#### **MEMORISE THIS**

CPR = **Rival + Non-excludable**. The tragedy occurs because the social cost of depletion is not captured in private decision-making. The solution always involves some mechanism to align private and social costs.

## Government Intervention in Microeconomics

Governments use a range of tools to correct market failures. Each has advantages and limitations.

### Indirect Taxes (Pigouvian Taxes)

An **indirect tax** on a good with negative externalities forces producers or consumers to internalise the external cost.

**How it works:** A specific tax equal to the marginal external cost shifts the supply curve left by the tax amount, reducing the market equilibrium output from  $Q_m$  toward  $Q^*$ .

**Examples:** Carbon taxes, excise duties on tobacco and alcohol, congestion charges.

#### **Advantages:**

- Corrects the market signal — producers now face the true social cost of production.
- Generates government revenue that can fund remediation or public services.
- Retains the market mechanism — firms that can reduce pollution cheaply will do so.

#### **Limitations:**

- Difficult to calculate the exact external cost — may over-tax or under-tax.
- Regressive — taxes on goods like tobacco fall disproportionately on lower-income households.
- Industry may lobby to avoid the tax.
- Demand for addictive goods (tobacco, alcohol) is price inelastic — tax may not significantly reduce consumption.

### Subsidies for Positive Externalities

A government **subsidy** shifts the supply curve right (or the demand curve right if paid to consumers), increasing output from  $Q_m$  toward  $Q^*$ .

**Applications:** Subsidies for education, renewable energy, healthcare, vaccinations.

**Advantages:**

- Increases consumption of merit goods and positive externality goods.
- Can be targeted at specific groups (e.g., low-income households).

**Limitations:**

- Fiscal cost to government — opportunity cost of spending.
- Difficult to determine the correct subsidy amount.
- May create dependency.

**Price Controls**

- **Maximum price (price ceiling):** Reduces the price of essentials (e.g., food, rent) but creates shortages. See Unit 1 for the full diagram treatment.
- **Minimum price (price floor):** Used to protect producers (e.g., minimum wage, agricultural price supports).

**Regulation and Legislation**

Governments may directly regulate markets by:

- **Setting standards:** Emission standards for vehicles, food safety regulations.
- **Banning:** Outright prohibition of demerit goods or harmful activities.
- **Licences and permits:** Fishing quotas, tradeable pollution permits (cap and trade).

**Tradeable pollution permits (cap and trade):** The government issues a fixed total number of pollution permits. Firms must hold permits equal to their emissions. Firms that reduce pollution below their permit level can sell surplus permits to others. This creates a market for pollution — the price of permits reflects the marginal cost of abatement — and achieves the pollution target at the lowest cost to society.

## WORKED EXAMPLE

### Worked Example — Evaluating a Carbon Tax

A government introduces a carbon tax of 30 dollars per tonne of CO<sub>2</sub> emitted.

**Intended effect:** The tax equals the estimated external cost of a tonne of carbon emissions, shifting the MPC curve to MSC. The market equilibrium output of carbon-intensive goods falls from  $Q_m$  to  $Q^*$ .

#### Evaluation points:

1. **Effectiveness depends on elasticity:** If demand for petrol is inelastic ( $PED = -0.2$ ), a 30-dollar per tonne tax translates to only a small price rise, causing minimal reduction in quantity. The tax may raise revenue but fail to hit the emissions target.
2. **Distributional impact:** Carbon taxes increase energy costs. Low-income households spend a higher proportion of income on energy, so the tax is regressive. Governments may need to recycle revenue as rebates to poorer households.
3. **International competitiveness:** Firms in countries without a carbon tax gain a cost advantage — domestic carbon-intensive firms may relocate (carbon leakage), shifting emissions rather than reducing them globally.
4. **Measurement problem:** The social cost of carbon is uncertain — estimates range from 15 to over 200 dollars per tonne. Setting the wrong rate leads to under- or over-correction.

**Conclusion:** A carbon tax is a theoretically efficient instrument for internalising externalities, but its effectiveness in practice depends on the accuracy of the rate, the price elasticity of demand for carbon-intensive products, and whether it is combined with international coordination and redistributive transfers.

## Market Power: Monopoly and Oligopoly

When firms gain significant market power, they can raise prices and reduce output below the socially optimal level. The IB syllabus examines monopoly and oligopoly as key departures from perfect competition.

### Monopoly

A **monopoly** is a market with a single seller. The monopolist faces the entire market demand curve, which slopes downward — unlike a perfectly competitive firm, the monopolist must reduce its price to sell more units.

#### Characteristics:

- Only seller — barriers to entry prevent competition.
- Price maker — sets price above marginal cost.
- Abnormal (supernormal) profit in the long run.
- Productive and allocative inefficiency.

#### Barriers to entry:

- Legal barriers: patents, government licences, exclusive franchises.
- Economies of scale: natural monopoly (declining average costs mean one large firm can always undercut new entrants).
- Control of key resources.
- High sunk costs: capital-intensive industries deter entry.

#### Inefficiency of monopoly:

- **Allocative inefficiency:**  $P > MC$  — the monopolist charges more than the social cost of producing the good. Fewer units are produced than would maximise social welfare.
- **Productive inefficiency:** The monopolist is not forced to produce at the minimum point of its average cost curve (no competitive pressure).
- **X-inefficiency:** Without competitive pressure, managers may allow costs to rise above the minimum achievable level.

### Oligopoly and Game Theory Basics

An **oligopoly** is a market dominated by a small number of large firms whose pricing and output decisions are **mutually interdependent** — each firm must consider how rivals will react to its decisions.

#### Characteristics:

- Few dominant firms, high market concentration.
- Significant barriers to entry.
- Differentiated or homogeneous products.
- Non-price competition (advertising, branding, loyalty programmes).

#### Collusion:

- **Explicit collusion (cartel):** Firms formally agree on price and output to act like a joint monopoly. Illegal in most jurisdictions (e.g., OPEC — though sovereign nations are exempt from national competition law).
- **Tacit collusion:** Informal coordination without explicit agreement — e.g., price leadership (firms follow the dominant firm's price changes).

HL

#### Game Theory — The Prisoner's Dilemma:

The strategic interactions in oligopoly can be modelled using game theory. The classic scenario is the **prisoner's dilemma**:

Two firms (A and B) each choose between **cooperating** (maintaining a high price / cartel agreement) or **defecting** (undercutting to gain market share).

**Payoff matrix (profit in millions of dollars):**

|              | B: Cooperate   | B: Defect     |
|--------------|----------------|---------------|
| A: Cooperate | A = 10, B = 10 | A = 2, B = 15 |
| A: Defect    | A = 15, B = 2  | A = 5, B = 5  |

**Analysis:**

- If B cooperates, A does better by defecting ( $15 > 10$ ).
- If B defects, A still does better by defecting ( $5 > 2$ ).
- Defecting is a **dominant strategy** for both firms — it produces the better outcome regardless of what the rival does.
- The **Nash equilibrium** is (Defect, Defect) — both firms earn 5 — even though both would be better off if they cooperated (10 each).

This is why cartels are inherently unstable: each member has a private incentive to cheat on the agreement.

#### **IB TIP**

In the prisoner's dilemma, the Nash equilibrium is not the Pareto optimal outcome. Recognising this tension between individual rationality and collective welfare is central to HL market structure analysis.

## **HL** Theory of the Firm

HL extends production theory by analysing how firms' cost structures — short-run and long-run — determine output decisions and profit maximisation. These concepts underpin the more advanced market structure analysis.

### **Costs of Production**

**Fixed costs (FC):** Costs that do not vary with output in the short run (e.g., rent, interest payments, insurance). Fixed costs are incurred even when output is zero.

**Variable costs (VC):** Costs that change directly with output (e.g., raw materials, piece-rate labour, energy).

**Total cost:**  $TC = FC + VC$

**Average (total) cost:**  $AC = \frac{TC}{Q}$  — the cost per unit of output.

**Average fixed cost:**  $AFC = \frac{FC}{Q}$  — falls continuously as output rises (fixed costs spread over more units).

**Average variable cost:**  $AVC = \frac{VC}{Q}$

**Marginal cost:**  $MC = \frac{\Delta TC}{\Delta Q}$  — the additional cost of producing one more unit.

**The law of diminishing marginal returns (short run):** As more variable inputs are added to a fixed factor (e.g., more workers to a fixed factory), marginal product eventually falls, causing marginal cost to rise.

### Short-run cost curves:

The MC curve is U-shaped. It falls initially (as specialisation and division of labour improve productivity) then rises (as diminishing returns set in).

The AC curve is also U-shaped and is intersected by the MC curve at its **minimum point**. When  $MC < AC$ , AC is falling; when  $MC > AC$ , AC is rising.

### MEMORISE THIS

$MC$  always crosses  $AC$  and  $AVC$  at their **minimum points**. This is a mathematical identity: if the marginal unit costs less than the average, the average is pulled down; if it costs more, the average is pulled up.

## Revenue

**Total revenue:**  $TR = P \times Q$

**Average revenue:**  $AR = \frac{TR}{Q} = P$  — the AR curve is the demand curve.

**Marginal revenue:**  $MR = \frac{\Delta TR}{\Delta Q}$  — the additional revenue from selling one more unit.

For a **price-taking firm** (perfect competition):  $P = AR = MR$  — the demand and MR curves are the same horizontal line.

For a **price-making firm** (monopoly, monopolistic competition): The demand curve slopes downward. To sell one more unit, the firm must reduce price on **all** units sold (not just the last one), so MR falls twice as fast as AR. The MR curve lies **below** the demand (AR) curve.

## Profit Maximisation: MC = MR Rule

A firm maximises profit (or minimises loss) by producing the output level at which  $MC = MR$ , provided  $MC$  is rising (cutting the MR curve from below).

**Intuition:** If  $MR > MC$ , the firm gains more revenue than it spends by producing one more unit — it should expand. If  $MR < MC$ , the firm loses money on the marginal unit — it should reduce output. Profit is maximised only where  $MR = MC$ .

## ✍ WORKED EXAMPLE

### Worked Example — Profit Maximisation for a Monopolist

A monopolist faces demand  $P = 100 - 2Q$  and has total cost  $TC = 20Q + 200$ .

**Step 1 — Find MR:**  $TR = P \times Q = (100 - 2Q)Q = 100Q - 2Q^2$   $MR = \frac{d(TR)}{dQ} = 100 - 4Q$

**Step 2 — Find MC:**  $MC = \frac{d(TC)}{dQ} = 20$

**Step 3 — Set MC = MR:**  $20 = 100 - 4Q$   $4Q = 80$   $Q^* = 20$

**Step 4 — Find price:**  $P^* = 100 - 2(20) = 60$  dollars

**Step 5 — Calculate profit:**  $\pi = TR - TC = (60 \times 20) - (20 \times 20 + 200) = 1200 - 600 = 600$  dollars

**Check allocative inefficiency:** At  $Q^* = 20$ ,  $P = 60$  dollars but  $MC = 20$  dollars. Since  $P > MC$ , the monopolist is allocatively inefficient.

## Market Structures Comparison

HL

| Feature               | Perfect Competition     | Monopolistic Competition | Oligopoly            | Monopoly           |
|-----------------------|-------------------------|--------------------------|----------------------|--------------------|
| Number of firms       | Many                    | Many                     | Few                  | One                |
| Product type          | Homogeneous             | Differentiated           | Homo. or diff.       | Unique             |
| Barriers to entry     | None                    | Low                      | High                 | Very high          |
| Price control         | None (price taker)      | Some                     | Significant          | Full (price maker) |
| Long-run profit       | Normal only             | Normal only              | Abnormal possible    | Abnormal           |
| Allocative efficiency | Yes ( $P = MC$ )        | No ( $P > MC$ )          | No                   | No                 |
| Productive efficiency | Yes (long run)          | No                       | No                   | No                 |
| Examples              | Wheat, foreign exchange | Restaurants, clothing    | Airlines, oil majors | Utilities, patents |

## ⚠ EXAM ALERT

Perfect competition is allocatively efficient ( $P = MC$ ) and productively efficient in the long run (production at minimum AC). No real-world market achieves perfect competition, but it serves as the benchmark against which other market structures are evaluated.

### Long-run equilibrium in monopolistic competition:

In monopolistic competition, short-run abnormal profit attracts new entrants. As entry continues, each firm's demand curve shifts left (lower market share) until only normal profit is earned. In long-run equilibrium:  $P = AC$  (no abnormal profit) but  $P > MC$  (allocative inefficiency persists because of product differentiation).

►Watch: Externalities and Market Failure

VIDEO

## Government Intervention — Policy Evaluation

### Summary

| Policy tool              | Corrects                               | Advantage                                 | Key limitation                                |
|--------------------------|----------------------------------------|-------------------------------------------|-----------------------------------------------|
| Indirect tax (Pigouvian) | Negative externality                   | Uses price mechanism                      | Hard to set correct rate; may be regressive   |
| Subsidy                  | Positive externality / merit good      | Increases consumption of beneficial goods | Fiscal cost; may create dependency            |
| Max price                | Unaffordable necessities               | Protects low-income consumers             | Creates shortages; DWL                        |
| Min price                | Under-priced goods / support producers | Supports incomes                          | Creates surpluses; DWL                        |
| Tradeable permits        | Negative externality                   | Achieves target at least cost; flexible   | Initial permit allocation can be politicised  |
| Regulation / ban         | Any market failure                     | Clear and enforceable                     | Costly to administer; may cause black markets |
| Provision of information | Information failure                    | Respects consumer choice                  | Only works if information changes behaviour   |

►Watch: Government Intervention

VIDEO

## Practice Questions

### Short-answer (Paper 2 style):

1. Define “negative externality of production” and explain, using a diagram, why a free market overproduces a good with such an externality. (4 marks)
2. Distinguish between a public good and a merit good, giving one example of each. (4 marks)
3. Explain, using a diagram, how an indirect tax on cigarettes can help correct the market failure associated with smoking. (4 marks)
4. **HL** A firm has total revenue  $TR = 80Q - Q^2$  and marginal cost  $MC = 2Q + 10$ . Find the profit-maximising output and the price at that output. (4 marks)

**Essay questions (Paper 1 style):**

5. (a) Explain the concept of market failure using the example of negative externalities of production. (10 marks) (b) Evaluate the use of a carbon tax as a government response to negative externalities from fossil fuel combustion. (15 marks)
6. (a) Explain, using diagrams, why a free market will fail to provide public goods and will underprovide merit goods. (10 marks) (b) Evaluate the view that government regulation is more effective than taxation in addressing market failure arising from negative externalities. (15 marks)

- ▶ Answer guidance — Question 4 (HL)
- ▶ Answer guidance — Question 5(b) evaluation points