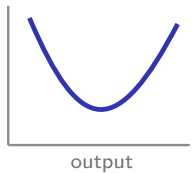
The Microeconomy

A-Level Economics ▪ Topic 7

A-Level Economics



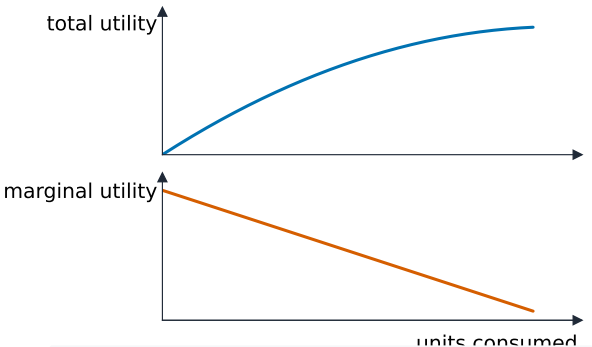
What we will cover

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

1 Consumer choice

Utility and consumer choice

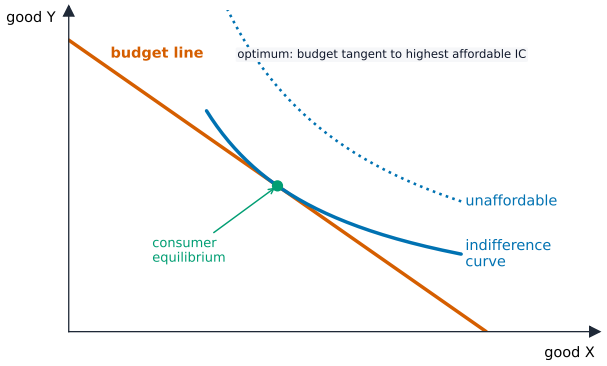


- **total utility** 总效用 is the satisfaction from all the units consumed.
- **marginal utility** 边际效用 is the extra satisfaction from one more unit.

Indifference curves and budget lines

Consumer equilibrium 消费者均衡: the budget line touches the highest **indifference curve** 无差异曲线. A price fall has a **substitution effect** 替代效应 & **income effect** 收入效应; a rare **Giffen good** 吉芬品 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** 替代效应 – the good is now cheaper than others, so the consumer switches towards it.
- the **income effect** 收入效应 – the consumer's money now buys more, so real income has risen.
- for a **normal good** 正常品, both effects raise the quantity bought.
- for an **inferior good** 低档品, the income effect works the other way (higher real income lowers demand), but it is usually weaker, so demand still rises when price falls.

2

Efficiency

Efficiency and market failure

productive 生产效率 – lowest cost

allocative 配置效率 – $P = MC$, what people want

dynamic 动态效率 – improves over time

Pareto 帕累托最优 – no gain without a loss

Market failure 市场失灵 (inefficiency) from monopoly power, **externalities** 外部性, public goods, information failure & factor immobility.

Externalities create market failure

Marginal analysis, and the deadweight loss

the curves	**MPC** 边际私人成本 and **MSC** 边际社会成本; **MPB** 边际私人收益 and **MSB** 边际社会收益
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 负外部性	pollution: MSC lies above MPC, so the market makes too much
a positive externality 正外部性	education: MSB lies above MPB, so the market makes too little
deadweight welfare loss 无谓损失	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** 边际私人成本 (MPC): the cost to the *producer* of one more unit.
Marginal social cost	**Marginal social cost** 边际社会成本 (MSC): MPC plus the external cost imposed on everyone else.
Marginal private benefit	**Marginal private benefit** 边际私人收益 (MPB): the benefit to the buyer of one more unit – which is what the **demand curve** 需求曲线 traces.
Marginal social benefit	**Marginal social benefit** 边际社会收益 (MSB): MPB plus the external benefit to others.
Diminishing marginal utility	Each extra unit adds less satisfaction – **diminishing marginal utility** 边际效用递减 – 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 私人成本	the cost falling on the buyer or seller in the deal
external cost 外部成本	the cost falling on everyone else – people who were not part of the decision
social cost 社会成本	private + external – the true cost to society
the same three for benefits	private benefit, external benefit, and **social benefit 社会收益**
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.

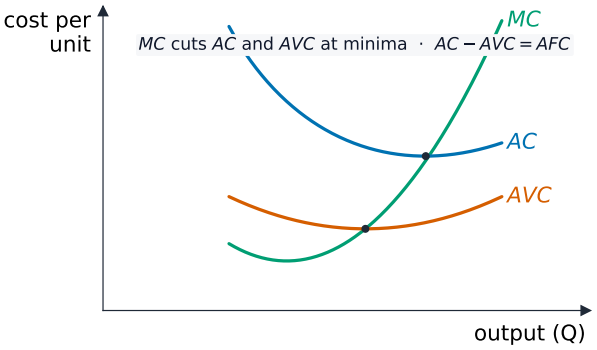
The four kinds of efficiency

allocative 配置效率	resources go where consumers want them: price = marginal cost
productive 生产效率	output is made at the lowest average cost – the bottom of the AC curve
dynamic 动态效率	improving over time through new technology and better products
Pareto optimality 帕累托最优	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.

3 Costs, revenue and profit

Costs in the short run



Total cost 总成本 = **fixed** 固定成本 + **variable** 可变成本.

- $AC = TC/Q$; $MC = \Delta TC/\Delta Q$
- **diminishing returns** 边际报酬递减 make MC rise

MC cuts AC at its lowest point.

Fixed, variable, and the revenue side

Fixed cost	A **fixed cost** 固定成本 does not change with output – rent, insurance, the loan payment. In the long run there are none.
Variable cost	A **variable cost** 变动成本 rises with output: materials, power, piece-rate labour.
Marginal revenue	**Marginal revenue** 边际收益: the revenue from one more unit. Profit is maximised where it equals marginal cost.
Subnormal profit	**Subnormal profit** 低于正常利润 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.

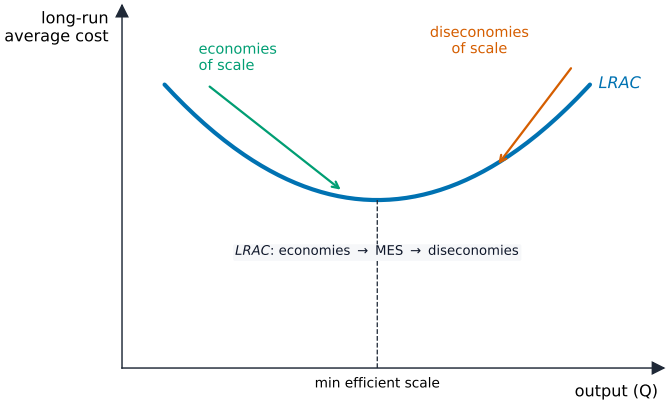
Normal profit is a *cost*: it is what the entrepreneur must earn to stay. That is why it sits inside the cost curve.

Economies of scale

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

- **economies of scale** 规模经济 – LRAC falls (bulk, big machines)
- **diseconomies** 规模不经济 – LRAC rises (poor control)

Economies of scale, in detail



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

Revenue and profit

normal 正常利润

just enough to stay – a cost

supernormal 超常利润

profit above normal

subnormal 次正常利润

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.

4 Market structures

The four market structures

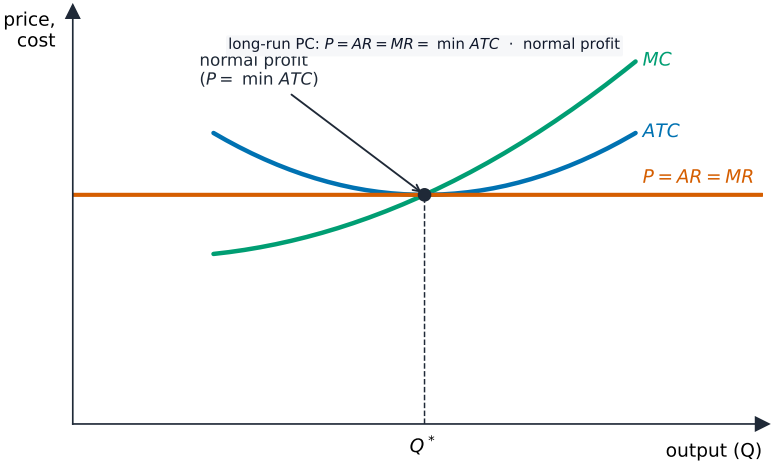
- **perfect competition** 完全竞争 – many **price takers** 价格接受者; normal profit
- **monopolistic competition** 垄断竞争 – **differentiation** 产品差异化
- **oligopoly** 寡头垄断 – a few; may form a **cartel** 卡特尔
- **monopoly** 垄断 – one; supernormal profit

The four market structures, in detail

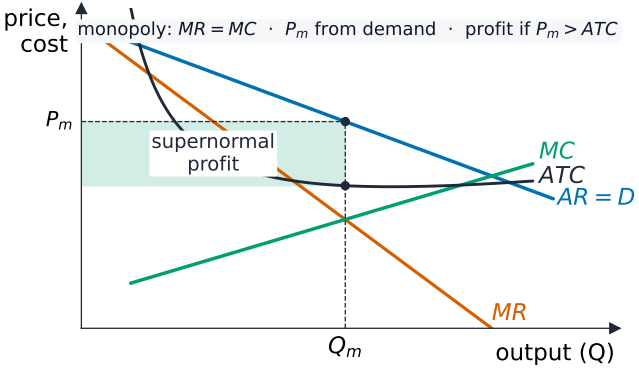
perfect competition	many firms, no **barriers to entry** 进入壁垒, identical products – normal profit in the long run
monopolistic competition 垄断竞争	many firms, low barriers, differentiated products – normal profit long run
oligopoly 寡头垄断	a few firms, high barriers, products vary – often supernormal profit, and interdependent decisions
monopoly 垄断	one firm, very high barriers, a unique product – supernormal 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



Supernormal profit, dearer



supernormal profit, dearer

supernormal profit, dearer

5 Firms

Growth and price discrimination

horizontal 横向一体化
same stage

vertical 纵向一体化
different stage

conglomerate 混合一体化
different industry

Price discrimination 价格歧视: 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 非价格竞争	advertising, quality, branding and service – harder to copy, and it builds loyalty
internal growth 内部增长	organic: growing bigger by selling more. Slow, but controlled
external growth 外部增长	merger or takeover. Fast, but it risks culture clashes and **diseconomies of scale** 规模不经济
collusion 勾结	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
利润最大化
$MR = MC$

revenue max
收益最大化
$MR = 0$

sales max
销售最大化
most at
normal profit

satisficing
满意化
good enough

Divorce of ownership from control 所有权与控制权分离 creates the **principal-agent problem** 委托代理问题: managers may not chase the owners' profit.

Firms do not always maximise profit

profit maximisation 利润最大化	produce where MR = MC – the traditional assumption
revenue maximisation 收益最大化	produce where MR = 0, perhaps to grow market share first
sales maximisation 销售最大化	the largest output consistent with at least normal profit
satisficing 满意化	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** 所有权与控制权分离 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.

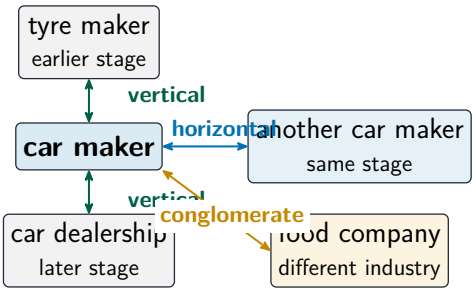
Efficiency and market failure, continued

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** 横向整合: merging with a firm at the same stage of the same industry.
Vertical integration	**Vertical integration** 纵向整合: merging with a supplier or a customer – securing an input or a route to market.
Product differentiation	**Product differentiation** 产品差异化 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.

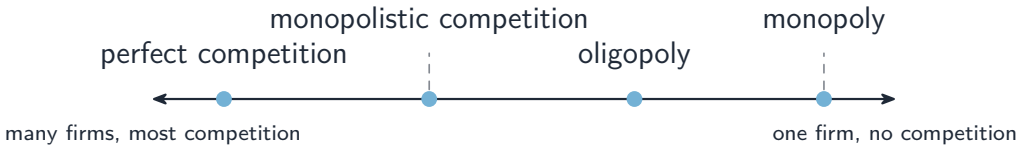
> Every merger promises economies of scale. Ask which specific economy, and whether the two cultures can deliver it.

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 退出壁垒	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.

Costs

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.

6 Recap

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.

- $\text{AC} = \dfrac{\text{TC}}{Q} = \dfrac{500}{10} = £50$
- $\text{MC} = \Delta\text{TC} = 540 - 500 = £40$ (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 $540/11 = £49.09$.

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

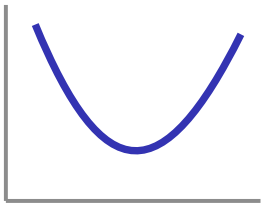
max at $MR = MC$; normal vs supernormal

4 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