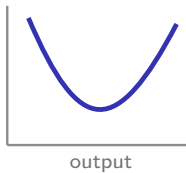


The Microeconomy

A-Level Economics ■ Topic 7

A-Level Economics



What we will cover

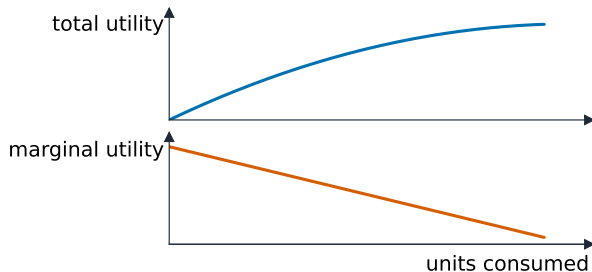
- 1 Utility & consumer choice
- 2 Efficiency & market failure
- 3 Costs & economies of scale
- 4 Revenue & profit
- 5 Market structures
- 6 Growth & objectives of firms



consumers maximise utility



Utility and consumer choice



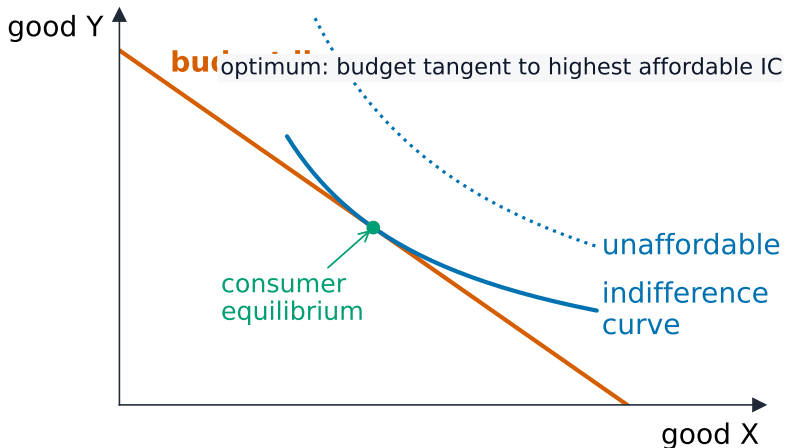
diminishing MU: each extra unit adds less · TU
flattens as $MU \rightarrow 0$

- **total utility** is the satisfaction from all the units consumed.
- **marginal utility** is the extra satisfaction from one more unit.

Indifference curves and budget lines

Consumer equilibrium : the budget line touches the highest **indifference curve** . A price fall has a **substitution effect** & **income effect** ; a rare **Giffen good** even slopes **upward**.

Indifference curves and budget lines, in detail



The consumer's best choice is where the budget line is tangent to the highest reachable indifference curve; a higher curve is unaffordable.

Income and substitution effects

When the price of a good falls, the consumer buys more for two reasons:

- the **substitution effect** – the good is now cheaper than others, so the consumer switches towards it.
- the **income effect** – the consumer's money now buys more, so real income has risen.
- for a **normal good** , both effects raise the quantity bought.
- for an **inferior good** , the income effect works the other way (higher real income lowers demand), but it is usually weaker, so demand still rises when price falls.



Efficiency and market failure

productive – lowest cost

allocative – $P = MC$, what people want

dynamic – improves over time

Pareto – no gain without a

Market failure (inefficiency) from monopoly power, **externalities**, public goods, information failure & factor immobility.



Externalities create market failure

Marginal analysis, and the deadweight loss

the curves

MPC and MSC ; MPB and MSB

society's best

where $MSC = MSB$

what the market does

produces where $MPC = MPB$ – and the gap between the two is where welfare is lost

a negative externality

pollution: MSC lies above MPC, so the market makes too much

a positive externality

education: MSB lies above MPB, so the market makes too little

deadweight welfare loss

the triangle between the social and private curves, from the market quantity to the optimum

Shade the triangle and label it. An externality answer without the deadweight loss identified is describing the diagram, not analysing it.

Marginal private, external and social

Marginal private cost

Marginal private cost (MPC): the cost to the *producer* of one more unit.

Marginal social cost

Marginal social cost (MSC): MPC plus the external cost imposed on everyone else.

Marginal private benefit

Marginal private benefit (MPB): the benefit to the buyer of one more unit – which is what the **demand curve** traces.

Marginal social benefit

Marginal social benefit (MSB): MPB plus the external benefit to others.

Diminishing marginal utility

Each extra unit adds less satisfaction – **diminishing marginal utility** – which is why the demand curve slopes down at all.

The welfare loss on any externality diagram is the gap between the private and the social curve, over the units traded past the social optimum.

Private, external and social

private cost

the cost falling on the buyer or seller in the deal

external cost

the cost falling on **everyone else** – people who were not part of the decision

social cost

private + external – the true cost to society

the same three for benefits

private benefit, external benefit, and **social benefit**

the failure

the market weighs only the **private** column, so it gets the quantity wrong whenever the external column is not zero

Write the three levels down before drawing anything. Every externality diagram is just the gap between the private curve and the social one.

The four kinds of efficiency

allocative

resources go where consumers want them: $\text{price} = \text{marginal cost}$

productive

output is made at the **lowest average cost** – the bottom of the AC curve

dynamic

improving **over time** through new technology and better products

Pareto optimality

no one can be made better off **without** making someone else worse off

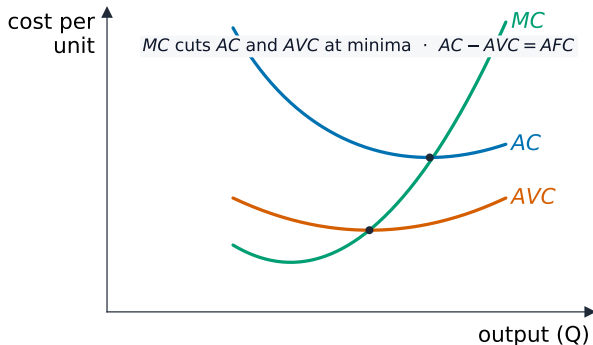
the trade

perfect competition delivers the first two and starves the third, because no firm earns the profit to fund research

Static efficiency is about *today's* allocation; dynamic efficiency is about *tomorrow's* possibilities. A market structure can be strong on one and weak on the other.



Costs in the short run



Total cost = fixed + variable .

- $AC = TC/Q$;
 $MC = \Delta TC / \Delta Q$
- **diminishing returns** make MC rise

MC cuts AC at its lowest point.

Fixed, variable, and the revenue side

Fixed cost

A **fixed cost** does not change with output – rent, insurance, the loan payment. In the long run there are none.

Variable cost

A **variable cost** rises with output: materials, power, piece-rate labour.

Marginal revenue

Marginal revenue : the revenue from one more unit. Profit is maximised where it equals marginal cost.

Subnormal profit

Subnormal profit is a return below the opportunity cost of staying – so the firm leaves in the long run, though it may stay short-run while it covers its variable costs.

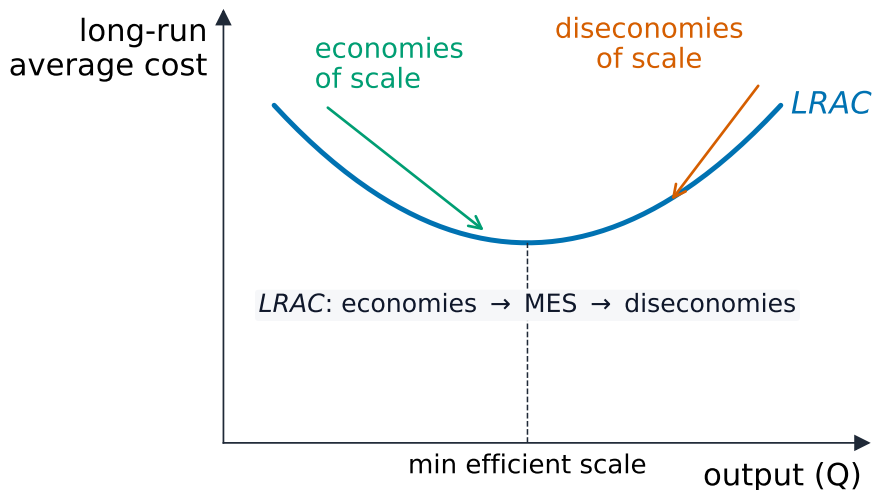
Normal profit is a *cost*: it is what the entrepreneur must earn to stay. That is why it sits inside the cost curve.

Economies of scale

In the long run all factors vary, so we look at **returns to scale** .

- **economies of scale** – LRAC falls (bulk, big machines)
- **diseconomies** – LRAC rises (poor control)

Economies of scale, in detail



In the long run all factors vary, so we look at **returns to scale** .

Revenue and profit

normal

just enough to
stay – a cost

supernormal

profit above normal

subnormal

below normal – may leave

A firm maximises profit at the output where $MR = MC$. (Revenue $TR = P \times Q$; $MR = \Delta TR / \Delta Q$.)

Worked example – profit from average revenue and cost

A firm sells 100 units at an average revenue of £12, with an average cost of £9. Find its profit.

- profit = total revenue – total cost
= $(AR - AC) \times Q$
- = $(12 - 9) \times 100 = \$300$
- note: economists include the **opportunity cost of the owner's own resources** inside cost

So **normal profit** – just enough to keep the owner in this business – counts as a *cost*. Anything above it is **supernormal profit**, and that is what attracts entry.



The four market structures

- **perfect competition** – many **price takers** ; normal profit
- **monopolistic competition** – **differentiation**
- **oligopoly** – a few; may form a **cartel**
- **monopoly** – one; supernormal profit

The four market structures, in detail

perfect competition

many firms, no **barriers to entry** , identical products – normal profit in the long run

monopolistic competition

many firms, low barriers, **differentiated** products – normal profit long run

oligopoly

a **few** firms, high barriers, products vary – often **super-normal** profit, and interdependent decisions

monopoly

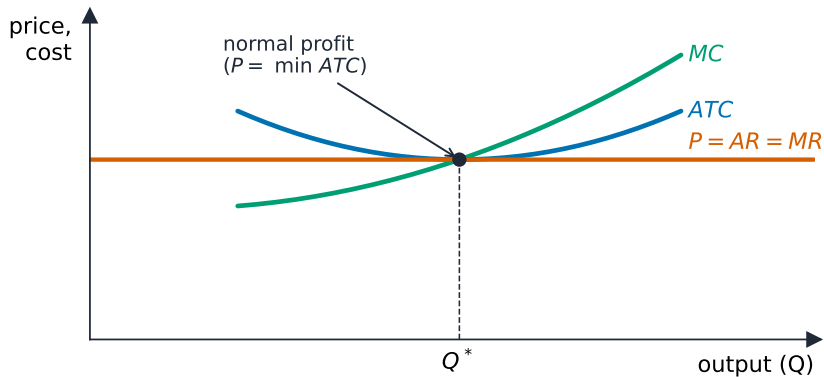
one firm, very high barriers, a unique product – super-normal profit sustained

what decides

the number of firms, the height of the **barriers**, and how far products differ

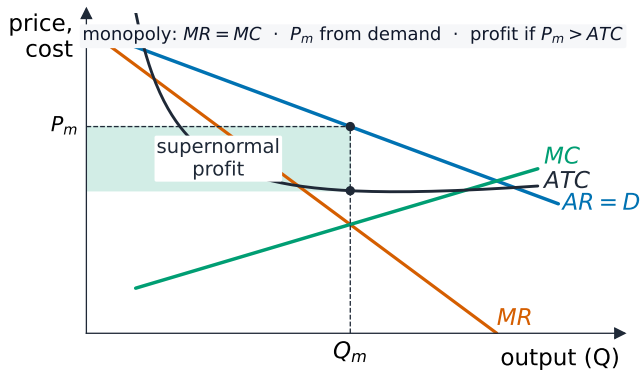
Barriers to entry are what let supernormal profit *persist*. Without them, profit attracts entry and is competed away – which is the whole long-run story.

Perfect competition: normal profit, and efficient



long-run PC: $P = AR = MR = \min ATC$ · normal profit

Supernormal profit, dearer



supernormal profit, dearer

supernormal profit, dearer



Growth and price discrimination

horizontal

same stage

vertical

different stage

conglomerate

different industry

Price discrimination : charge groups different prices for the same good – needs market power, different elasticities & no resale.

How firms compete, and how they grow

price competition

cutting price to win share – easily matched, and it can end in a price war nobody wins

non-price competition

advertising, quality, branding and service – harder to copy, and it builds loyalty

internal growth

organic: growing bigger by **selling more**. Slow, but controlled

external growth

merger or takeover. Fast, but it risks culture clashes and **diseconomies of scale**

collusion

in oligopoly, firms may agree on price instead of competing – illegal, and unstable, because each has an incentive to cheat

Oligopoly is the interesting case precisely because each firm's best move **depends on what the others do** – which is why its outcomes are hardest to predict.

Objectives of firms

profit max

$$MR = MC$$

revenue max

$$MR = 0$$

sales max

most at
normal profit

satisficing

good enough

Divorce of ownership from control creates the **principal-agent problem** : managers may not chase the owners' profit.

Firms do not always maximise profit

profit maximisation

produce where $MR = MC$ – the traditional assumption

revenue maximisation

produce where $MR = 0$, perhaps to grow **market share** first

sales maximisation

the largest output consistent with at least normal profit

satisficing

aim for “good enough” results that keep owners, workers and customers all reasonably happy

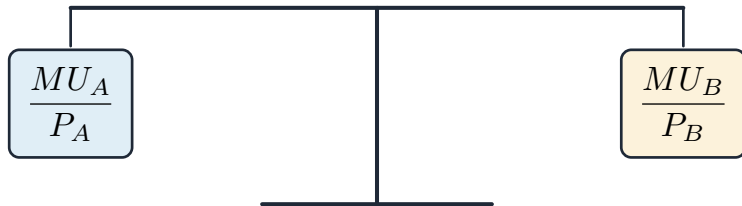
why they diverge

in large companies the owners (shareholders) are **not** the managers

That **divorce of ownership from control** creates the **principal–agent problem**: managers pursue their own aims, and share options exist to realign them.

The equi-marginal principle

in balance: total utility is at its greatest



the **last dollar** spent on each good gives the **same extra utility**

Utility is maximised when the last dollar on each good gives the same extra utility

Limitations

The approach is hard to use in practice: utility cannot really be measured in numbers, and people do not calculate like this.

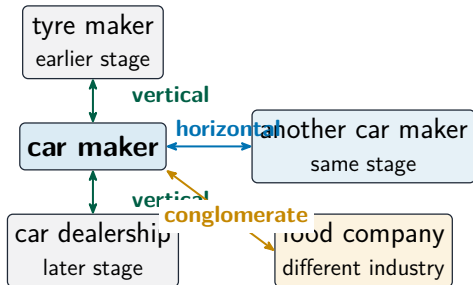
Efficiency and market failure, continued

productive efficiency
*making goods at the
lowest possible cost*

allocative efficiency
*making the goods
people most want*

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

The growth and survival of firms



horizontal: same stage,
same industry

vertical: another stage
of the same industry

conglomerate: a different
industry, to spread risk

External growth on the production chain: horizontal, vertical and conglomerate integration

How firms grow, and how small ones survive

Horizontal integration

Horizontal integration : merging with a firm at the same stage of the same industry.

Vertical integration

Vertical integration : merging with a supplier or a customer – securing an input or a route to market.

Product differentiation

Product differentiation is how a small firm survives: be different enough that price is not the only comparison.

And why some stay small

Niche demand, personal service, low barriers to entry, and diseconomies that would follow growth.

Every merger promises economies of scale. Ask which specific economy, and whether the two cultures can deliver it.

Why many firms stay small

the market is small

local services – a hairdresser, a plumber – have no national market to grow into

the owner's choice

many owners want to **keep control** rather than take on investors

few economies of scale

where average cost does not fall much with size, a large firm has no advantage

how they survive

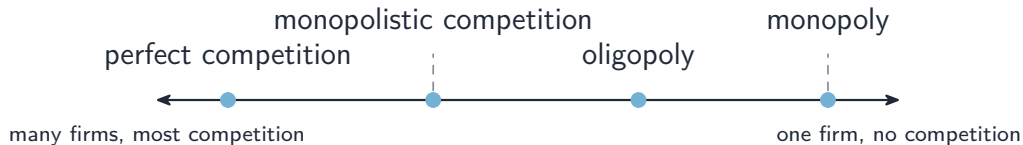
personal service, flexibility, a **niche**, and supplying larger firms

barriers to exit

sunk costs can also trap a small firm in a market it would rather leave

Small firms are not failed large ones. Where the scale economies are weak and the service is personal, small *is* the efficient size.

Market structures



The four structures sit on a spectrum of competition: many firms at one end (perfect competition), a single firm at the other (monopoly)

Costs



A large steel plant: big firms gain economies of scale, so average cost falls as output rises.

Exam tips

- Calculate **AC, MC, TR and MR**, and remember a firm maximises profit where $MR = MC$.
- Distinguish the **market structures** (perfect competition, monopolistic competition, oligopoly, monopoly) by number of firms, barriers and price-setting power.
- Distinguish **normal from supernormal profit** and link long-run entry and exit to it.
- On a cost diagram, note that MC cuts AC at the minimum of AC.



Worked example – average and marginal cost

10 units cost £500 in total; 11 units cost £540. Find AC at 10 units and the MC of the 11th.

- $AC = \frac{TC}{Q} = \frac{500}{10} = \text{£}50$
- $MC = \Delta TC = 540 - 500 = \text{£}40$ (the cost of one more unit).
- $MC < AC$, so the 11th unit is cheaper than the current average.
- $\Rightarrow$ it pulls the average down: AC at 11 is $540/11 = \text{£}49.09$.

MC below AC drags AC down; MC above AC pushes it up. So MC always cuts AC at its minimum – that is the whole reason the curves are drawn that way.

Topic 7 – key takeaways

1

Consumer

diminishing utility; equi-marginal spending

2

Costs

U-shaped AC; economies then diseconomies

3

Profit

max at $MR = MC$; normal vs supernormal

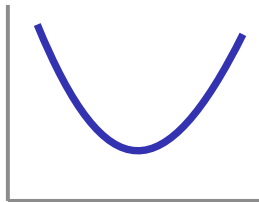
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Structures

perfect competition to monopoly

Check yourself

- 1 At what output is profit maximised?
- 2 Allocative efficiency needs price equals what?
- 3 How many firms in a monopoly?
- 4 A car maker buying a tyre maker is which integration?



Answers 1. where $MR = MC$ 2. marginal cost 3. one 4. vertical