

Cambridge AS & A Level · Economics 9708 · Notes

Different market structures

A2

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Read first: [Types of cost, revenue and profit, short-run and long-run production](#), [Efficiency and market failure](#)

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What you need to know

By the end of this topic you should be able to:

1. **Name and describe the market structures:** perfect competition, and the imperfect ones: monopolistic competition, oligopoly, monopoly and natural monopoly.
2. **Explain the structure of each** by the number of buyers and sellers, how far products are differentiated, how freely firms can enter, and how much information buyers and sellers have.
3. **Barriers to entry and exit:** legal, market, cost and physical barriers, with examples.
4. **The performance of firms in each structure:** their revenue curves; output and profit in the short run and the long run; the shutdown price in the short run and the long run; how a perfectly competitive firm's supply curve is derived; efficiency and X-inefficiency in the short and long run; contestable markets, their features and what they imply; price and non-price competition; collusion and the Prisoner's Dilemma, including a two-player pay-off matrix.
5. **The concentration ratio:** define it and calculate it.

Cost and revenue curves are in the previous topic and the kinds of efficiency in "Efficiency and market failure". Cartels and limit and predatory pricing belong to later topics, but questions here use them, so the key ideas are included.

Understand it

The four market structures

A **market structure** describes the competitive conditions a firm sells in. Four features decide which one you are looking at.

	Perfect competition	Monopolistic competition	Oligopoly	Monopoly
Number of sellers	very many, each tiny	many	a few large firms dominate	one

	Perfect competition	Monopolistic competition	Oligopoly	Monopoly
Product	identical (homogeneous)	differentiated (brands, style, location)	identical or differentiated	unique, no close substitute
Entry and exit	free	free or low barriers	high barriers	very high barriers
Information	perfect	imperfect	imperfect	imperfect
Control over price	none: price taker	some: price maker	considerable, but depends on rivals	price maker
Examples	wheat or rice farming, currency dealing	hairdressers, cafés, street food sellers	supermarkets, mobile networks, airlines, banks	a water company, a firm with a patent

Number of buyers matters too: these models assume many buyers. A market with **one buyer** is a **monopsony** (small farmers who can sell only to one processor); you study it fully with labour markets.

A firm's **demand curve is its AR curve**. A price taker's AR is horizontal, so $AR = MR = P$. Every other structure faces a downward-sloping AR, so **MR is below AR**. Every firm maximises profit where $MC = MR$.

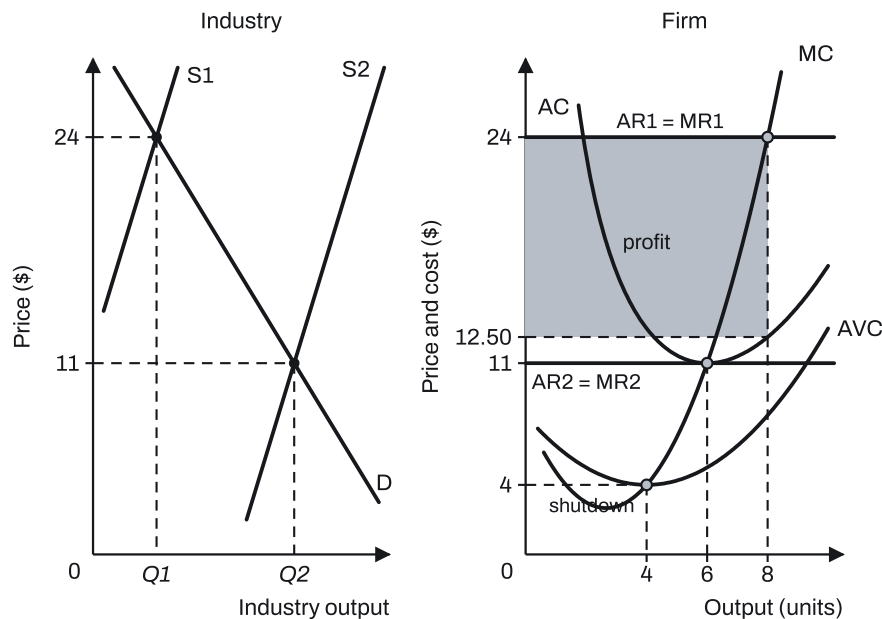
Barriers to entry and exit

A **barrier to entry** is anything that makes it hard or costly for a new firm to join a market. Barriers are what let firms keep supernormal profit in the long run.

- **Legal barriers**: patents and copyright, licences (only licensed taxis or banks may operate), government franchises.
- **Market barriers**: strong brand loyalty built by heavy advertising; control of distribution (exclusive deals with retailers); **limit pricing**, where existing firms set a price low enough that a new firm with higher costs could not make a profit; **predatory pricing**, cutting price below cost to drive out a firm that has already entered, then raising it again.
- **Cost barriers**: high start-up and fixed costs; **economies of scale**, where the minimum efficient scale (MES) is large compared with market demand, so a small entrant has much higher average cost; high **sunk costs** (money that cannot be recovered on leaving, such as advertising or specialised equipment), which are also a **barrier to exit**.
- **Physical barriers**: control of a scarce resource or location (the only quarry, the airport slots), or owning the network (pipes, rail track).

Perfect competition

Each firm is so small that it cannot change the market price: it takes the price set by **market** demand and supply, and sells all it wants at that price.



Short run. At a price of \$24 the firm produces 8 units, where MC rises through MR. Its average cost there is \$12.50, so it makes **supernormal profit** of \$92: $(24 - 12.50) \times 8 = 92$. A price below average cost would give **subnormal profit** (a loss) instead.

Long run. Supernormal profit attracts new firms; with free entry and perfect information nothing stops them. Industry supply shifts right (S1 to S2) and the price falls until it equals the **lowest point of AC**, \$11 here, where each firm makes **only normal profit**. If firms make losses, some leave, supply shifts left and the price rises back to the same point. So in the long run: $P = AR = MR = MC = \text{minimum AC}$.

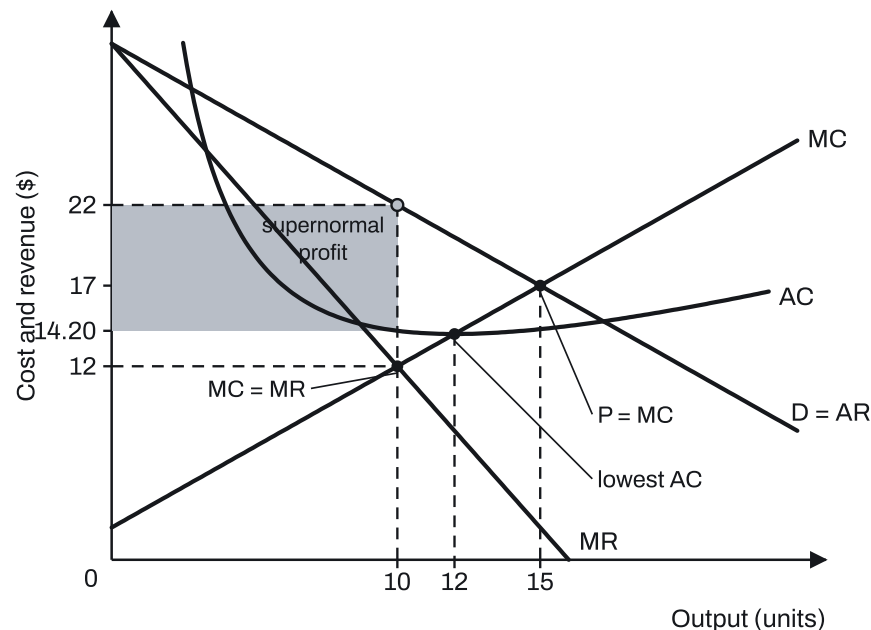
Shutdown prices. In the short run fixed costs are paid anyway, so a firm keeps producing as long as the price covers **average variable cost**: the **short-run shutdown price is the lowest AVC** (\$4 here). In the long run all costs are variable, so the firm leaves unless the price covers **average total cost**: the **long-run shutdown price is the lowest AC** (\$11).

The firm's supply curve. At every price the firm produces where $P = MC$, so its MC curve tells you how much it supplies at each price. Below the lowest AVC it supplies nothing. So a **perfectly competitive firm's short-run supply curve is its MC curve above the lowest AVC**; the industry supply curve adds these up across firms. When firms leave, industry supply shifts **left** at every price.

Efficiency. In the long run $P = MC$ (allocative) and output is at the lowest AC (productive). Competition leaves no room for **X-inefficiency** (costs above the lowest possible for that output). But with only normal profit and perfect information, there is little money or reason to innovate, so **dynamic efficiency** is unlikely. In the short run $P = MC$ still holds, but output need not be at the lowest AC.

Monopoly

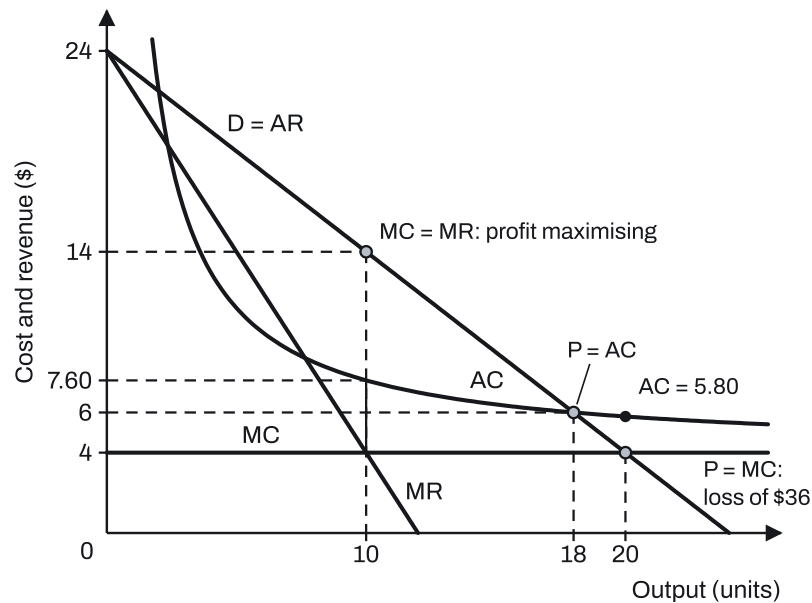
A **pure monopoly** is the only seller of a product with no close substitutes, protected by high barriers. Its AR is the whole market demand curve.



The monopoly produces 10 units, where $MC = MR = \$12$, and charges the highest price buyers will pay for 10 units, \$22. Average cost is \$14.20, so supernormal profit is \$78: $(22 - 14.20) \times 10 = 78$.

- **The profit lasts in the long run**, because barriers stop new firms entering.
- **Allocative inefficiency**: price \$22 is above MC of \$12. Buyers value further units above their cost, but output stops at 10, not the 15 units where $P = MC$: a higher price and a deadweight loss.
- **Productive inefficiency**: 10 units, not the 12 where AC is lowest.
- **X-inefficiency**: with no rivals there is little pressure to control costs, so the whole AC curve may be higher than necessary.
- **But: economies of scale** may give it lower costs (even prices) than many small firms; secure profit can fund research (**dynamic efficiency**); and it does not **always** make supernormal profit: demand may be low, a regulator may cap the price, or it may aim for sales.

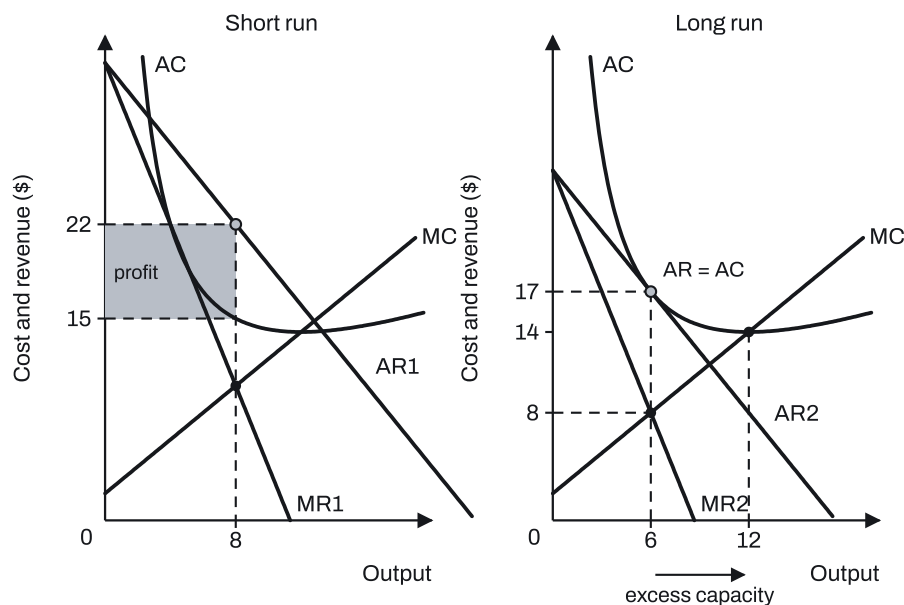
Natural monopoly. In some industries the fixed costs are huge (laying water pipes, a power grid, a railway) and the extra cost of each customer is small, so **average cost keeps falling over the whole range of market demand**. MES is as large as, or larger than, the market. One firm can supply the market more cheaply than two or more, because duplicating the network would double the fixed cost.



Because AC is still falling, **MC is below AC** at every output. Left alone, the firm produces where $MC = MR$ (10 units at \$14). A regulator who wants allocative efficiency would set $P = MC$ (\$4, 20 units), but then price is below AC (\$5.80) and the firm makes a **loss** of \$36, $(5.80 - 4) \times 20 = 36$, so it needs a subsidy or state ownership. A compromise is **average cost pricing** ($P = AC$, \$6, 18 units): normal profit, but $P > MC$. A natural monopoly is never at the lowest point of AC, because AC never stops falling, so it cannot be productively efficient in the usual sense.

Monopolistic competition

Many firms sell **similar but differentiated** products (each café has its own location, menu and style) and entry is **free**. Each firm has a little loyal custom, so its AR slopes down, but it is **elastic** because there are many close substitutes.



Short run: like a small monopoly. With AR1 it makes 8 units at \$22, with AC \$15: supernormal profit of \$56:
 $(22 - 15) \times 8 = 56$.

Long run: the profit attracts new firms with similar products. Each existing firm loses customers, so its **AR shifts left** and becomes **more elastic** (more substitutes). Entry continues until AR just **touches AC** (a tangency), at the same output where $MC = MR$: here 6 units at \$17. Then $AR = AC$: **only normal profit**, and no reason for more firms to enter. If firms make losses, some leave and AR shifts right until the same tangency.

Performance in the long run:

- **Not allocatively efficient:** price \$17 is above MC of \$8.
- **Not productively efficient:** the tangency is on the falling part of AC (6 units, AC \$17), not at the lowest AC (12 units, \$14). The gap is **excess capacity**: each firm could produce more at a lower unit cost.
- **But** consumers get **variety**; prices stay close to cost; heavy advertising raises costs, and with only normal profit there is little money for research.

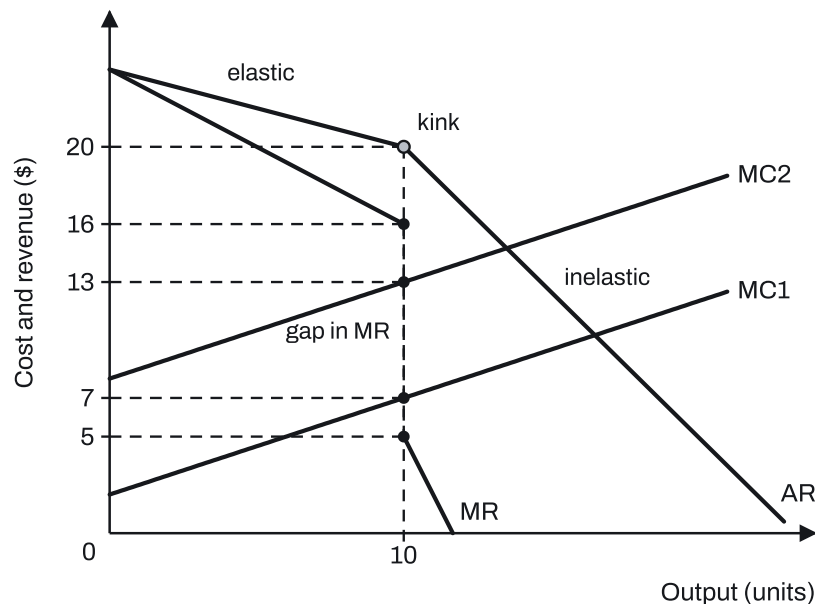
A monopolistically competitive firm gains market share by **non-price competition**: advertising, quality, brand image, location, service.

Oligopoly

A few large firms dominate the market behind high barriers, selling identical (cement, petrol) or differentiated (cars, phones) products. The key feature is **interdependence**: each firm's best price or advertising depends on how rivals react, so firms face **uncertainty**. There is no single oligopoly model; these are the ones you need.

The kinked demand curve explains why prices in a non-collusive oligopoly tend to be **stable** (price rigidity). The firm is at price P . It assumes:

- if it **raises** its price, rivals will **not** follow, so it loses many customers: demand above P is **elastic**, and total revenue **falls**;
- if it **cuts** its price, rivals **will** follow to protect their sales, so it gains few customers: demand below P is **inelastic**, and total revenue falls again.



The kink gives MR a **vertical gap** at the current output. MC can move anywhere within it (\$7 to \$13 in the diagram) without changing the best price and output. Only a **large** cost rise, lifting MC above the gap, makes the firm raise its price, and rivals with the same costs are likely to follow. The model's weakness: it explains why P is stable, not how P was set.

Price and non-price competition. A price cut is likely to be matched and can start a **price war** that cuts every firm's profit, so oligopolists usually compete through advertising, branding, loyalty schemes, quality, new models and service. Price wars still happen, especially when demand falls.

Collusion. Firms may agree to limit competition. **Formal (overt) collusion** is an explicit agreement on prices, output or market shares; a group that does this is a **cartel** (OPEC is an international one). **Tacit collusion** has no agreement: firms follow a **price leader**, often the largest. Colluding firms act like one monopoly: higher prices, lower output, supernormal profit. A cartel is easier to run when it includes **most firms** in the industry, **barriers to entry are high** (so outsiders can't undercut it), there are few firms with similar costs and products, and cheating is easy to spot. It breaks down when members **cheat** by secretly selling more, when demand falls, or when it is caught: collusion on prices is **illegal** in most countries.

The Prisoner's Dilemma (game theory) shows why collusion is attractive but unstable. Two bus companies, X and Y, each choose whether to keep their fare high or to cut it. The pay-off matrix shows each firm's weekly profit in \$000 (X's first).

	Y keeps fare high	Y cuts fare
X keeps fare high	50, 50	20, 70
X cuts fare	70, 20	30, 30

If Y keeps its fare high, X earns 70 by cutting rather than 50; if Y cuts, X earns 30 by cutting rather than 20.

Cutting is better for X whatever Y does: its **dominant strategy**, and Y's too. Both cut and earn 30 each: a **Nash equilibrium**, where neither can do better by changing alone. Yet both would earn 50 by keeping fares

high. Self-interest leaves both worse off, which is why firms are tempted to **collude**, and why collusion is **unstable**: each gains by cheating (70 against 50). In a repeated game, firms may learn to trust each other.

Contestable markets

A **contestable market** is one where firms face the **threat of entry**, whatever the number of firms already there. In a **perfectly contestable** market, entry and exit are free and costless: there are **no sunk costs**, and entrants can use the same technology as incumbents. Even a monopoly then behaves competitively, because any supernormal profit would attract **hit-and-run** entry: a new firm comes in, takes the profit and leaves without loss.

Implications:

- **Consumers**: incumbents keep prices close to average cost (they earn about normal profit in the long run), so prices are lower and choice is wider.
- **Producers**: abnormal profit is reduced; firms must cut costs and remove **X-inefficiency** to survive; they may use **limit pricing** to deter entry.
- **Efficiency**: productive and allocative efficiency are more likely. Perfect competition and monopolistic competition are contestable; a pure monopoly behind high barriers is not.
- **In practice** no market is perfectly contestable: a firm that leaves cannot recover its sunk costs. Governments raise contestability by removing legal barriers and through competition policy.

Efficiency in each structure

Long run	Perfect competition	Monopolistic competition	Oligopoly	Monopoly
Profit	normal	normal	supernormal likely (barriers), but price wars possible	supernormal (barriers)
Allocative ($P = MC$)	yes	no ($P > MC$)	no	no
Productive (lowest AC)	yes	no (excess capacity)	unlikely	no, unless scale economies
Dynamic (investment, innovation)	unlikely	limited	likely (profit and rivalry)	possible (profit funds research)
X-inefficiency	none	little	possible	likely

Concentration ratio

A **concentration ratio** measures how much of a market the largest firms control. The ***n*-firm concentration ratio** is the **combined market share** (by sales, output or employment) of the *n* largest firms. If the five largest firms in a market have shares of 30%, 22%, 15%, 9% and 6%, the 3-firm ratio is $30 + 22 + 15 = 67\%$ and the 4-firm ratio is 76%.

A high ratio (the four largest firms selling well over half the market) suggests **oligopoly**; a low one suggests many small firms. It says nothing about **how** firms behave (a concentrated market can still be contestable or fiercely competitive) and it ignores imports.

Key facts and formulas

There is no formula list in the 9708 exam, so everything here is "Learn it".

Formula	Status
Profit maximisation in every structure: $MC = MR$ (MC rising)	Learn it
Perfect competition: $P = AR = MR$; long run $P = MC = \text{minimum AC}$	Learn it
Supernormal profit = $(AR - AC) \times Q$; normal profit when $AR = AC$	Learn it
Short-run shutdown price = lowest AVC; long-run shutdown price = lowest AC	Learn it
Perfectly competitive firm's supply curve: MC above the lowest AVC	Learn it
Monopolistic competition, long run: $AR = AC$ (tangency) at the output where $MC = MR$	Learn it
Allocative efficiency: $P = MC$; productive efficiency: output at lowest AC	Learn it
Natural monopoly: $MC < AC$ at every output; $P = MC$ gives a loss, $P = AC$ gives normal profit	Learn it
<i>n</i> -firm concentration ratio = sum of the market shares of the <i>n</i> largest firms	Learn it

How to do it

We tagged 89 questions for this topic, from 2021 to 2026 (77 different ones; 12 are repeats across paper variants): 55 Paper 3 multiple choice and 34 Paper 4 data-response and essay questions. For Paper 4 we count only the parts about this topic. Nine questions have parts of more than one type, so the counts add up to 102.

Question type	Questions
Compare long-run profit and efficiency across market structures	24
Identify a market structure from its features, data or a case study	18
Explain or evaluate barriers to entry, contestability and limit pricing	17
Explain oligopoly behaviour (kinked demand, game theory, collusion, cartels)	16

Question type	Questions
Read a monopoly or monopolistic competition cost and revenue diagram	9
Evaluate monopoly power for consumers and government control of it	8
Define, calculate or interpret a concentration ratio	7
Apply short-run and long-run shutdown conditions	3

Paper 4 essays were 25 marks (12- and 13-mark parts) in 2021–2022 and are 20 marks from 2023: up to 14 for knowledge and analysis (Table A) and 6 for evaluation (Table B).

1. Compare long-run profit and efficiency across market structures (24 questions)

Multiple choice (13). Use the efficiency table: test $P = MC$ (allocative), lowest AC (productive), profit to invest (dynamic) and whether entry removes supernormal profit, one at a time. Perfect and monopolistic competition share $AR = AC$ in the long run; only perfect competition has $AR = MR$. Barriers allow X-inefficiency. Dynamic efficiency is least likely in perfect competition.

Essays (11). Statements such as "only perfect competition...", "is always more efficient than...", "is the ideal".

1. **Define** the terms in the question (normal, supernormal profit; short and long run; the efficiencies).
2. **Perfect competition with diagrams:** the short-run profit (or loss) **and** the move to long-run normal profit through entry or exit (both panels of the first diagram). Show MC through the lowest AC.
3. **At least one other structure with its diagram:** monopoly keeps supernormal profit; monopolistic competition returns to normal profit but with excess capacity.
4. **Evaluate** with the "But" points under Monopoly: perfect competition is a theoretical benchmark; economies of scale may give a monopoly **lower** costs; profit funds research; a monopoly does not always make supernormal profit; oligopoly profit depends on collusion or price wars.
5. **Conclude** on the key word in the question ("only", "always", "ideal").

2. Identify a market structure from its features, data or a case study (18 questions)

Multiple choice (13). Match the clues to the table in "Understand it": brands, advertising and long-run normal profit → monopolistic competition; a few firms with a large combined share, uncertainty and high start-up costs → oligopoly; huge fixed costs, low MC and MES large compared with demand → natural monopoly; an identical product and no control over price → perfect competition; one buyer → monopsony.

Data response (5).

1. **Name the structure** (1 mark). Explanation marks usually count only if the structure is right, so decide carefully.
2. **Quote each feature from the extract** and link it to the structure: number of firms, differentiated or identical product, barriers or none, price maker or taker (1 mark each).
3. When two groups are compared, do steps 1–2 for **each**.

4. **"With a diagram, consider long-run profits"**: draw the structure's diagram (axes, AR, MR, MC, AC, MC = MR marked), then explain long-run profit and why (entry, or barriers).

3. Explain or evaluate barriers to entry, contestability and limit pricing (17 questions)

Multiple choice (7). Classify the barrier (a patent is **legal**; high fixed and sunk costs and a large MES are **cost** barriers). "A few firms facing competition from potential entrants" is a **contestable** market. Real markets are not perfectly contestable because sunk costs can't be recovered on exit. Perfect and monopolistic competition are contestable; pure monopoly is not.

Data response. Define a contestable market (threat of entry, low sunk costs) and give a benefit to consumers (lower prices, more choice). Distinguish **limit pricing** (price set low to **deter** entry) from **predatory pricing** (price below cost to **drive out** a firm that has entered).

Essays (20 marks). For "the impact of more contestability on consumers and producers":

1. **Define** contestability; name the barriers that reduce it, especially sunk costs.
2. **Diagram** of the starting point: a monopoly (or oligopoly) at $MC = MR$ with supernormal profit. Without a diagram, answers are held to Level 2.
3. **Analyse** with "Contestable markets" above: lower prices, more output and choice for consumers; less supernormal profit and pressure to cut X-inefficiency for producers.
4. **Evaluate**: smaller shares can lose **economies of scale**, so prices may not fall; a **natural monopoly** is cheaper as one firm; less profit can mean less research; it depends on **how far** barriers really fall. Then **conclude** on who gains most.

For "is competition decided only by barriers to entry?", analyse **two structures with diagrams**, one without barriers and one with them, then evaluate: oligopolists still fight price wars and compete on non-price terms; contestability and regulation limit even a monopoly. On **market demand and MES**: if MES is small relative to demand, many firms fit; if it is close to total demand, only one or a few.

4. Explain oligopoly behaviour (16 questions)

Multiple choice (7).

- **Kinked demand**: rivals ignore a rise (demand elastic above P , TR falls) and match a cut. A firm raises price only after a **large** cost increase.
- **Pay-off stories in words** ("it could earn more alone, but less if its rival undercuts; it doesn't know what its rival will do"): a **Prisoner's Dilemma**.
- **Non-collusive pricing**: if one firm raises its price, the others keep theirs to win market share.
- **Cartels** are hardest to run when few of the firms are members and entry barriers are low.

Essays and data response. For "oligopolies avoid price competition and keep supernormal profit in the long run":

1. **Features** of oligopoly and **interdependence**.

2. **Kinked demand curve** with a labelled diagram (price rigidity), then **game theory** (why price cuts are self-defeating; a stable Nash equilibrium). Link the three ideas to the question.
3. **How profit is kept**: barriers, collusion or price leadership, limit pricing, **non-price competition**.
4. **Evaluate**: collusion is illegal and cartels break down through cheating; barriers erode (new technology, governments making markets contestable); limit pricing gives up short-run profit; advertising is costly; some firms price low to grow market share; price wars happen.
5. **Conclude** on "able to" and "in the long run".

Case-study parts ask how the firms in the extract compete: give examples of price and non-price competition from the text.

5. Read a monopoly or monopolistic competition cost and revenue diagram (9 questions)

All multiple choice. Mark the output where **MC = MR** first, then go up to **AR** for the price.

1. **Total supernormal profit** = $(AR - AC) \times Q$: the rectangle between price and AC at the profit-maximising output.
2. **Normal profit only**: the output where AR crosses AC.
3. **Long-run monopolistic competition**: AR **tangent** to AC directly above the output where MC = MR.
4. **A demand change**: find the new MC = MR output, then compare the new TR ($P \times Q$) and the new deadweight-loss triangle (between AR and MC, from the monopoly output to the output where $P = MC$) with the old.
5. **Output where MR $\neq$ MC**: the firm is not maximising profit; at AR = AC it makes only normal profit.

6. Evaluate monopoly power and government control of it (8 questions)

Paper 4 only: data-response parts and essays.

1. **Both sides** from "Monopoly" above, with the monopoly diagram marking the allocative and productive losses.
2. **Government options, each with a drawback**: tax supernormal profit (less investment); a maximum price (shortages if set too low); regulate a natural monopoly at $P = MC$ (a loss, needs a subsidy) or $P = AC$; break up the firm or block mergers (loses economies of scale); make the market contestable.
3. **Conclude**: intervene where the monopoly abuses its power and has no cost advantage; regulate rather than break up a natural monopoly.

8-mark parts usually allow up to 4 marks for each side plus a conclusion.

7. Define, calculate or interpret a concentration ratio (7 questions)

1. **Define**: the combined market share of the n largest firms (1); it shows how far the market is dominated by a few firms (1).

2. **Calculate:** add the shares of the n largest firms **in each year**, re-ranking the firms if their order changes.
3. **Interpret:** a high or rising ratio suggests oligopoly; a fall means the leaders lost **share**, not necessarily sales or profit (the market may have grown). Mergers between large firms raise it.

8. Apply short-run and long-run shutdown conditions (3 questions)

1. For each firm, $TR \geq TVC$ means stay open in the short run; $TR < TVC + TFC$ as well means leave in the long run.
2. On a diagram: the short-run shutdown point is the lowest AVC; the long-run one is the lowest AC.

Worked examples

Example 1

A monopolistically competitive firm is in long-run equilibrium. It produces 300 units a week and sells them at \$9 each. Its marginal cost at this output is \$5. Its average cost would be lowest, at \$7.50, if it produced 450 units.

Which statement is correct?

A The firm is allocatively efficient. **B** The firm makes normal profit and has excess capacity of 150 units. **C** The firm makes supernormal profit of \$1200 a week. **D** The firm is productively efficient.

[1]

In long-run equilibrium AR is tangent to AC, so AC at 300 units is \$9 = price: normal profit, which rules out C (it wrongly uses MC: $(9 - 5) \times 300 = 1200$). Price \$9 is above MC of \$5, so not allocatively efficient (A wrong). Output is 300, below the 450 units at lowest AC, so not productively efficient (D wrong), and the gap is $450 - 300 = 150$ units of excess capacity. The answer is **B** (1).

Example 2

A monopolist has constant marginal and average costs of \$20 a unit. It faces the demand curve $P = 60 - 2Q$, so its marginal revenue is $MR = 60 - 4Q$.

What are its profit-maximising price and the deadweight welfare loss compared with the output where price equals marginal cost?

	Price	Deadweight loss
A	\$20	\$0
B	\$40	\$100
C	\$40	\$200
D	\$50	\$100

[1]

MR = MC: $60 - 4Q = 20$, so $Q = 10$ and $P = 60 - 2Q = 40$, a price of \$40. Supernormal profit is $(40 - 20) \times 10 = 200$ dollars, which is the trap in C. Where $P = MC$: $60 - 2Q = 20$, so $Q = 20$. The deadweight loss is the triangle between demand and MC from 10 to 20 units: $\frac{1}{2} \times (40 - 20) \times (20 - 10) = 100$ dollars. The answer is **B** (1).

Example 3

Extract: Harbourton is a city of 500 000 people. It has about 300 independent hair salons. Each has its own styles, staff and location, and prices for a cut range from \$15 to \$45. Opening a salon needs only a rented shop and about \$12 000 of chairs, basins and dryers, and new salons open every month. In contrast, the city's piped gas comes from a single company that owns the only network of pipes under the streets. The company's costs are mostly the fixed cost of the network; supplying gas to an extra home costs very little. A councillor has proposed that the company should be made to charge a price equal to its marginal cost.

(a) Which market structure best describes Harbourton's hair salons? Draw a diagram and use it to explain what will happen to a salon's profit over time. [6]

(b) Consider whether the gas company should be required to set its price equal to marginal cost. [8]

(a) Hair salons are in **monopolistic competition** (1), shown by the many sellers (about 300), differentiated services (own styles, staff and location) and easy entry (about \$12 000 of equipment). The features support the identification; they earn no extra marks on their own.

Diagram: the right-hand panel of the monopolistic competition diagram. Axes labelled cost/revenue and output, with every curve labelled (1); the profit-maximising output where $MC = MR$ marked (1); AR, MR, MC and AC drawn correctly, with AR just touching AC above that output (1).

If salons make supernormal profit, new salons open (the extract says every month), so each salon loses customers and its AR shifts left until it just touches AC. Then $AR = AC$ at the $MC = MR$ output, so salons make **normal profit** in the long run (1), because there are no barriers to stop entry (1). (*Identification 1, diagram 3, explanation 2: 6 marks.*)

(b) Marked like a data-response "consider" part: up to 4 marks for each side and 1 for a conclusion, 8 maximum.

For $P = MC$. As a natural monopoly with no rivals, the company would otherwise produce where $MC = MR$ and price far above marginal cost (1), restricting output and making supernormal profit at consumers' expense (1). At $P = MC$ the price reflects the cost of supplying one more home, so output rises to the allocatively efficient level (1) and households pay much less for an essential good, which helps poorer families (1).

Against. With mostly fixed costs, AC keeps falling and MC is below AC at every output (1), so at $P = MC$ revenue would not cover total cost: a loss, as the natural monopoly diagram shows (1). It would need a subsidy from taxes, or it would stop investing in the pipes and might leave in the long run (1). A guaranteed subsidy also removes pressure to control costs: X-inefficiency (1).

Conclusion. Marginal cost pricing gives the efficient output only if the council will fund the loss; without a subsidy, regulating the price at average cost is better, since it removes supernormal profit while the company covers its costs (1).

Example 4

"Firms in monopolistic competition waste resources because they produce below the output at which average cost is lowest."

With the help of a diagram, evaluate this view. [20]

Model answer (outline of each paragraph):

1. **Definitions.** The features of monopolistic competition; productive efficiency (output at lowest AC) and allocative efficiency ($P = MC$). (AO1.)
2. **Short run to long run.** Both panels of the monopolistic competition diagram: supernormal profit at $MC = MR$, then entry shifts AR left and makes it more elastic until it touches AC: normal profit. (AO2: *labelled diagrams used in the text.*)
3. **For the view.** Because AR slopes down, the tangency is on the **falling** part of AC: excess capacity, so each unit uses more resources than it needs. $P > MC$ too, so output is below the allocatively efficient level. Heavy advertising of near-identical products adds cost without much value. (AO2: *developed chains.*)
4. **Variety has value.** Excess capacity is the price of choice: consumers want different styles, locations and qualities, which one standard product at lowest AC could not give. (AO3.)
5. **Compared with what?** Perfect competition hardly exists. Against monopoly or oligopoly, there is no long-run supernormal profit, little X-inefficiency and prices close to AC. (AO3.)
6. **How large is it?** The more close substitutes, the more elastic AR and the closer the tangency to lowest AC, so the waste may be small; but with only normal profit, dynamic efficiency is weak. (AO3.)
7. **Conclusion.** Partly right: firms do have excess capacity and are neither productively nor allocatively efficient. But "waste" overstates it, since some of the extra cost buys variety consumers want, and free entry keeps prices near cost. (*Justified conclusion; Table B Level 2.*)

(Table A Level 3: 14; Table B Level 2: 6; **20/20.**)

Common mistakes

- **Showing only the short run.** In June 2024 many answers drew the perfectly competitive firm's supernormal profit but not how entry removes it. Always show the move to the long run.
- **Badly drawn diagrams** (June 2024): MC must cut AC at its lowest point, and profit is maximised where $MC = MR$. In monopolistic competition the long-run AR must **touch** AC at the $MC = MR$ output.
- **Mixing up AC and MC in long-run monopolistic competition.** Price **equals** AC (normal profit; June 2022 report) but is **above** MC, so it is not allocatively efficient (March 2023 report: 40% chose the wrong option).

- **Expecting price competition in oligopoly.** Many candidates missed that oligopolists avoid price competition (March 2026 report, Question 4).
- **Getting cartel conditions backwards.** In March 2026 a common wrong answer said a cartel finds it hard to fix prices when most firms are members. The more firms in the cartel and the higher the barriers, the easier it is.
- **Describing the kinked demand curve without using it.** In June 2022 and March 2025 the reports said answers did not link interdependence, the kinked demand curve and game theory to the question.
- **Statements without chains** (March 2023): explain **how** collusion makes the market act like a monopoly, not just "higher prices".
- **Vague concentration ratios** (June 2023): explain what the ratio shows about competition **and** how it is calculated (the sum of the largest firms' market shares).
- **One-sided evaluation.** In June 2024 evaluation often stopped at "perfect competition can't keep profit, monopoly can"; ask whether a monopoly always makes supernormal profit.
- **Weak on consumer benefits of contestability** (November 2021): say what happens to prices and choice.

How to get the marks

- **Multiple choice:** sketch AR, MR, MC and AC and mark MC = MR before reading the options.
- **Definitions** earn AO1 marks: give the structure's features (number of firms, product, barriers, information).
- **Identify the structure first** in data response, then quote the extract for each feature.
- **Diagrams** earn marks for labelled axes (costs/revenue, output), every curve labelled (MC, AC, AR, MR), MC = MR marked with dashed lines to P and Q , the profit rectangle shaded and named, and MC through the lowest AC. Essays that need a diagram and lack one are held to Level 2. Refer to the diagram in your text.
- **"Explain"** (2–6 marks): point, then a chain of reasoning: feature → behaviour → result for price, output or profit.
- **"Consider", "assess" or "discuss"** (6–8 marks): both sides, each capped (often at 4), and a conclusion that follows from them.
- **20-mark essays:** Table A (14) rewards accurate definitions, diagrams used in the analysis and developed chains for **at least two** structures; Table B (6) rewards evaluation of the key words ("always", "only", "able to", "in the long run") and a justified conclusion. When a statement names one structure, the others are your evaluation.
- **Short run versus long run:** always say which you mean; most marks in this topic depend on what entry, exit and barriers do over time.

Quick check

1. A new airline wants to fly into a country, but every take-off and landing slot at its only international airport is already held by existing airlines. Which type of barrier to entry is this? **A** cost **B** legal **C** market **D** physical

2. Two phone makers, P and Q, each decide whether to run a big advertising campaign. Their monthly profits in \$m are (P's first): both advertise 6, 6; only P advertises 11, 3; only Q advertises 3, 11; neither advertises 9, 9. What is each firm's dominant strategy, what is the Nash equilibrium, and why might they agree to stop advertising?
3. A small bakery sells bread rolls at a price set by the market. For each price, the table gives its average variable cost (AVC) and average total cost (ATC) at the output where $MC = \text{price}$. For each case, say whether the bakery should keep producing in the short run and in the long run, and why.
- | Case | Price (\$) | AVC (\$) | ATC (\$) |
|------|------------|----------|----------|
| X | 1.40 | 1.00 | 1.60 |
| Y | 0.80 | 0.90 | 1.20 |
| Z | 2.00 | 1.20 | 1.80 |
4. The market shares (%) of the largest firms in an industry were: in 2023, firms A 26, B 21, C 14, D 9, E 7; in 2025, A 24, B 19, E 15, C 12, D 6. Calculate the 4-firm concentration ratio in each year and say what happened.
5. Explain why a firm in monopolistic competition makes only normal profit in the long run. **[4]**

Answers

1. **D.** The entrant is kept out by control of a scarce physical resource (the slots at the one airport), not by a law, a cost disadvantage or brand loyalty. (1)
2. If Q advertises, P earns 6 by advertising and 3 by not; if Q doesn't, P earns 11 by advertising and 9 by not. Advertising is better whatever Q does, so it is **P's dominant strategy**, and by the same reasoning Q's. The Nash equilibrium is **both advertise (6, 6)**. Neither can gain by changing alone (dropping to 3). Both would earn 9 if neither advertised, so they have a reason to agree to stop, but each could then earn 11 by breaking the agreement.
3. **X:** price \$1.40 covers AVC (\$1.00), so each roll adds \$0.40 towards fixed costs: **keep producing in the short run**; but it is below ATC (\$1.60), a loss of \$0.20 a roll, so **leave in the long run** unless the price rises. **Y:** price \$0.80 is below AVC (\$0.90), so producing loses more than closing: **shut down now**. **Z:** price \$2.00 is above ATC (\$1.80): supernormal profit of \$0.20 a roll, so **stay in both the short and the long run** (in perfect competition, entry would then push the price down).
4. 2023: $26 + 21 + 14 + 9 = 70\%$. 2025: the four largest are A, B, E and C: $24 + 19 + 15 + 12 = 70\%$. The ratio is **unchanged at 70%** (an oligopoly), but E has replaced D in the top four, a sign of real competition.
5. Monopolistic competition has free entry and many firms with similar, differentiated products (1). If firms make supernormal profit in the short run, new firms enter, taking customers from each existing firm (1), so each firm's demand (AR) shifts left and becomes more elastic (1). Entry stops when AR just touches AC at the profit-maximising output, so $AR = AC$ and only normal profit is made (1).

Past questions to try

- **9708/32/F/M/24 Q10:** recognising a Prisoner's Dilemma from a profit story.
- **9708/33/M/J/23 Q6:** which firms stay in the short run but leave in the long run.
- **9708/34/M/J/25 Q6:** reading market shares to judge market structure.
- **9708/41/O/N/25 Q3:** a 20-mark essay on whether barriers to entry alone decide competition.