Information and market power

IB DP Economics HL 2.10 asymmetric information and 2.11 market power, with the market structures

Information and market power

- explain **adverse selection** and **moral hazard**, and the responses to them;
- use revenue, cost and profit, and the MR = MC rule;
- analyse **perfect competition**, monopoly, monopolistic competition and oligopoly;

Information and market power (2)

- use **game theory** to explain **collusion** and price wars;
- evaluate government responses to market power.

Asymmetric information

- **Screening** : the side with less information collects it. Insurers ask for health checks; banks check credit scores.
- **Signalling** : the side with more information proves its quality. Sellers offer a **warranty** ; workers show qualifications.

Asymmetric information (2)

- **Government regulation** : rules that force sellers to tell the truth (food labels, car inspection reports), licences for doctors and lawyers, and compulsory insurance so the low-risk people stay in.
- **Contract design**: an **excess** (the insured person pays the first part of any claim) and no-claims discounts keep some risk with the insured, which reduces **moral hazard**.

Revenue, costs and profit

- **Total revenue** (TR) $= P \times Q$.
- **Average revenue** (AR) $= TR/Q$, which is the price. So the AR curve is the firm's demand curve.
- **Marginal revenue** (MR) is the extra revenue from selling one more unit.

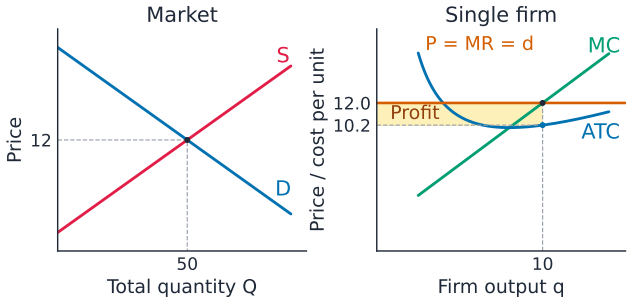
Revenue, costs and profit (2)

- **Marginal cost** (MC) is the extra cost of producing one more unit, and **average total cost** (ATC) is total cost $/Q$.
- **abnormal profit** : price above ATC ($P > ATC$);
- **normal profit**: price equal to ATC ($P = ATC$);

Revenue, costs and profit (3)

- **loss** : price below ATC ($P < ATC$).
- **Allocative efficiency** : $P = MC$. The value buyers put on the last unit equals the cost of making it, so society gets the right amount.
- **Productive efficiency** : the firm produces at the lowest point of its ATC curve, so nothing is wasted in production.

Figure: Revenue, costs and profit



- Market price becomes the firm's horizontal MR line; the profit rectangle uses ATC at the chosen output
- Match each part of the diagram to the text.

Perfect competition

- very many small firms and buyers;
- **homogeneous** (identical) products, such as one farmer's wheat and another's;
- no **barriers to entry** , so firms can enter or leave freely;
- perfect information for everyone.

Monopoly

- **economies of scale** : a big firm's low cost per unit means a small entrant cannot compete;
- legal barriers: **patents** , licences and copyrights;
- control of an essential resource, such as a mine or a port;

$$70 - Q = 10 + \frac{Q}{2} \quad \Rightarrow \quad 60 = 1.5Q \quad \Rightarrow \quad Q_m = 40$$

Monopoly (2)

- strong brands and heavy advertising;
- **network effects** : a platform is more useful when everyone else already uses it, as with social media and online shopping sites.
- The monopolist produces 20 fewer units and charges 10 more.

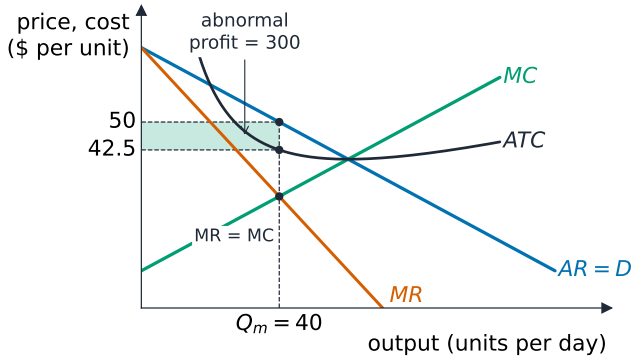
Monopoly (3)

- Consumers lose $(50 - 40) \times 40 = 400$ per day to the firm as a higher price.
- The units from 40 to 60 are not made, though buyers value them above their cost. This is the **deadweight loss** : $\frac{1}{2} \times (60 - 40) \times (50 - 30) = 200$ per day.
- **Economies of scale** can make costs so low that even the monopoly price is below what small competing firms could charge.

Monopoly (4)

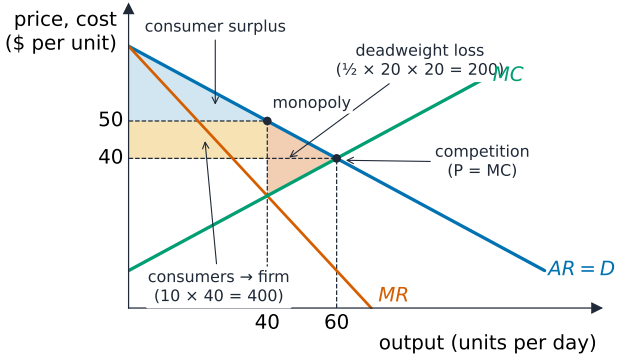
- **Abnormal profit** can pay for **research and development** (R&D): new medicines, phones and software often come from large, profitable firms. This is **dynamic efficiency** , improvement over time.
- A monopoly that is open to a world market may still face strong foreign competition.

Figure: Monopoly



- The monopolist produces where MR = MC and sets the price from the demand curve
- Match each part of the diagram to the text.

Figure: Monopoly ·



- Compared with competition, monopoly takes 400 from consumers and destroys 200 of welfare
- Read the axes and units first.

Monopolistic competition

- **Monopolistic competition** has many firms, low **barriers to entry** and **product differentiation**: each firm's product is a little different.
- Milk-tea shops, hair salons and restaurants are examples.
- Each firm has a few loyal customers, so it faces its own downward-sloping demand curve (d).
- But there are many close **substitutes**, so demand is quite elastic.

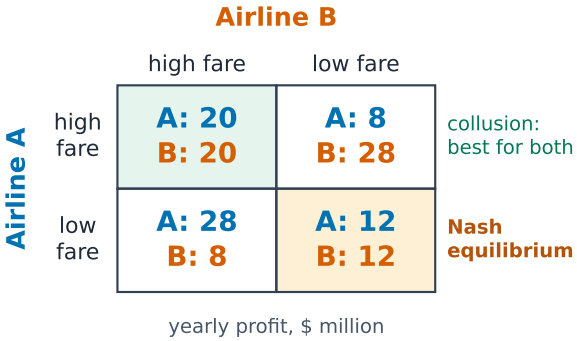
Oligopoly

- If B sets a high fare, A earns 20 with a high fare or 28 with a low fare. Low is better.
- If B sets a low fare, A earns 8 with a high fare or 12 with a low fare. Low is better again.
- **Collusion** : firms agree to limit output or fix prices, moving towards the monopoly outcome. A formal agreement is a **cartel** . OPEC, a group of oil-exporting countries, sets output targets for its members. Cartels between firms are illegal in most countries, including China.

Oligopoly (2)

- **Tacit collusion** : no agreement is made, but firms follow each other. One firm acts as **price leader** and the others copy its prices.
- **Non-collusive oligopoly**: firms compete. A **price war** can push prices close to cost. Because price cuts are quickly copied, most oligopolies prefer **non-price competition**: advertising, brands and new models.

Figure: Oligopoly



- Each airline does better with a low fare whatever the other does, so both end on 12
- Match each part of the diagram to the text.

Comparing the market structures

- **barriers to entry** rise, so **abnormal profit** can last longer;
- control over price grows, so price moves further above **marginal cost** and efficiency falls;
- but firms grow larger, so economies of scale and spending on research may rise.

Government responses to market power

- **Competition law** : bans cartels and the abuse of a dominant position, and can block **mergers** that would create too much power. In 2017 the European Commission fined Google 2.42 billion euros for favouring its own shopping service in search results.
- **Regulation**: price caps and quality targets for natural monopolies such as water and electricity.
- **Fines** that are large enough to make breaking the law unprofitable.

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Government responses to market power (2)

- **Government ownership** (nationalisation) of natural monopolies.
- **Trade liberalisation** : removing tariffs lets foreign firms compete with a domestic monopoly.

Sources for this lesson

- International Baccalaureate, *Economics guide* (first assessment 2022).
- G. Akerlof, "The Market for 'Lemons': Quality Uncertainty and the Market Mechanism", *Quarterly Journal of Economics* (1970).
- State Administration for Market Regulation (China), decision on Alibaba Group, 10 April 2021.
- European Commission, *Google Shopping* decision (27 June 2017).

Common errors

- Mixing up the timing: **adverse selection** happens **before** a contract, **moral hazard after** it.
- Drawing the MR curve with the same slope as demand; for a straight-line demand curve MR is twice as steep.
- Reading the monopoly price off the MC curve; it is read from the demand (AR) curve at the profit-maximising output.

Common errors (2)

- Saying a perfectly competitive firm makes **abnormal profit** in the long run; entry removes it.
- Calling any big firm a monopoly; check **barriers to entry** and **substitutes**.
- Ignoring the case for large firms (economies of scale, R&D) when evaluating market power.

Key terms

- **Asymmetric information**: one side of a deal knows more than the other.
- **Adverse selection**: hidden information before a contract drives good products or low-risk buyers out of a market.
- **Moral hazard**: after a contract, one side takes more risk because someone else bears the cost.

Key terms (2)

- **Barriers to entry**: obstacles that stop new firms entering a market.
- **Natural monopoly**: an industry in which one firm can supply the whole market at lower cost than two or more.
- **Nash equilibrium**: an outcome in which no player can gain by changing their choice alone.

Check yourself

- 1.
- Explain why, in Akerlof's used-car market, good cars leave the market. 2.
- Give one example of **moral hazard** and one response to it. 3.
- A firm faces $P = 70 - Q/2$.