



AQA A Level Economics



Your notes

5. Perfect & Imperfectly Competitive Markets & Monopolies

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Your notes

Market Structures

Characteristics of Market Structures

- **Market structures** are the **characteristics of the market** in which a firm or industry operates
 - These characteristics typically include:
 - The number of buyers
 - The number and size of firms
 - The type of product in the market (**homogenous** or **differentiated**)
 - The types of **barriers to entry** and exit
 - The degree of competition between the firms in the market
- Market structures can be separated into **perfect competition** and **imperfect competition**
- **Imperfect competition** includes the following market structures:

1. Monopolistic

- A market structure is one in which there are **many firms offering a similar product** but with some product differentiation, e.g nail salons

2. Oligopoly

- A market structure in which a few large firms dominate the industry, with each firm having significant market power

3. Monopoly

- A market structure in which there is a single supplier of a particular product and has the power to influence the market supply and price

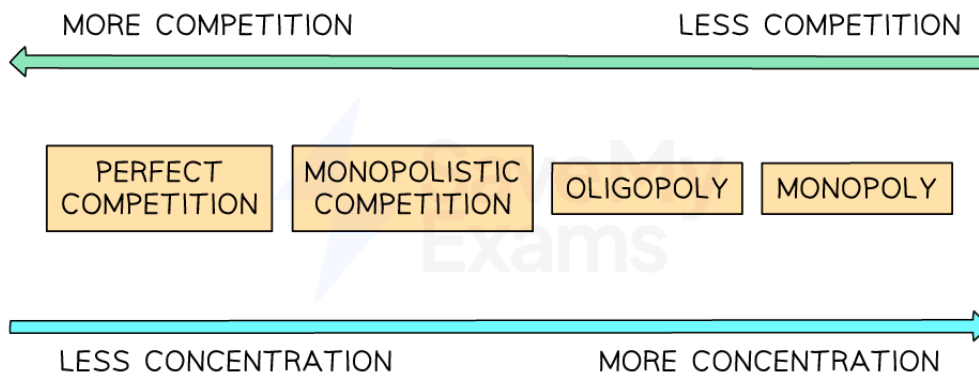
The Spectrum of Competition

- **Market failure** can be caused **through the abuse of market power**
- **Signs of market failure include**
 - The ability of suppliers to have control of prices
 - The ability of suppliers to restrict output in a market so as to raise prices
 - A lack of **allocative efficiency**



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- A lack of **productive efficiency**
- **Governments often regulate markets** and intervene to prevent or reduce the **abuse of market power** through antitrust laws (anti-monopoly) or competition policy
- **Market power** refers to the ability of a firm to influence and control the conditions in a specific market, allowing them to have a significant impact on **price, output**, and other market variables
- Market power allows a firm to set prices **above the competitive level** or **restrict output**
- Market power can be measured using indicators like **market share, concentration ratios**, or **barriers to entry**
 - A higher market share or concentration ratio suggests a **greater degree of market power**



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The level of market power changes for each market structure

- The closer a firm is to **being a monopoly**, the **higher** the **concentration ratio, market share** and market power
 - **Competition is greatly diminished** and the benefits of competition are likely to be lost
- The closer a firm is to **being perfectly competitive**, the **lower** the concentration ratio, market share and market power
 - **Competition is enhanced** and the significant benefits of competition are likely to be gained
- It is important to distinguish between **market power and market competition**
 - In **competitive markets**, no single firm has substantial market power, and prices and outputs are determined by the **forces of supply and demand**

- In **markets with limited competition** or where firms have significant market power, **market outcomes can deviate** from the ideal of perfect competition



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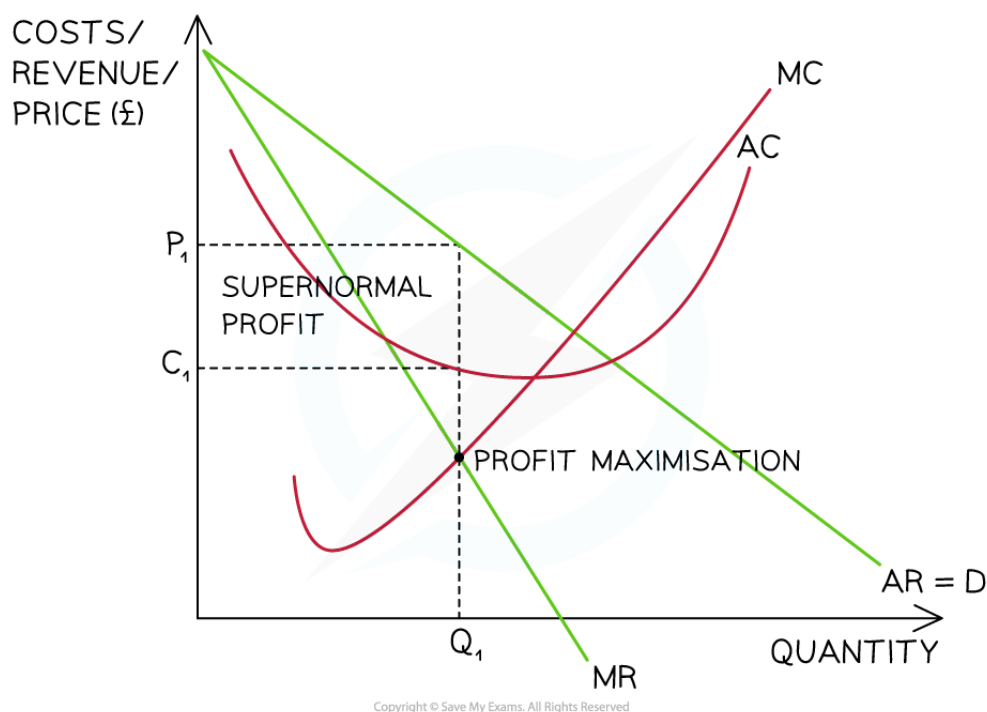
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The Objectives of Firms

Profit Maximisation

- Most firms have the **rational** business objective of **profit maximisation**
 - Profits benefit shareholders as they receive **dividends** and also increase the underlying share price
 - An increase in the underlying share price increases the **wealth** of the shareholder
- To achieve profit maximisation, firms should follow the **profit maximisation rule**
 - When **marginal cost (MC) = marginal revenue (MR)** then no additional profit can be extracted by producing another unit of output
 - When $MC < MR$ additional profit can still be extracted by producing an additional unit of output
 - When $MC > MR$ the firm has gone beyond the profit maximisation level of output
 - It is making a marginal loss on each unit produced beyond the point where **MC = MR**
- In reality, firms may find it difficult to produce at the **profit maximisation level of output**
 - They may not know where this level is
 - In the short term, they may not adjust their prices if the **marginal cost** changes
 - Marginal costs can change regularly and **regular price changes** would be disruptive to customers
 - In the long- term, firms will seek to **adjust prices** to the profit maximisation level of output
- Firms may be forced to change prices by the **competition regulators in their country** (especially natural monopolies)
 - The profit maximisation level of output often results in **high prices** for consumers
 - Changing prices changes the **marginal revenue**

Diagram: The Profit Maximising Level of Output



The profit maximisation level of output occurs at Q_1 where $MC = MR$ resulting in a market price of P_1

Diagram analysis

- This firm has **market power** as the MR and **average revenue (AR)** curve are downward sloping
- At the profit maximisation level of output ($MC = MR$)
 - The selling price is P_1
 - The average cost is C_1
 - The **supernormal profit** = $(P_1 - C_1) \times Q_1$



Examiner Tips and Tricks

Profit maximisation is all about the quantity of output.

To determine the level of profit:



Your notes

1. identify where $MC = MR$ and then **extend the dotted line upwards** to the point where it hits the AR curve – this is your selling price
2. Where this line crosses the **average cost curve (AC)** represents the cost per unit at this level of output
3. The profit is the difference between the selling price and the average cost

Evaluating Profit Maximisation as a Business Objective

- Apart from the very significant advantages that are offered by pursuing profit maximisation, there are some distinct disadvantages too

The Advantages & Disadvantages of Pursuing Profit Maximisation

Advantages	Disadvantages
<ul style="list-style-type: none"> ▪ Financial Stability and Growth Maximising profits allows businesses to accumulate capital, reinvest in growth opportunities, and withstand economic uncertainties ▪ Shareholder Value Creation By focusing on profit maximisation, companies can enhance shareholder value, attract new investors and maintain their competitiveness in the market ▪ Resource Allocation Efficiency Businesses are incentivised to allocate resources efficiently, which can lead to improved productivity and cost control 	<ul style="list-style-type: none"> ▪ Ethical and Social Concerns Focusing on profit maximisation can result in actions that disregard the well-being of employees, communities, and the environment (negative externalities) ▪ Risk of Neglecting Non-Financial Metrics Important factors like employee satisfaction, customer loyalty, product quality, and environmental sustainability may be neglected if they are not directly tied to immediate profit generation ▪ Short term profits versus long term value creation Extracting the highest level of short term profits will often detract from future value creation through research or innovation

Alternative Business Objectives

- The firm can have objectives other than profit maximisation. These are the **reason for their existence** or the desired focus of their owners

1. Growth

- Some firms have the business objective of **growth**



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- A firm growth can be calculated by using the number of employees, market share, size of profits & market capitalisation
- Firms with a growth objective often focus on increasing their **sales revenue** or **market share**
- Firms will also **maximise revenue** in order to increase output & benefit from **economies of scale**
- A growing firm is **less likely to fail**

2. Survival

- In the short term, many new firms focus solely on **business survival**
- Generally, as much as **25% of new firms fail** in their first year of business
- Once a firm is established, it may then begin to focus on **profit maximisation** as its new objective

3. Social Welfare

- More firms than ever are launching with a **social welfare objective**
 - These typically include a focus on **climate action & addressing poverty or inequality**
- They still **require profit to survive**, but will accept less than if they were profit maximising as long as they are meeting their social objective

4. Satisficing

- Firms can opt to make a **satisfactory level of profit** and not seek to maximise profits
- They may aim to make enough money to keep the owner/shareholders happy
 - E.g a small family owned business may make enough profits to support the family but not pursue more profits. Satisficing can allow firms time to **pursue other objectives**, such as leisure or a better work-life balance



Examiner Tips and Tricks

The objectives of firms can change over time. Successful firms that have been profit maximising for decades may find themselves in a difficult market environment (e.g. during Covid 19 lock downs) and switch their objective to survival. Likewise, firms previously focused on profit maximisation may desire to be more prominent in the battle against climate change & so change to a social welfare objective.

Divorce of Ownership from Control



Your notes

- **Divorce of ownership from control** occurs when there is a clear split between the ownership of firm and those who run the business on a day-to-day basis
 - It usually occurs in **larger firms** where there is a distinction between ownership and management
- The separation of ownership from control is linked to the **principal-agent problem**
 - Firm owners, such as shareholders (**principals**), appoint managers (**agents**) to make decisions and represent their interests. Managers may have differing goals and motivations, leading to **conflicts of interest**

Examples of Divorce of Ownership of Control

Example	Explanation
Public limited companies	<ul style="list-style-type: none"> ▪ A board of directors or executives are responsible for decision-making in public traded companies ▪ A shareholder owns part of business but usually lacks influence over business decisions ▪ Conflicts of interest may arise if shareholders prioritise profit maximisation while the board of directors prioritise other goals, such as maximising sales growth
Family businesses	<ul style="list-style-type: none"> ▪ Not all family members are involved in daily management ▪ Control rests with a small group of family members or non-family executives who manage operations ▪ Conflicts of interest may arise if some family members aim to pursue objectives such as long term stability and family values while other members aim to pursue profit maximisation



Your notes

Perfect Competition

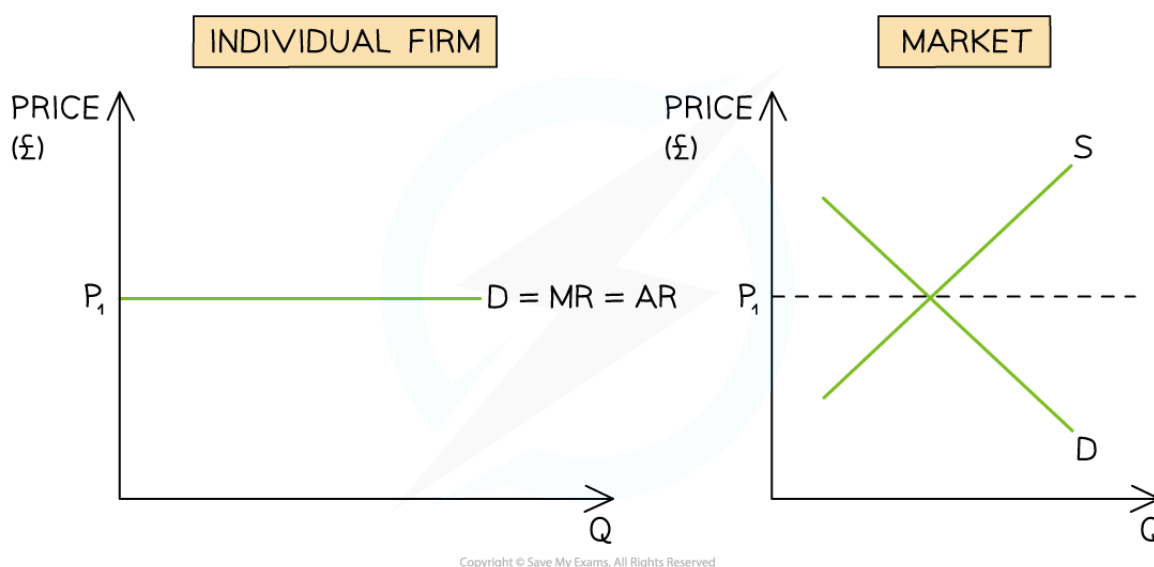
Characteristics of Perfect Competition

- The characteristics of **perfect competition** are as follows
 1. **There are many buyers and sellers:** due to the number of market participants sellers are **price takers**
 2. **There are no barriers to entry and exit** from the industry: firms can start-up or leave the industry with relative ease which increases the level of competition
 3. **Buyers & sellers possess perfect knowledge of prices:** this assumption presupposes perfect information e.g if one seller lowers their price then all buyers will know about it
 4. **The products are homogenous:** this means firms are unable to build brand loyalty as perfect substitutes exist and any price changes will result in losing customers

Perfectly Competitive Firms are Price Takers

- Firms in perfect competition **have low market power, low market share** and a low industry **concentration ratio**
- There is little market failure in **perfectly competitive industries**
 - This is why governments try to encourage more competition in every sector in their economy

Diagram: Individual Firm and Market in Perfect Competition



An individual firm in perfect competition has to accept the market/industry price (P_1)

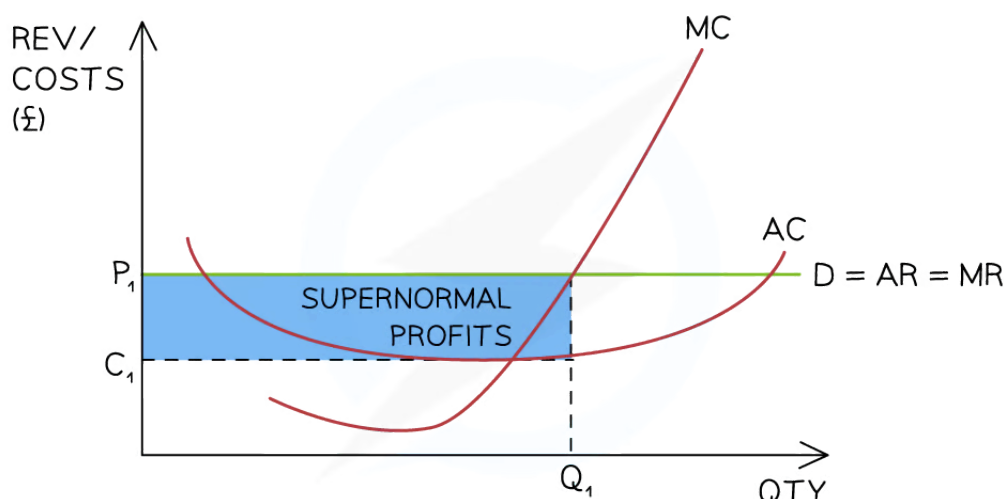
Diagram analysis

- In order to **maximise profit**, firms in perfect competition produce up to the level of output where **marginal cost = marginal revenue** ($MC=MR$)
- The firm does not have any **market power** so it is unable to influence the price and quantity
 - The firm is a **price taker** due to the large number of sellers
 - The firm's **selling price** is the same as the market price, $P_1 = MR = AR = \text{Demand}$

Perfect Competition in the Short-run

- Firms in **perfect competition** are able to make **abnormal profit** in the **short-run**
 - A seller may gain a competitive advantage for a short period of time, which allows them to make abnormal profit

Diagram: A Firm in Perfect Competition Making Abnormal Profit



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This firm is making abnormal profit in the short-run as the $AR > AC$ at the profit maximisation level of output (Q_1)

Diagram analysis



Your notes



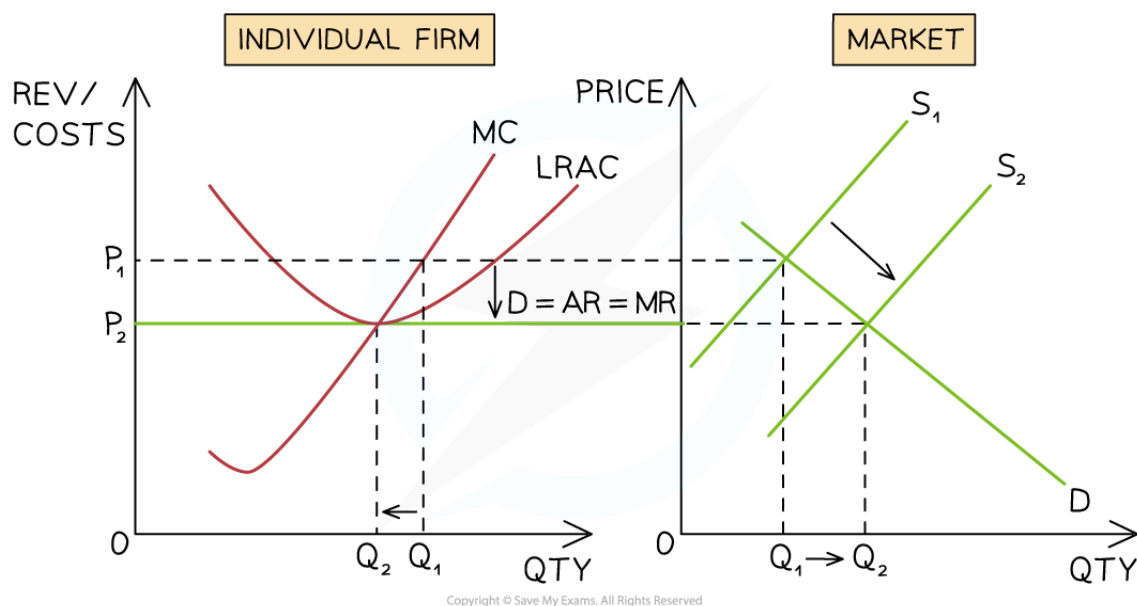
Your notes

- The marginal cost curve (MC) is the **supply curve** of the firm
- The firm is producing at the **profit maximisation level of output**, where $MC = MR (Q_1)$
 - At this point, $AR (P_1) > AC (C_1)$
 - The firm is making **abnormal profit** $= (P_1 - C_1) \times Q_1$

Abnormal Profit is Eliminated in the Long-run

- If firms in **perfect competition** make **abnormal profit** in the **short-run**, new firms are attracted to the industry
 - They are **incentivised** by the opportunity to make abnormal profit
 - There are no **barriers to entry**
 - It is easy to join the industry

Diagram: Abnormal Profits are Eliminated in Long-run



New entrants shift the industry supply curve to the right ($S_1 \rightarrow S_2$) which changes the industry price from $P_1 \rightarrow P_2$. The firm can now only sell its products at P_2

Diagram analysis

- The firm is initially producing at the **profit maximisation level of output**, where $MC = MR (Q_1)$



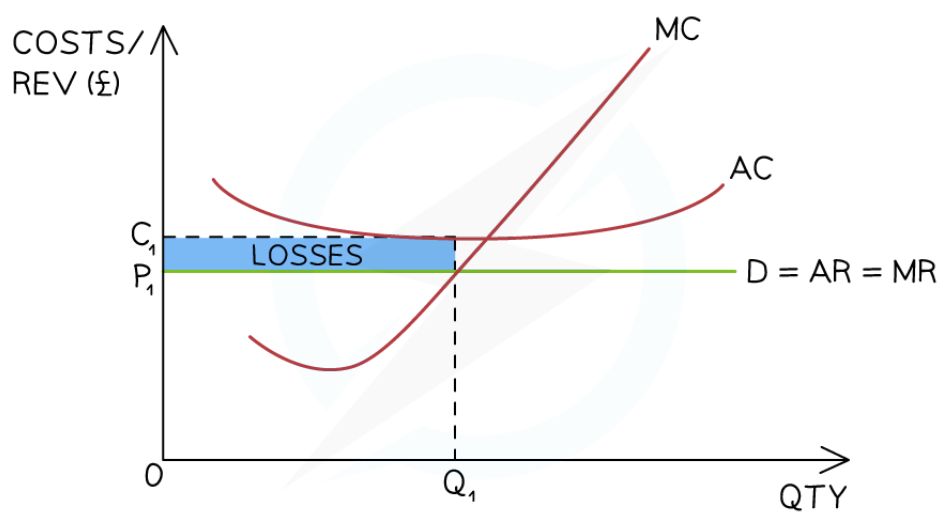
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- At this level of output, $AR(P_1) > AC(P_2)$ and the firm is making **abnormal profit**
- **Incentivised by profit**, new firms join the industry and **supply increases from $S_1 \rightarrow S_2$**
 - Overall quantity in the industry increases from $Q_1 \rightarrow Q_2$
 - The **industry price falls** from $P_1 \rightarrow P_2$
- The firm has to now sell its products at the industry price of P_2
 - The **output of the firm falls** from $Q_1 \rightarrow Q_2$ as it now has a **smaller market share** of the larger industry
- At the profit maximisation level of output ($MC=MR$) the firm is now producing at the point where $AR=AC$
 - The firm is making **normal profit**
- **In the long-run**, firms in **perfect competition** always make **normal profit**
 - Firms making a **loss** leave the industry
 - Firms making **abnormal profit** see them slowly **eradicated** as new firms join the industry

Short-run Losses in Perfect Competition

- Firms in **perfect competition** are able to make **losses** in the **short-run**
 - Periods of intense competition can cause prices to fall below the average costs
 - New firms may enter the industry. This results in the **market share being divided up between more competitors** and some individual firms may start making a loss

Diagram: A Loss Making Perfectly Competitive Firm



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This firm is making losses in the short-run as the $AR < AC$ at the profit maximisation level of output (Q_1)

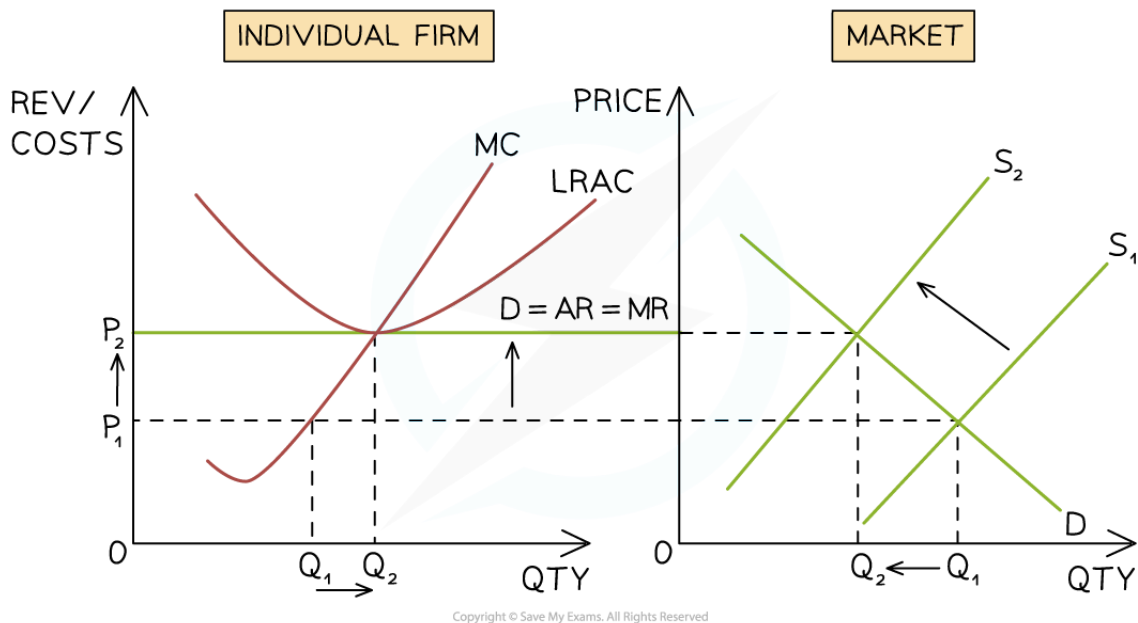
Diagram analysis

- The firms are producing at the **profit maximisation level of output**, where $MC = MR$ (Q_1)
 - At this level of output, the AR (P_1) $<$ AC (C_1)
 - The firm's loss is equivalent to $(P_1 - C_1) \times Q_1$

Losses are Eliminated in the Long-run

- If firms in **perfect competition** make losses in the **short-run**, some will shut down
 - The **shut down rule** will determine which firms shut down
 - There are no **barriers to exit**, so it is easy to leave the industry

Diagram: Losses are Eliminated in Long-run



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Firms leaving the industry shift the industry supply curve to the left ($S_1 \rightarrow S_2$) which changes the industry price from $P_1 \rightarrow P_2$. Remaining firms can now sell products at P_2 which returns it to a position of normal profit



Your notes



Your notes

Diagram analysis

- The firm is initially producing at the **profit maximisation level of output**, where $MC=MR (Q_1)$
 - At this level of output, the $AR (P_1) < AC (C_1)$ and the firm is making a loss
- Some firms leave the industry, and **supply decreases from $S_1 \rightarrow S_2$**
 - Overall quantity in the industry **falls from $Q_1 \rightarrow Q_2$**
 - The **industry price increases** from $P_1 \rightarrow P_2$
- The firm now has to sell its products at the industry price of P_2
 - The **output of the firm increases** from $Q_1 \rightarrow Q_2$ as it now has a **larger market share** of the smaller industry
- At the **profit maximisation level of output ($MC=MR$)** the firm is now producing at the point where $AR=AC$
 - The firm is making **normal profit**
- **In the long-run**, firms in **perfect competition** always make **normal profit**
 - Firms making a **loss** leave the industry
 - Firms making **supernormal profit** see them slowly **eradicated** as new firms join the industry

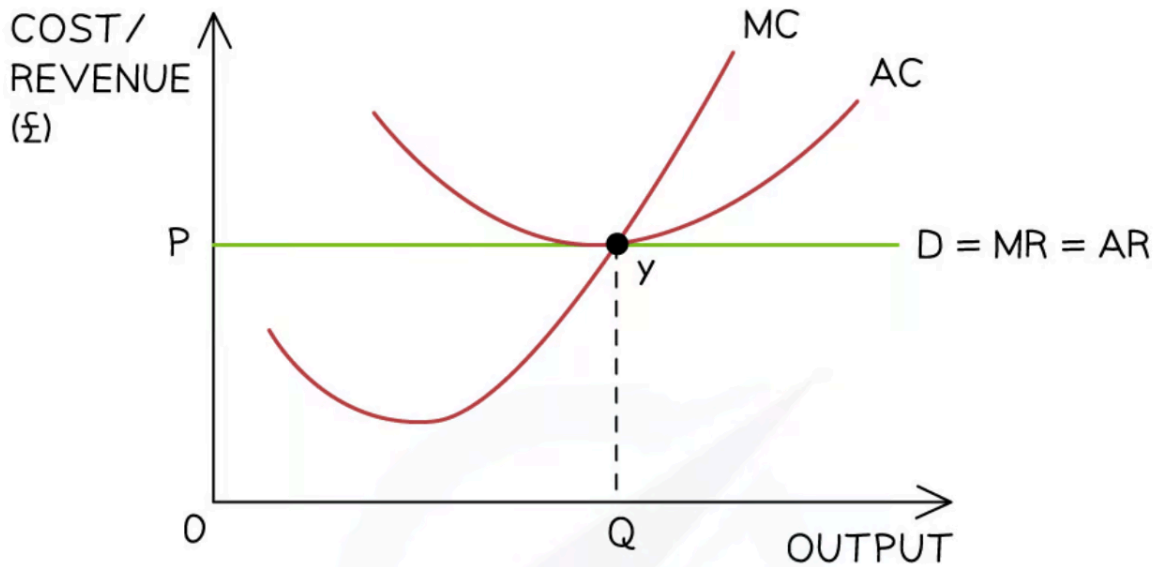
Efficiency in Perfect Competition

- Allocative efficiency occurs at the level of output where average revenue = marginal cost ($AR = MC$)
 - At this point, **resources are allocated** in such a way that consumers & producers get the **maximum possible benefit**
 - **No one can be made better off** without making someone else worse off
 - There is **no excess** demand or supply
- Productive efficiency occurs at the level of output where marginal cost = average cost ($MC=AC$)
 - At this point **average costs are minimised**
 - There is **no wastage** of scarce resources & a high level of factor productivity

Diagram: Efficiency in Perfect Competition



Your notes



A perfectly competitive market benefits from both productive and allocative efficiency in the long-run

Diagram Analysis

- The firm produces at the **profit maximisation level** of output where $MC=MR$ (Y)
- The firm is **productively efficient** as $MC=AC$ at this level of output
- The firm is **allocatively efficient** as $AR(P)=MC$

Critical Analysis of Perfect Competition

- Perfect competition is a **theoretical** market structure
 - It does provide a useful **benchmark for evaluating efficiency** for real-world market structures, e.g. monopolies and oligopolies
- Perfectly competitive markets has an efficient allocation of resources where resources are allocated to their most valued uses
 - In reality, most firms **do not allocate resources** in the most optimal way in a **free market**
 - Firms may not aim to be allocatively and productively efficient. They may focus on short-term gains instead

Example: Water privatisation



Your notes

- Following the **privatisation** of the water industry in the UK in 1989, huge **inefficiencies** arose
- Under private ownership, the main objective of these water companies was to earn **short-term profits**
 - **Dividends** increased for shareholders of water companies
- This led to significant **underinvestment** in infrastructure and maintenance of water supply systems
 - This led to **productive inefficiency**, as deferred maintenance led to the deterioration of infrastructure over time. This caused inefficiencies such as leaks, bursts, and service disruptions
 - It also led to **allocative inefficiency** as the best interest for consumers and society's welfare declined with fall in water quality and service
- The end result of many privatisations (water, electricity, gas, and rail) suggests that free markets do not always achieve efficient **resource allocation**
 - This almost always means that privatised firms need to be **regulated** to ensure efficiency is closer to the standard held by perfect competition
- It could be strongly argued that higher efficiencies would be **achieved under government ownership**



Examiner Tips and Tricks

You should look to demonstrate your awareness that perfect competition, in both product and labour markets, provides a benchmark for judging the extent to which real world markets perform efficiently or inefficiently. This then leads to judgements about the extent to which a misallocation of resources has occurred.

Wherever relevant, critically assess the proposition that perfectly competitive markets lead to an efficient allocation of resources.



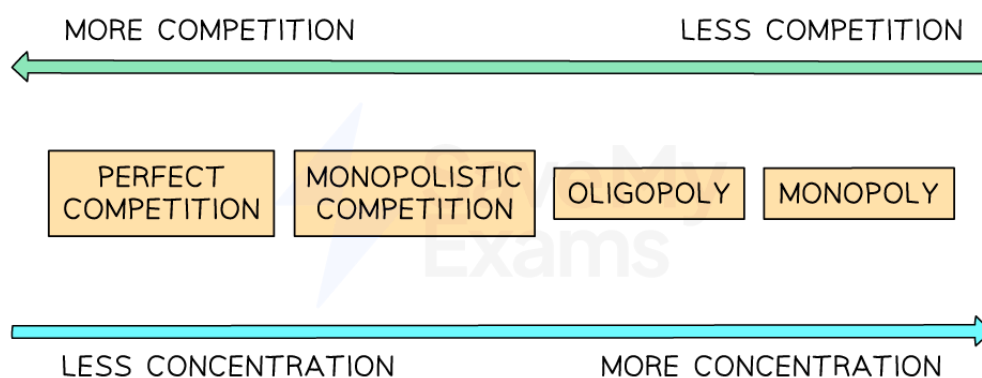
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Monopolistic Competition

Characteristics of Monopolistically Competitive Markets

- A monopolistic market structure is one in which there are many **firms offering a similar product** but with **some product differentiation**
- Examples include
 - Nail salons, hairdressing or barber shops, massage parlours, fruit and vegetable stores

Diagram: Monopolistic Competition



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Monopolistic competition should not be confused with a monopoly. As a market structure, it sits closer to perfect competition

Characteristics of Monopolistic Competition

Characteristic	Explanation	Characteristic	Explanation
Nature of the product	<ul style="list-style-type: none"> ▪ The products are slightly differentiated ▪ This structure exists as consumers have different desires 	Degree of efficiency	<ul style="list-style-type: none"> ▪ More competition pushes the firm to better efficiency ▪ Allocative efficiency in the



Your notes

	<ul style="list-style-type: none"> E.g. Two nail bars differentiate their product through express or pampered service - a relatively homogenous product has now been differentiated 		long-run
Customer loyalty	<ul style="list-style-type: none"> Relatively low due to number of substitutes However, can also be relatively strong based on client/customer relationship, e.g loyalty to a specific hairdresser 	Type of profit	<ul style="list-style-type: none"> Can be abnormal in the short-run Normal (breakeven) in the long-run
Price taker or maker?	<ul style="list-style-type: none"> Some price setting ability 	Level of market power	<ul style="list-style-type: none"> There is a low degree of market power
Barriers to entry	<ul style="list-style-type: none"> There are low barriers to entry and exit from the industry Firms can start-up or leave the industry with relative ease, which increases the level of competition 	Slope of the demand curve	<ul style="list-style-type: none"> Shallow (elastic) Same shape as monopoly revenue curves, but those are steeper (more inelastic)
Number of firms	<ul style="list-style-type: none"> There are a large number of small firms Each one is relatively small and can act independently of the market 		

Short-run Abnormal Profits in Monopolistic Competition

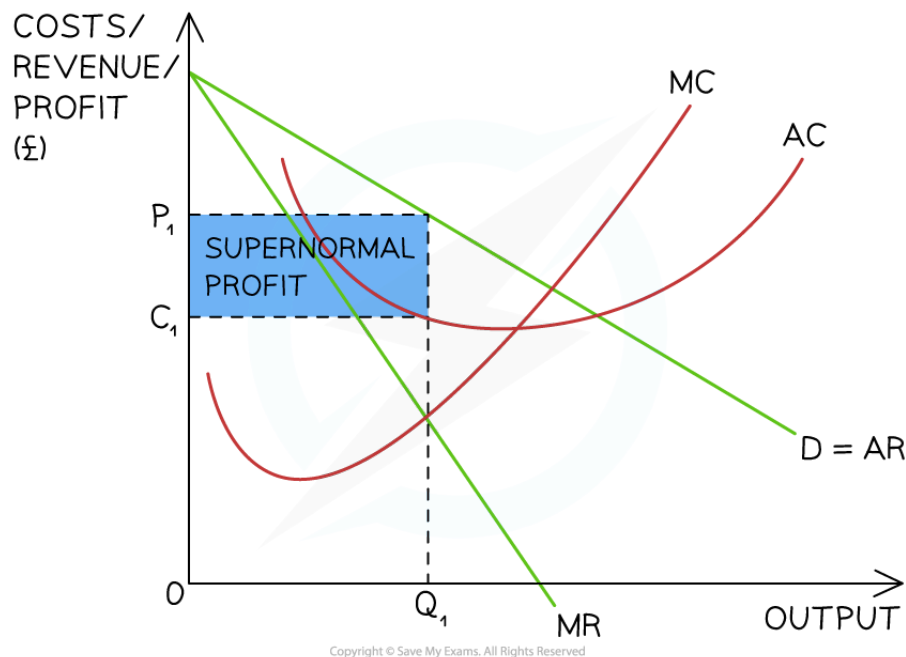
- In order to **maximise profit**, firms in monopolistic competition produce up to the level of output where **marginal cost = marginal revenue** ($MC=MR$)
- The firm can make **abnormal profit** in the short-run



Your notes

- The **average revenue (AR) curve** is the **demand curve** of the firm and it is downward sloping
 - The firm has some **market power** due to the level of **product differentiation** that exists
 - To sell an additional unit of output, the firm will have to decrease its price
 - The **marginal revenue (MR)** curve will fall twice as quickly as the average revenue curve (AR)
- A very good example of how this occurs can be seen in the **barber shop industry**
 - Innovators may offer unique features such as free espressos, or child care while you wait
 - This permits them to charge higher prices until such a point as competitors copy their innovative actions
 - Their abnormal profit will then be eroded

Diagram: Short-run Profits for a Monopolistically Competitive Firm



Firms can make supernormal profits in the short-run as the $AR > AC$ at the profit maximisation level of output (Q_1)

Diagram analysis

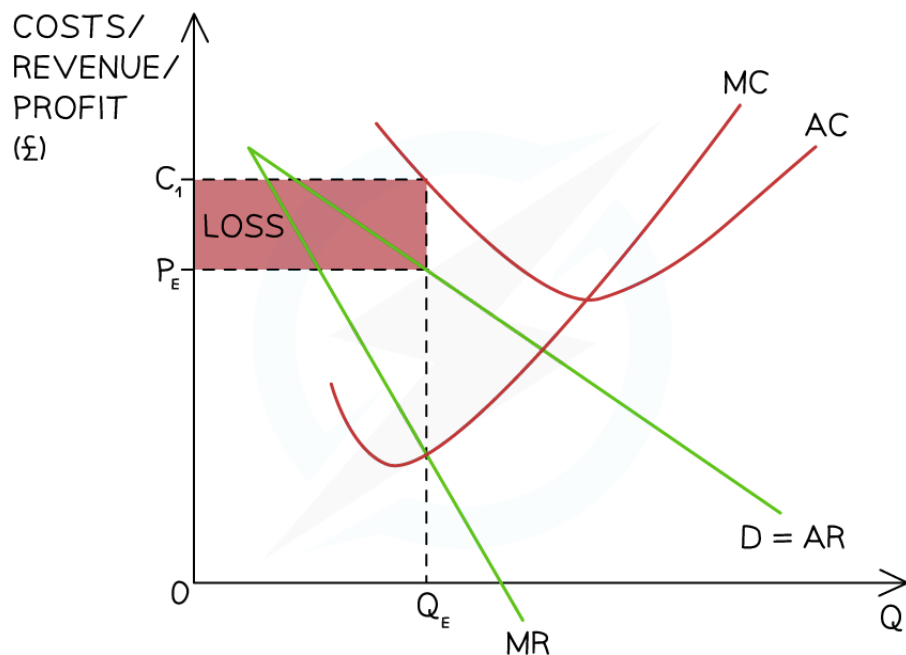
- The firm produces at the **profit maximisation level of output**, where $MC = MR (Q_1)$
 - At this level, $AR (P_1) > AC (C_1)$

- The firm is making **abnormal profit** = $(P_1 - C_1) \times Q_1$

Short-run Losses in Monopolistic Competition

- Firms in **monopolistic competition** are able to make **losses** in the **short-run**

Diagram: Short-run Losses in Monopolistic Competition



Short-run losses occur as $AR (P_E) < AC$ at the profit maximisation level of output (Q_E)

Diagram analysis

- The firm produces at the **profit maximisation level of output**, where $MC = MR (Q_E)$
 - At this level of output, the $AR (P_E) < ATC (C_1)$
 - The firm's loss is = $(P_E - C_1) \times Q_E$

Long-run Normal Profit in Monopolistic Competition

From Abnormal to Normal Profit

- If firms in **monopolistic competition** make **abnormal profit** in the **short-run**, new entrants are attracted to the industry, and the number of sellers increases



Your notes



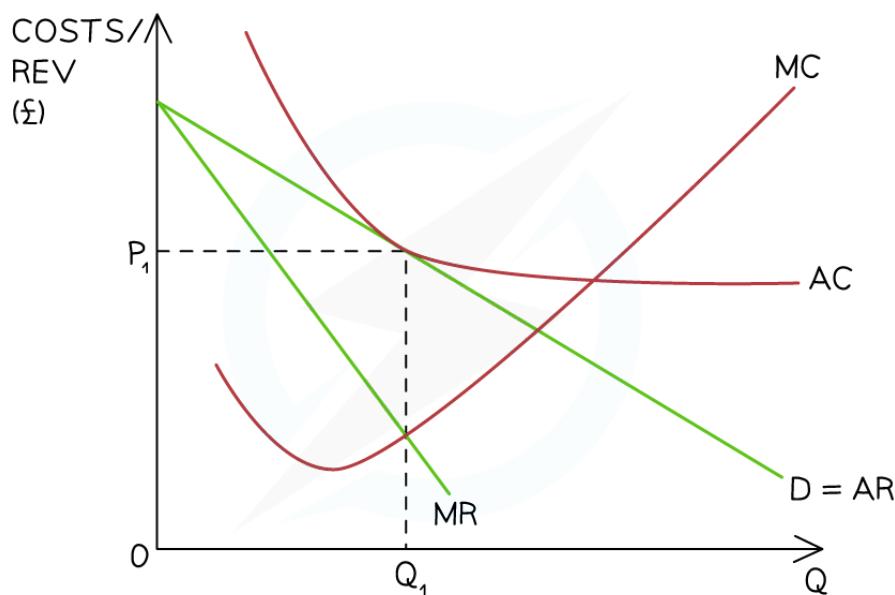
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- They are **incentivised** by the opportunity to make supernormal profit
- There are low **barriers to entry** and It is easy to join the industry
- **Abnormal profit will be eroded**, and the firm will return to the long-run equilibrium position of making normal profit

From Losses to Normal Profit

- If firms in **monopolistic competition** make losses in the **short-run**, some will shut down
 - The **shut down rule** will determine which firms shut down
 - There are low **barriers to exit**, so it is easy to leave the industry
- **For the remaining firms, losses will be eliminated**, and the firm will return to the **long-run equilibrium** position of making **normal profit**

Diagram: Long-run Equilibrium for a Monopolistically Competitive Firm



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The firm is making a normal profit. $AR(P_1) = AC$ at the profit maximisation level of output (Q_1)

Diagram analysis

- The firm is producing at the **profit maximisation level of output**, where $MC = MR(Q_1)$
- At this level of output, $P_1 = AC$ and the firm is making normal profit
- **In the long-run**, firms in **monopolistic competition** always make normal profit

- Firms making a **loss** leave the industry
- Firms making **supernormal profit** see it slowly **eradicated** as new firms join the industry

Non-Price Competition

- Firms competitive monopolistic markets engage in a wide range of **non-price competition** strategies
- The aim is to increase **product differentiation**, develop or increase **brand loyalty** and increase **market share**

Non-Price Competition Strategies in Monopolistic Markets

Strategy	Explanation
Location	<ul style="list-style-type: none"> ▪ Businesses can position shop in areas of high consumer traffic, convenience, and visibility <ul style="list-style-type: none"> ▪ This increases accessibility and attracts potential customers ▪ E.g setting up a nail bar in a busy shopping district
Quality & customer focus	<ul style="list-style-type: none"> ▪ Delivering quality services, personalised consultations and tailored treatments to meet the unique needs and preferences of customers <ul style="list-style-type: none"> ▪ E.g beauty salons give each customer a personalised experience
Shop environment	<ul style="list-style-type: none"> ▪ Businesses can invest in visually appealing shop fronts and environments to differentiate from other businesses <ul style="list-style-type: none"> ▪ E.g Bars using stylish decor, comfortable seating and good music to attract customers
Owner personality & store image	<ul style="list-style-type: none"> ▪ Using personal expertise of owner to establish a distinct identity and build a loyal customer base <ul style="list-style-type: none"> ▪ E.g The owner of an organic bakery can deliver knowledge of nutrition using social media to cultivate image and attract customers
Word of mouth advertising	<ul style="list-style-type: none"> ▪ Businesses can ask customers to spread positive reviews and recommendations <ul style="list-style-type: none"> ▪ E.g before-and-after transformations on social media, or asking for customer feedback for online



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Local marketing initiatives

- Local businesses can **sponsor** local clubs to create brand visibility for local customer base
 - E.g Paying for branded jerseys for local football club



Your notes



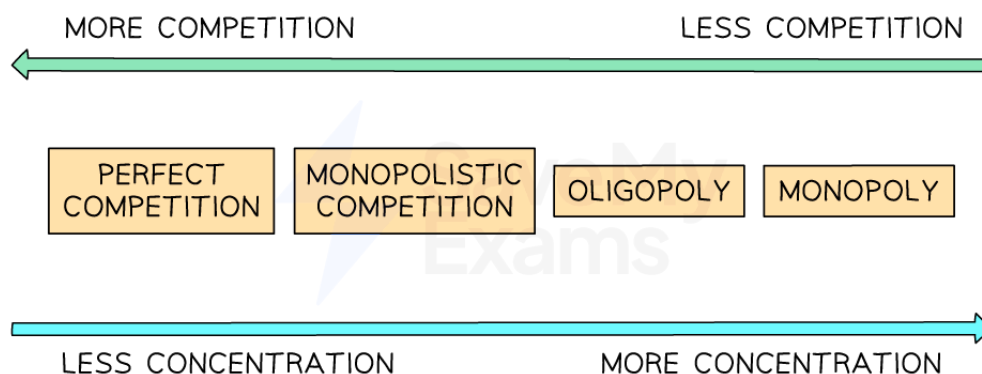
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Oligopoly

Characteristics of Oligopolistic Markets

- An oligopoly is a market structure in which a **few large firms** dominate the industry with each firm having significant **market power** and the **concentration ratio** of the top 5 firms is usually high
 - E.g. Banks, insurance companies, department stores, supermarkets, petrol retailers, sport stores etc.

Diagram: The Level of Market Power in an Oligopoly



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Firms in an oligopoly market experience a higher degree of market power and the market share is more concentrated

Characteristics of an Oligopoly Market

High Barriers to Entry & Exit	High Concentration Ratio
<ul style="list-style-type: none"> Entering the industry is difficult due to the existing dominance of relatively few firm Start-up costs tend to be high e.g. setting up a renewable energy company costs billions Leaving the industry is difficult due to the high level of sunk costs e.g. mobile phone companies 	<ul style="list-style-type: none"> A concentration ratio reveals what percentage of the total market share a specific number of firms have A 10-firm concentration ratio reveals the total market share (concentration) of the top 10 firms in the industry



are bidding billions on 5G auctions run by the government, and they cannot recoup this money if they leave the industry	<ul style="list-style-type: none"> A 5-firm concentration reveals the total market share (concentration) of the top 4 firms in the industry The higher the value and the lower the number of firms, the more concentrated the market power in the industry, e.g. the UK supermarket's 5-firm concentration ratio is constantly around 67%
Interdependence of Firms	Product Differentiation
<ul style="list-style-type: none"> With relatively few competitors, firms study each other's behaviour and are highly interdependent in their actions This interdependence generates the use of game theory There is a strong incentive to collude, as this will lead to greater profits There is little incentive to compete on price, as this does not change each firm's market share by much and lowers profits 	<ul style="list-style-type: none"> Products tend to be highly differentiated Occasionally, products are similar (e.g. petrol). However, the brand around the product is highly differentiated to the point where consumers perceive it as different and are extremely brand loyal

Concentration Ratios

- Concentration ratios reveal what percentage of the total market share a specific number of firms have, e.g. the five-firm concentration ratio reveals the market share of the top five firms in the industry
 - The most commonly used ones in the UK are the five-firm, ten-firm, and twenty-firm concentration ratios
- A **five-firm concentration ratio** of around 60% is considered to be an **oligopoly**
- A one-firm concentration ratio of 100% would be a **pure monopoly**
 - Many government regulators define a monopoly as a firm with more than 25% market share
 - They act to prevent **mergers or acquisitions** from taking place, which would give one firm more than 25% of the market share





Your notes

Worked Example

The following table shows the value of UK supermarket sales for the 3 months to March 31st, 2022.

Calculate the five-firm concentration ratio. Show your working.

Company	Value of Sales (£ million)	Company	Value of Sales (£ million)
Tesco	136.5	Waitrose	24
Morrisons	55	Asda	77.5
The Co-operative	30	Lidl	33
Sainsbury's	75	Iceland	15
Aldi	44	Others	10

Step 1: Identify the top five firms by value of sales and add the value of their sales together

Tesco (136.5) + Asda (77.5) + Sainsbury's (75) + Morrisons (55) + Aldi (44)

= 136.5 + 77.5 + 75 + 55 + 44

= £ 388 million

Step 2: Calculate the percentage of total sales of the top five firms

$$\frac{388}{500} \times 100$$

= 77.6%

The Distinction Between Collusive & Non-collusive Oligopolies

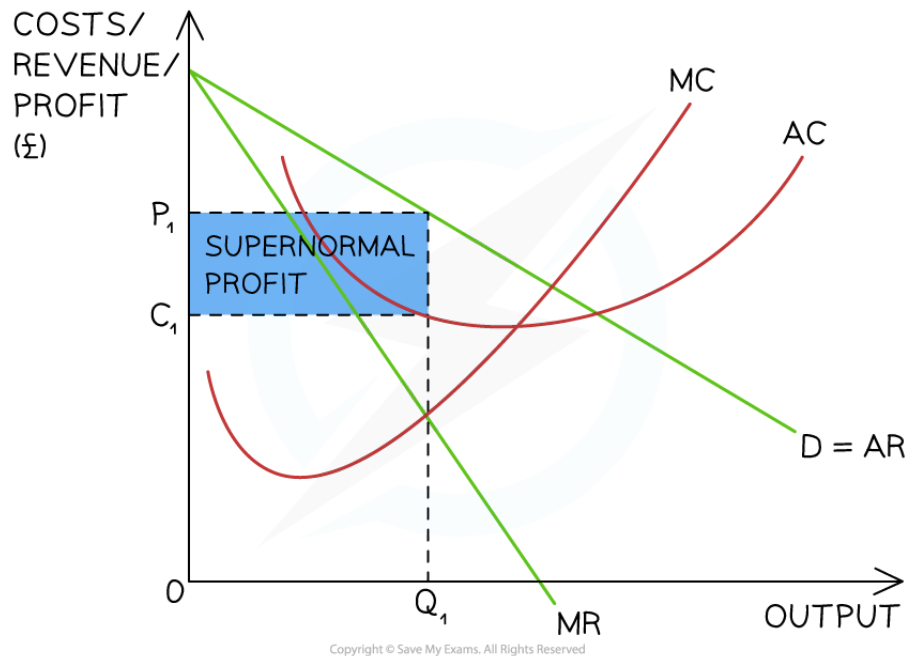
- **Collusive behaviour** in oligopolies occurs when firms cooperate to **fix prices and restrict output**
 - They cease to compete as vigorously as they can
 - The incentive to collude in these markets is high

- **Non collusive behaviour** in oligopolies occurs when firms **actively compete** to maintain/increase market share
 - **Price wars** may break out occasionally between competitors
 - Little is to be gained as **competitors can quickly follow each others actions**, resulting with very little change in market share but a significant **loss in profits**, due to the lower prices generated by the price war



Your notes

Diagram: A Collusive Oligopoly



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When firms join together in collusion, they agree on a price and act like a monopoly in the industry by removing competition

Diagram analysis

- Five firms with a concentration ratio of 80% meet secretly and **agree to fix prices** at a particular level
- The five firms present in the market **as a single firm**
- The firm produces at the **profit maximisation level of output**, where $MC = MR (Q_1)$
 - At this level, $AR (P_1) > AC (C_1)$
 - The collusive oligopoly is making higher levels of **abnormal profit**



Your notes

Types of collusion

- Collusion can be overt or tacit
 - The net effect of collusion is that a group of firms end up acting more like a monopoly in the market
- **Overt collusion** occurs when firms explicitly agree to limit competition or raise prices (price fixing)
 - A **cartel** is the most restrictive form of collusion and is illegal in most countries
 - The consequences of overt collusion include:
 - **Higher prices** for consumers
 - **Less output** in the market
 - Poor quality products and/or customer service
 - Less investment in innovation
 - Overt collusion often happens in the following ways
 - **Price fixing**
 - Setting output **quotas**, which limit supply and naturally result in price increases
 - Agreements to block new firms from entering the industry
- **Tacit collusion** occurs when firms avoid formal agreements but closely monitor each other's behaviour, usually following the lead of the largest firm in the industry
 - The most common form of tacit collusion is **price leadership**
 - Price leadership occurs when a **dominant firm** sets the price for its products or services, and other smaller firms in the industry typically follow suit
 - This dominant firm, known as the price leader, often has a **significant market share or holds a strategic position** in the industry
 - Tacit collusion requires firms to monitor the price of the largest firm in the industry and then adjust their prices to match
 - It is difficult for **regulators** to prove that collusion has occurred

The Distinction Between Cooperation & Collusion

- Cooperation is a **legal agreement** between rival firms to share resources and expertise to achieve a specific goal
 - It allows firms to increase sales and market share without violating **antitrust (anti monopoly) laws**



Your notes

- Through the sharing of resources, firms reduce the cost of production and benefit **economies of scale**
 - This leads to increased **innovation**, greater **choice**, and potentially **lower prices** for consumers
- Cooperation can take the form of **joint ventures** and **strategic alliances**
 - E.g In 2023, Sony and Honda established a collaborative venture to produce an electric vehicle. They benefited from shared **brand recognition** and **technologies**
- Collusion is an **illegal agreement** between rival firms to control **price or output**
- Firms effectively act like a **monopoly** to maximise profits
- Limiting choice or raising prices is an **anti-competitive** practice that reduces **consumer surplus**
 - Regulatory authorities have to **monitor and regulate** this behaviour to ensure fair outcomes for consumers



Your notes

Oligopoly: Price & Non-Price Competition

Competition in Oligopoly Markets

- Firms in an oligopolistic market are highly competitive and can use price or non-price strategies to increase **market share**
- There is a high degree of interdependence between competitors in an oligopoly market
 - Competitors closely watch each others actions
 - They are very responsive to new innovations
 - They use **game theory** to determine the best course of action
- **Non-price competition** tends to be the most common way in which they compete
 - The focus of competition is on **product differentiation** to develop brand loyalty
 - E.g. Firms achieve this high levels of spending on advertising, branding, packaging, loyalty cards, etc
- **Price competition** is less common, as firms want to avoid a **price war**
 - As goods and services are very close substitutes in an oligopolistic market, a price change initiated by one firm will cause other firms to react to price change
 - Individual firms will take into account the likely reactions of their competitors
 - This mutual interdependence leads to **price stability** or **rigidity** within the market
 - The **kinked demand curve** demonstrates the concept of **price rigidity**

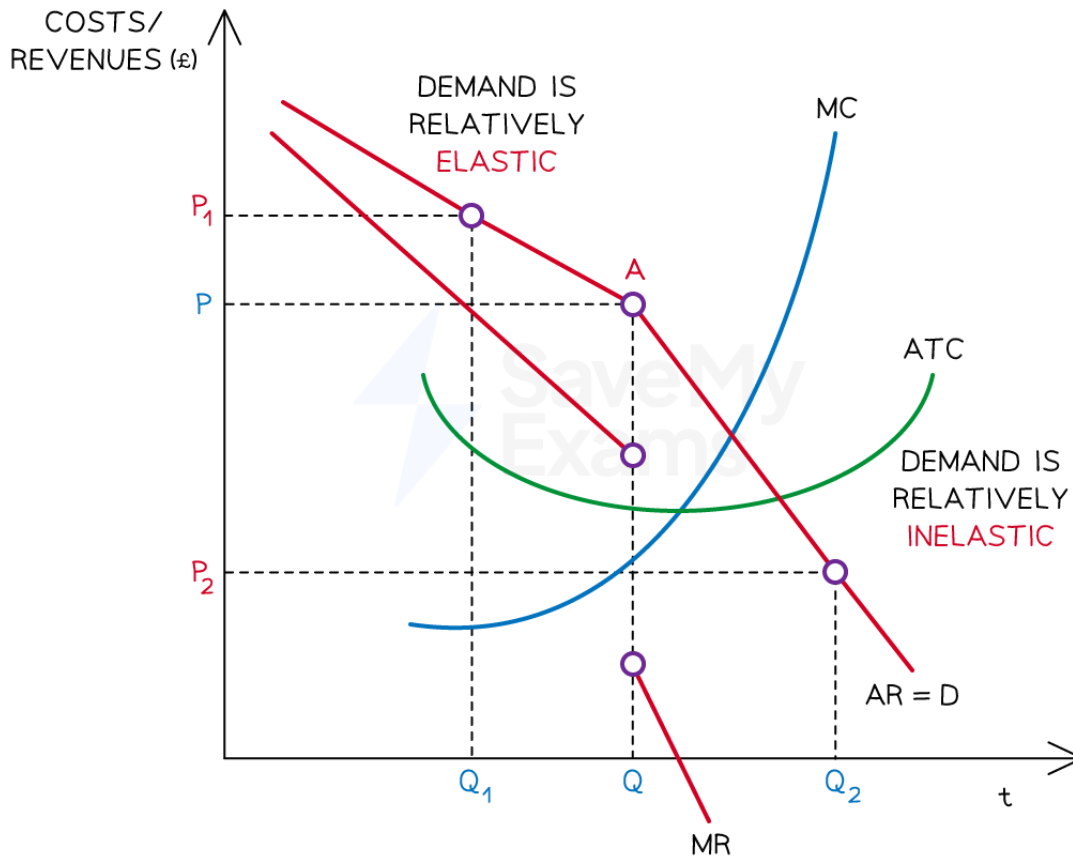
The Kinked Demand Curve Model

- The kinked demand curve provides one explanation of why **prices are stable** in oligopolistic competition
- **Rival firms** react to price changes initiated by a competitor

Diagram: Kinked Demand Curve



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Prices are rigid at P_1 . Competitors will not raise their price above this price. If the firm sets its price lower, all competitors will follow suit, and there will be little change to market share

Diagram analysis

- A firm produces a quantity of Q_1 and sells at price P_1
- This is a very similar price point **found in the industry**

Elastic section (A-B)

- If a firm **increases** its price from P_1 to P_2 , it is unlikely that rival firms will follow the price increase
 - The firm will lose consumers to rival firms if they charge a higher price
- This means that a small increase in price leads to a greater than proportionate decrease in quantity demanded, resulting in an overall **fall in market share and total revenue**
 - This section of the demand curve (A-B) is **elastic**



Your notes

Inelastic section (B-C)

- If a firm **decreases** its price from P_1 to P_3 , it is likely that rival firms will **respond by also decreasing price**
 - **All firms** in the market will offer the new lower price
 - Market share remains the same. However, **total revenue and profit decline for all**
- This means that a decrease in price leads to a less than proportionate increase in quantity demanded, resulting in an overall **fall in total revenue**
 - This section of the demand curve (B-C) is **inelastic**
- The change in elasticities, brings about a kink in the demand curve at a price level of P_1
 - This creates **price rigidity**, as firms tend not to change price due to the anticipated behaviour of competitors (**mutual interdependence**)
- To avoid a price war, firms focus on **non-price competition** strategies to increase sales
 - This is why there is a high level of expenditure on **research** and **advertising** in oligopolistic industries

Reasons for Non-Price Competition

- Firms in oligopolistic markets commonly engage in **non-price competition**
- In other market structures, price competition is usually competitive
- Several reasons push firms towards a focus of non-price competition

Reasons why Oligopolistic Firms Engage in Non-price Competition

Reason	Explanation
Operation of cartels	<ul style="list-style-type: none"> ▪ If a small number of firms form a cartel, they agree a fixed price for their product ▪ This is anti-competitive and illegal. If they are caught, these firms are subject to high fines ▪ Some of the most famous cartels include the Middle East Oil Cartel (OPEC) and the drug cartels in Mexico and Columbia
Price leadership	<ul style="list-style-type: none"> ▪ A dominant firm in the industry is usually the price leader. Other smaller firms typically set a price close to it



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	<ul style="list-style-type: none"> E.g Coca-Cola acts as the dominant firm, and its rival PepsiCo adjusts prices close to it. They differentiate through advertising campaigns or highlighting unique flavours
Price agreements	<ul style="list-style-type: none"> Firms may engage in price fixing to keep prices high E.g In the airline industry, major airlines might agree to set high ticket prices. To compensate for lack of price competition, they may focus instead on improving customer service or loyalty programmes
Price wars	<ul style="list-style-type: none"> This occurs when competitors repeatedly lower prices to undercut each other in an attempt to gain or increase market share By focusing on non-price strategies such as product differentiation or branding, firms can reduce the risk of engaging in price wars
Barriers to entry	<ul style="list-style-type: none"> Firms develop their advertising and branding as it increases barriers to entry New firms then find it difficult to compete with goods that have established brand loyalty with consumers

The Advantages & Disadvantages of Oligopoly

Evaluating an Oligopoly Market Structure

Advantages	Disadvantages
<ul style="list-style-type: none"> Consumers may benefit with lower prices. With a few firms dominating the market, large-scale operations result in economies of scale, reducing average costs Lower costs enable firms to generate supernormal profits, which can be reinvested in research and development to create more innovative goods/services for consumers A high degree of competition gives firms an incentive to continuously strive to improve the quality of goods and services 	<ul style="list-style-type: none"> High barriers to entry restrict the number of firms entering the market <ul style="list-style-type: none"> Fewer firms may result in less innovation of goods and services The dominance of a few firms enables control over prices or output. Limited competition results in fewer choices for consumers High levels of spending on branding and advertising can increase production costs. This cost may be passed on to consumers through higher prices

- There is a potential for firms to engage in **illegal collusion** or operate as **cartels** by fixing price or output



Your notes



Your notes

Monopoly & Monopoly Power

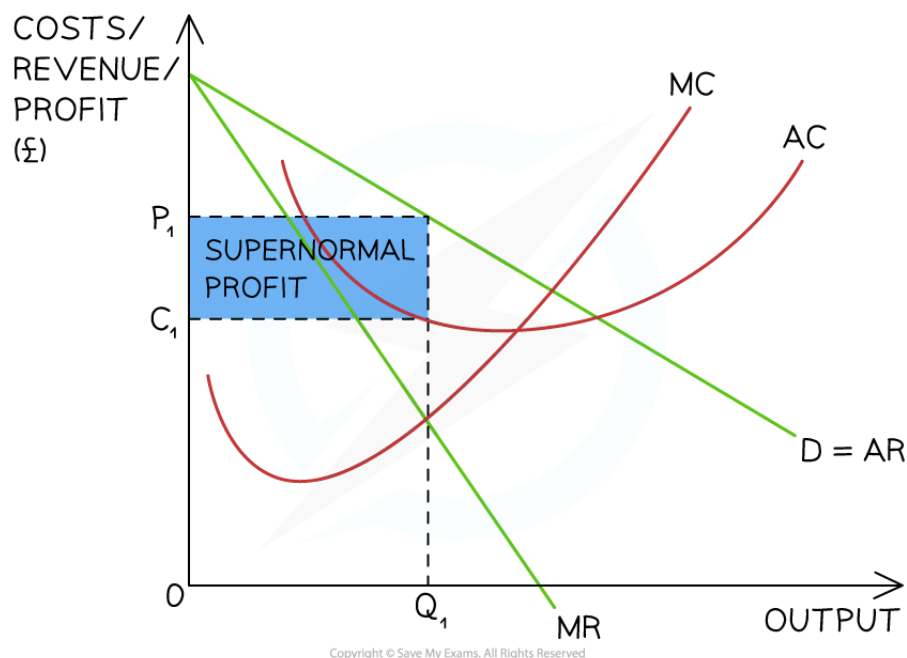
Characteristics of Monopoly

- A monopoly is a market structure in which there is a **single seller**
- There are no **substitute products**
- The firm has **complete market power** and is able to set prices and control output
 - This allows the firm to **maximise supernormal profit** in the short-run
 - There is no long-run erosion of supernormal profit as competitors are unable to enter the industry
- **High barriers to entry exist**
 - One of the main barriers is the ability of the monopoly to **prevent any competition** from entering the market
 - E.g. By purchasing companies who are a potential threat
- The **UK Competition & Markets Authority** defines a monopoly as any firm having more than 25% **market share**
 - It acts to **prevent** this from happening in most industries

Monopoly Diagram

- As a single seller of goods/services, the firm in a monopoly market is also the **entire market**
 - There is no differentiation between the firm and the industry
- It is a **price maker**
 - This means that its revenue curves are downward sloping
- In order to **maximise profits**, it produces at the point where marginal cost (MC) = marginal revenue (MR)

Diagram: Monopoly at Profit Maximising Equilibrium



The firm makes supernormal profit in the short-run & long-run as the $AR > AC$ at the profit maximisation level of output (Q_1)

Diagram analysis

- The firm produces at the **profit maximisation level of output**, where $MC = MR (Q_1)$
 - At this level, $AR (P_1) > AC (C_1)$
 - The firm is making **supernormal profit** = $(P_1 - C_1) \times Q_1$

Advantages & Disadvantages of Monopoly

- In several instances where the **Competition & Markets Authority** has acted to **decrease/limit monopoly power**, the firms have taken the Regulator to court in an attempt to convince them that the **firms market power will benefit consumers**
 - Theoretically, this is possible. However, in many cases the desire to **maximise profits** would prevent this from happening

Evaluating Monopoly Power



Your notes

Stakeholder	Advantages	Disadvantages
The Firm	<ul style="list-style-type: none"> ▪ Supernormal profits generate money for continued investment in technology and product innovation ▪ Market power enables the firm to increase its global competitiveness ▪ Economies of scale can increase, thereby lowering the average cost ▪ Producer surplus increases ▪ Price discrimination can increase revenue 	<ul style="list-style-type: none"> ▪ Due to a lack of competition, there is a reduced incentive to be efficient ▪ Cross subsidisation can create inefficiencies ▪ Monopolies lead to a misallocation of resources as $P > MC$. The price is above the opportunity cost of providing the goods ▪ Due to a lack of competition, innovation sometimes lacks effectiveness
Employees	<ul style="list-style-type: none"> ▪ Supernormal profits often result in higher wages 	<ul style="list-style-type: none"> ▪ Having only one supplier in the industry limits the opportunity to change employers
Consumers	<ul style="list-style-type: none"> ▪ Product innovation due to the firm's supernormal profits may result in a better-quality product ▪ Cross subsidisation can lower prices on some products that the firm provides ▪ Prices may fall If firms pass on their cost savings (due to economies of scale) in the form of lower product prices 	<ul style="list-style-type: none"> ▪ A lack of competition is likely to result in higher prices as no substitute goods are available ▪ A lack of competition may result in no product innovation & worse product quality over time ▪ May experience worse customer service as the incentive to improve it is limited ▪ Cross subsidisation is likely to increase prices on some products offered by the firm e.g. Champagne prices ▪ Consumer surplus decreases
Suppliers	<ul style="list-style-type: none"> ▪ Increased sales volume for some suppliers as they are able to supply products that are distributed nationally or internationally 	<ul style="list-style-type: none"> ▪ There is less competition for their products and a monopoly often has the power to dictate what price they will pay to suppliers (monopsony power)

- | | |
|--|---|
| | <ul style="list-style-type: none">▪ This price may not be profitable in the long run |
|--|---|



Your notes



Your notes

Price Discrimination

The Conditions Necessary for Price Discrimination

- **Price discrimination** occurs when a firm charges a **different price** for the **same good/service** in order to maximise its revenue
 - There are different **types (degrees) of price discrimination**
 - **First degree discrimination** occurs when a firm separates consumers based on their ability to pay. E.g Market traders can often easily identify high worth customer and double the price of the product offered – especially in situations where the product prices are not displayed
 - **Second degree price discrimination** occurs when a firm gives discounts for bulk buying, e.g 3 for 2 offers
 - **Third degree price discrimination** occurs when a firm charges **different prices to different consumers** for the **same good/ service**, e.g. rail fares are priced differently depending on the time of travel
- **Third degree markets** are often **sub-divided** based on time, age, income and geographic location
 - Some airline ticket portals **charge higher prices** to customers using an **Apple computer** as they are likely to have higher income

Conditions Required for Price Discrimination to Occur

Market Power	Varying Consumer Price Elasticity of Demand (PED)	Ability to Prevent Resale of Tickets
<ul style="list-style-type: none"> ▪ The firm must have the ability to change prices and it works best when there are no/few substitutes 	<ul style="list-style-type: none"> ▪ Some consumers must be willing to pay more, and the firm must be able to identify these different consumer groups i.e. split the market into sub-markets 	<ul style="list-style-type: none"> ▪ It must be able to prevent consumers buying in the low-price sub-market and reselling in the higher ones

Illustrating Third Degree Price Discrimination

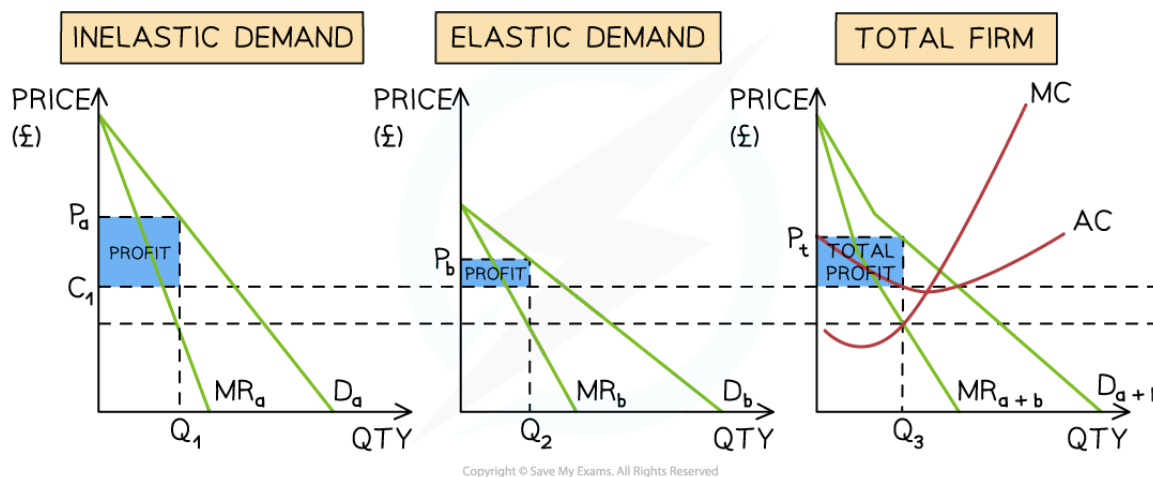
- In order to illustrate **third degree price discrimination** diagrammatically, the different sub-market diagrams are placed side by side
- The total market diagram is a combination of the sub-market diagrams
 - The **total profit** is a combination of profits from the sub-markets

- The diagram below illustrates the **market for rail travel** in the UK, where inelastic demand is 'peak' hour demand and elastic demand is any other time of the day i.e. 'off-peak'

Diagram: Third Degree Price Discrimination



Your notes



A third-degree price discrimination diagram demonstrates a market that has been divided based on price inelastic (peak travel) & price elastic demand (off-peak travel). Following the revenue rule, prices are raised for peak demand & lowered for off-peak demand

Diagram analysis

- Each train route has an effective **monopoly provider**
- The overall firm is producing at the **profit-maximising level of output**, where **MC=MR**
 - This point is **extrapolated to both sub-markets** on the left by using the lower dotted line
 - The average cost is extrapolated across both sub-markets using the **upper dotted line (C₁)**
- A **higher price for peak travel** has been set at P_a & a **lower price for off-peak travel** has been set at P_b
- Following the revenue rule, **total revenue increased** in both markets
- The profit for **sub-market A** = $(P_a - C_1) * Q_1$
- The profit for **sub-market B** = $(P_b - C_1) * Q_2$
- The firm's total profit is the average selling price - the average costs
 - Total profit** = $(P_t - C_1) * Q_3$
- The firms' **total profits are higher** than if they had charged a single price to all customers

Advantages & Disadvantages of Price Discrimination

Evaluating Third-Degree Price Discrimination for Consumers & Producers



Your notes

Consumers	Producers
<ul style="list-style-type: none"> Many consumers will lose out as they pay higher prices <ul style="list-style-type: none"> Other consumers will benefit as they will be able to take advantage of the lower prices Some consumers will gain as a higher price decreases the quantity demanded, and in some markets this can increase consumer utility <ul style="list-style-type: none"> E.g. On train services it helps limit over-crowding 	<ul style="list-style-type: none"> The total revenue of producers increases leading to higher profits Firms increase their producer surplus at the expense of a decrease in consumer surplus Setting up and enforcing price discrimination can increase average costs



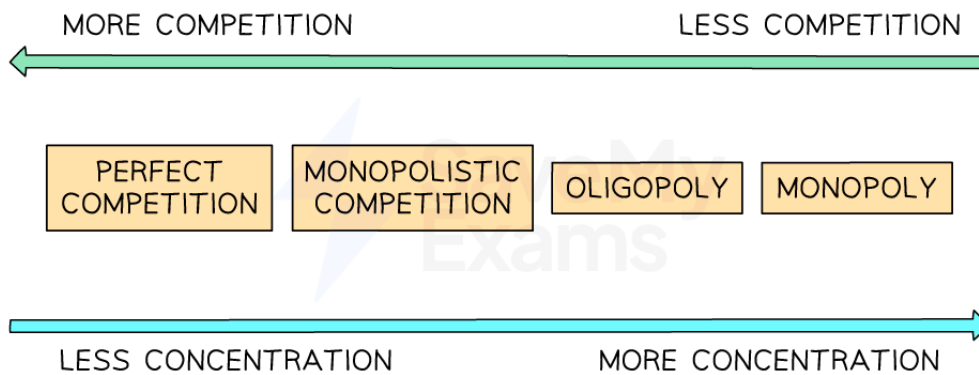
Your notes

Competition & Competitive Market Processes

Short & Long Run Benefits of Competition

- Competitive markets are those with an extremely **high degree of competition**
 - Competition** is based upon the number of **firms competing in a market**
 - The degree of competition reduces as the **market structure** moves towards being more of a monopoly

Diagram: The Degree of Competition



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The more firms in a market, the higher the level of competition

- The benefits of competition include **price reductions and improved quality** as firms strive to gain **market share**
 - With more sellers in the industry, consumers enjoy a wider **choice** of goods and services

The Short- and Long-run Benefits of Competition

Short-run benefits	Long-run benefits
<ul style="list-style-type: none"> Lower prices: competition causes firms to immediately lower prices for consumers in an attempt to gain market share 	<ul style="list-style-type: none"> Sustained lower prices: only the most efficient firms will survive in the long term and will be more allocatively efficient



Your notes

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ More choice: more sellers equals more choice for consumers ▪ Customer satisfaction: firms compete using non-price competition strategies to gain consumers <ul style="list-style-type: none"> ▪ E.g After sales services, discounts, 2 for 1 offers, loyalty cards | <ul style="list-style-type: none"> ▪ Technology improvements: Long term competition increases the pace of innovation as firms aim to gain a competitive advantage <ul style="list-style-type: none"> ▪ E.g. Renewable energy or pharmaceutical markets ▪ Long term quality: abnormal profits can be invested into R&D, to continuously innovate and improve the quality of goods/services in order to become recognised in a crowded market |
|--|---|

Non-price Competition in a Competitive Market

- Firms operating in **competitive markets** are likely to employ **non-price** strategies aimed at helping them to secure customer loyalty
 - With so many competitors and substitute products available, building customer loyalty can be difficult

Non-price Competition Strategies

Strategy	Explanation
After-sales service	<ul style="list-style-type: none"> ▪ Firms offer ongoing support and assistance post-purchase to differentiate from competitors ▪ This improves consumer satisfaction and leads to repeat purchases <ul style="list-style-type: none"> ▪ E.g Technical support
Packaging	<ul style="list-style-type: none"> ▪ Creative and unique packaging distinguishes products and contributes to their unique selling point and consumer appeal <ul style="list-style-type: none"> ▪ E.g Coca-Cola's iconic bottle shape
Corporate Social Responsibility (CSR)	<ul style="list-style-type: none"> ▪ Firms adapt to social and environmental concerns to show their ethical commitment. This can attract socially-conscious consumers <ul style="list-style-type: none"> ▪ E.g H&M conscious campaign



Your notes

Delivery policies	<ul style="list-style-type: none">Firms are increasingly offering improved delivery and return policies to attract consumers
Improved quality	<ul style="list-style-type: none">Constant innovation and upgraded features increase sales and maintain competitiveness.<ul style="list-style-type: none">E.g Apple's regular release of upgraded iPhones

The Process of Creative Destruction

- The competitive market place leads to a process coined **creative destruction** by Austrian economist Schumpeter
 - This occurs when the process of **innovation** and **technological change** leads to the replacement of old technologies and business models with new ones
- Firms that have a degree of **monopoly power** and are making **large profits** will attract other firms into the market
 - In such competitive environments, there's a strong incentive for firms to **innovate** and overcome **barriers to entry** to attract consumers
- This drive for innovation has led to significant **advancements in technology**
 - As firms compete to develop innovative solutions, there is a constant cycle of creation and destruction within industries
 - Existing goods, services, and methods of production are **replaced** by newer, more efficient ones that satisfy consumer needs
 - Firms that fail to adapt or innovate risk being made obsolete, leading to their **exit** from the industry
- E.g In the entertainment market, **Netflix** responded to changing consumer wants by creating a streaming platform for movies and TV online and eventually creating their own content. **Blockbuster** (a video rental firm) failed to adapt, which led to them exiting the market



Your notes

Contestable & Non-contestable Markets

Characteristics of Contestable Markets

- A **contestable market** occurs when there is **freedom of entry** into a market and where **costs of exit are low**
 - A contestable market and competition are different
 - **Competition** is based upon the number of **firms competing in a market**
 - A **contestable market** is based upon the **threat of new entrants**
- **Contestable markets are characterised by**
 1. **No barriers to entry or exit:** **barriers to entry and exit** are low or non-existent. This allows firms to easily join or leave the market
 2. **No competitive disadvantages on entry:** new firms are able to setup & immediately compete with existing firms & have access to the **same technology**
 3. **Perfect information:** There is no proprietary knowledge that would limit competition (**e.g. patents**)
 4. **Hit-and-run competition** exists

Sunk Costs & Hit-and-run Competition

- Contestable markets are easily threatened by **entry of new firms** when there are **low sunk cost** and **hit-and-run competition** exists

Sunk costs

- A sunk cost is an investment that has been made that cannot be recovered
- A high sunk cost will be a **barrier to entry and exit**. Firms will not easily join or leave the market
 - E.g. To enter the industry, the firm may have **acquired expensive assets** that are highly specialised and difficult to resell
 - Other examples include money spent on advertising, research and development, branding etc.
- If sunk costs in an industry are high, it will **limit competition & decrease contestability** as firms will be more hesitant to enter
 - The lower the sunk costs, the **more contestable** the market
 - The higher the sunk costs, the **less contestable** the market



Your notes

Hit and run competition

- Hit and run competition occurs when a firm **enters and exits** an industry quickly
- Firms are attracted by the short-run **supernormal profit** and once they have acquired these profits, they **exit** just as quickly

Significance of Market Contestability

- The more contestable a market, the more the **behaviour** of existing competitors may be **modified**
 - E.g. Firms making **supernormal profit** may change their pricing strategy from **profit maximisation** ($MC=MR$) to **limit pricing**
 - They are even likely to set the **price = average cost** ($AR=AC$)
 - This will reduce **hit and run competition**
 - It will result in **normal profit**
 - There will be less disruption to the market
- The more contestable a market, the more the behaviour of firms **resembles that of firms in perfect competition**



Your notes

Market Structure, Efficiency & Resource Allocation

Types of Efficiency

- Different measures of **efficiency** are used to compare the performance of firms within markets
 - They also help to explain the **behaviour** of firms in the different **market structures**
- **Static efficiency** is the efficiency at a particular **point in time**. It can be a result of **allocative** or **productive** efficiency
 - **Allocative efficiency** occurs at the level of output where average revenue = marginal cost (**AR = MC**)
 - At this point, **resources are allocated** in such a way that consumers and producers get the **maximum possible benefit**
 - **Demand = supply**
 - **No one can be made better off** without making someone else worse off
 - There is **no excess** demand or supply
 - **Productive efficiency** occurs at the level of output where marginal cost = average cost (**MC = AC**)
 - At this point, **average costs are minimised**
 - There is **no wastage** of scarce resources and a high level of factor productivity
- **Dynamic efficiency** is **long-term efficiency** and is a result of innovation as a firm **reinvests its profits**
 - It results in improvements to **manufacturing methods**
 - This lowers both the **short-run and long-run average total costs**
 - Other types of efficiency can drive dynamic efficiency
 - E.g If **productive efficiency** is driven by **technological advancements** and **innovation**, it can reduce costs **over time**

Efficiency & Inefficiency in Different Market Structures

- **Market structures** are the **characteristics of the market** in which a firm or industry operates
 - These characteristics typically include:
 - The number of buyers
 - The number & size of firms

- The type of product in the market (**homogenous** or **differentiated**)
- The types of **barriers to entry** and exit
- The degree of competition
- Market structures can be separated into **perfect competition** and **imperfect competition**
- **Imperfect competition** includes the following market structures:
 - Monopolistic
 - Oligopoly
 - Monopoly

Diagram: Efficiency and Inefficiency in Perfect and Imperfect Competition

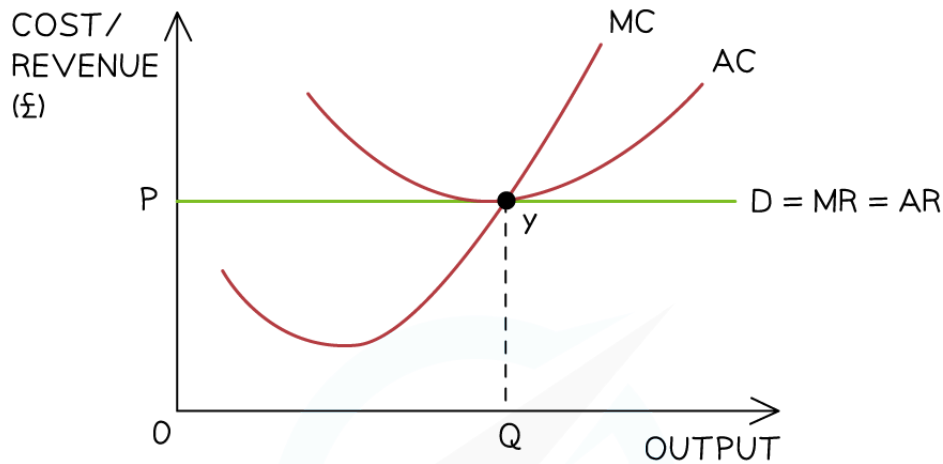


Your notes

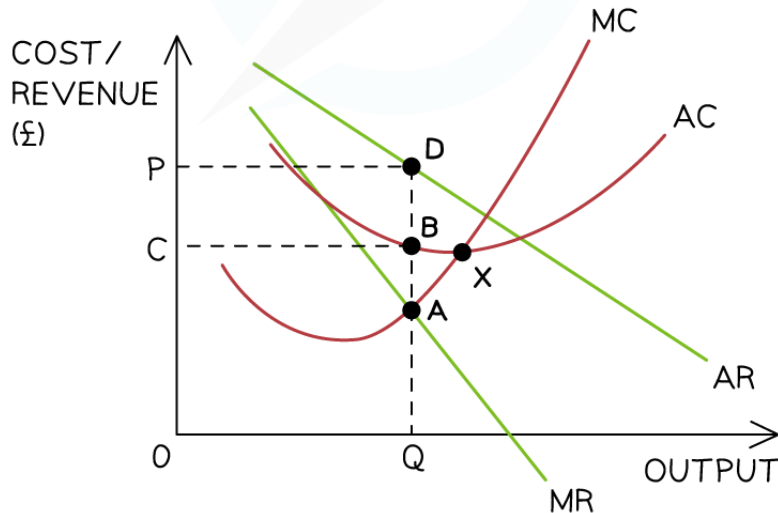


Your notes

PERFECT COMPETITION



IMPERFECT COMPETITION



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A perfectly competitive market at the top that experiences allocative & productive efficiency. An imperfect market on the bottom in which inefficiencies exist at the profit maximisation level of output

Perfectly competitive market diagram observations

- The firm produces at the **profit maximisation level** of output where **MC=MR (Y)**



Your notes

- The firm is **productively efficient** as $MC=AC$ at this level of output
- The firm is **allocatively efficient** as $AR(P)=MC$
 - Demand = supply
- The firm is unlikely to experience **dynamic efficiency** as it is unlikely to have **supernormal profits** to reinvest

Imperfectly competitive market diagram observations

- The firm produces at the **profit maximisation level** of output where $MC=MR(A)$
- The firm is not **productively efficient** as $AC > MC$ at this level of output ($B-A$)
 - **Productive efficiency** would occur at point E where $MC=AC$
- The firm is not **allocatively efficient**, as $AR(P) > MC$ at this level of output ($D-A$)
- Demand is not equal to supply
 - **Allocative efficiency** would occur where $AR=MC$
- The firm is likely to experience **dynamic efficiency** as it will be able to reinvest its profits so as to increase innovation

Influences on Dynamic Efficiency

- **Dynamic efficiency** is influenced by the way a firm **reinvests its profits**
 - They can reduce **long term costs** by investing in research and development, human capital and capital
- Investing in **research and development (R&D)** allows firms to **allocate resources** in the most optimal way. By identifying changing needs of consumers, firms can develop goods and services that match those needs
 - E.g. Pfizer's investment into COVID-19 vaccine
- Investing into **human capital** through education, training and rewards, it incentivises employees to increase **labour productivity**
 - E.g. Google drives creativity through rewarding and training their employees
- Investing in **capital**, such as technology, can improve **production processes** and result in long-term cost reductions
 - E.g. Implementing automated **technological advancements** decreases production costs **over time**



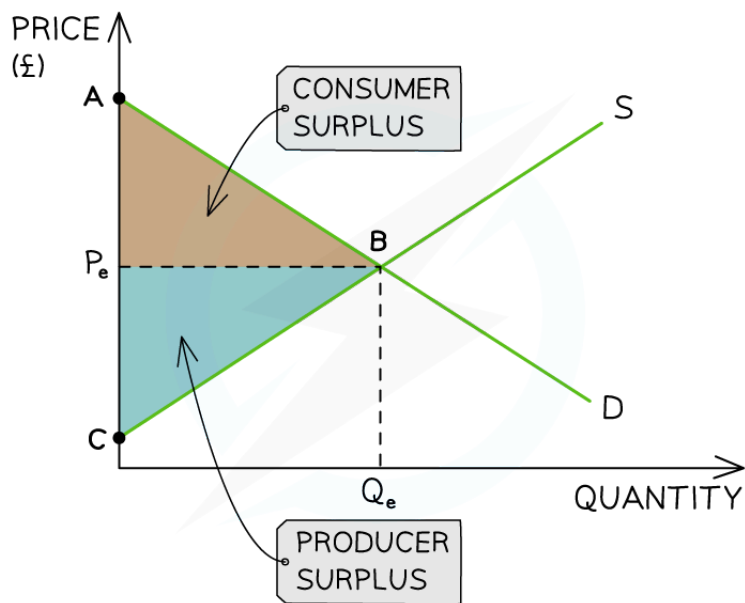
Your notes

Consumer & Producer Surplus

Consumer & Producer Surplus

- Market **efficiency** and **welfare losses** in **market structures** can be considered through the concepts of **consumer and producer surplus**
- Consumer surplus** is the difference between the amount the **consumer is willing to pay** for a product and the price they have **actually paid**
 - E.g. If a consumer is willing to pay £18 to watch a movie and the price is £15, their **consumer surplus** is £3
- Producer surplus** is the difference between the amount that the **producer is willing to sell** a product for and the price they **actually do**
 - E.g. If a producer is willing to sell a laptop for £450 and the price is £595, their **producer surplus** is £145

Diagram: Consumer and Producer Surplus



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Consumer surplus lies below the demand curve and producer surplus lies above the supply curve

Diagram analysis



Your notes

- The area between the **equilibrium price** and the **demand curve** represents the **consumer surplus** in the market (ABP_e)
 - **The consumer surplus** lies underneath the demand curve
- The area between the **equilibrium price** and the **supply curve** represents the **producer surplus** in the market (CBP_e)
 - Producer surplus lies **above the supply curve**
- When the market is at **equilibrium**, producer and consumer surplus are **maximised**
- Consumer surplus + producer surplus = **social/community surplus**
 - Any **disequilibrium** reduces the social surplus

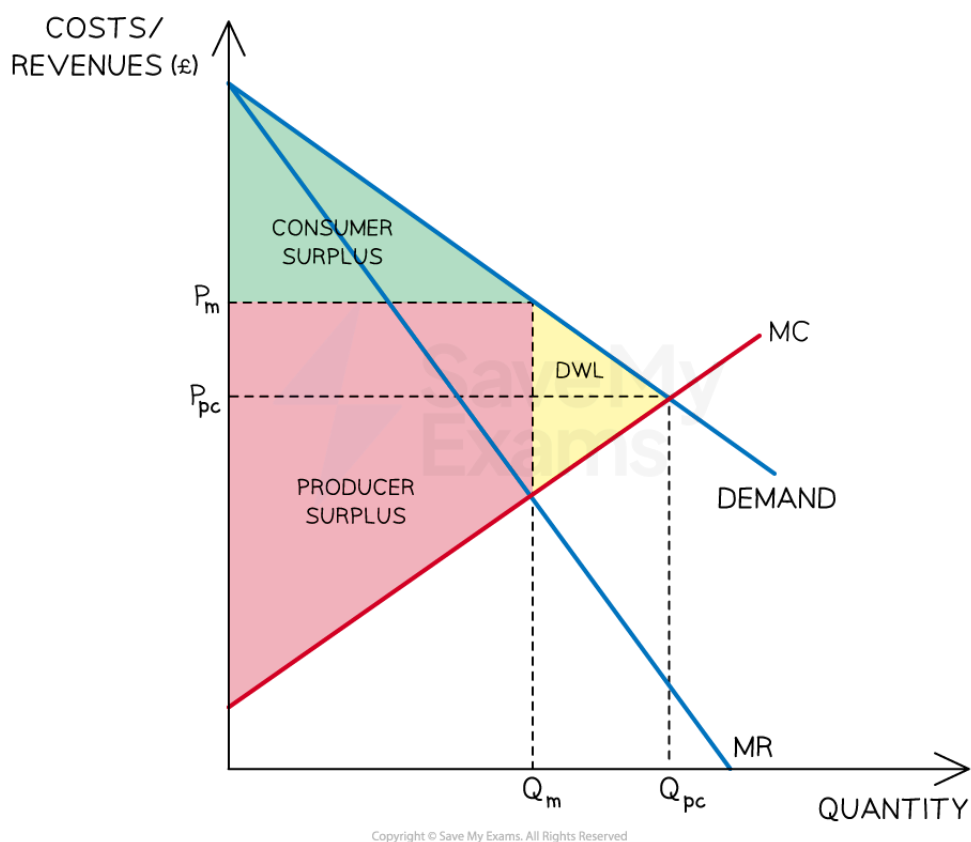
Consumer & Producer Surplus in a Monopoly

- Monopoly is typically compared to perfect competition when comparing market **efficiency**
 - Due to the lack of competition, **monopolies** tend to have **higher prices** and **lower output**
 - As a result, they have lower levels of **consumer surplus** and higher levels of **producer surplus**

Diagram: Consumer and Producer Surplus in a Monopoly



Your notes



The Monopolist sells at higher price P_2 and restricts output to Q_1

Diagram analysis

Change to consumer surplus

- The monopolist produces at the **profit maximisation level** of output Q_2 , where **$MC=MR$ (A)** and sells their products at a monopoly price of P_2
- In a more competitive environment, such as a **monopolistic** market, consumers would pay the lower price P_1 where $AR=MC$ (allocative efficiency)
- **The loss of consumer surplus** due to the monopoly price is equal to shaded triangle - **DBC**

Change to producer surplus

- Producer surplus is maximised at the profit maximisation level of output (Q_2)
- Compared with monopolistic firms, as quantity falls from Q_1 to Q_2 , there is a **loss of producer surplus** equal to the shaded triangle (**DCA**)



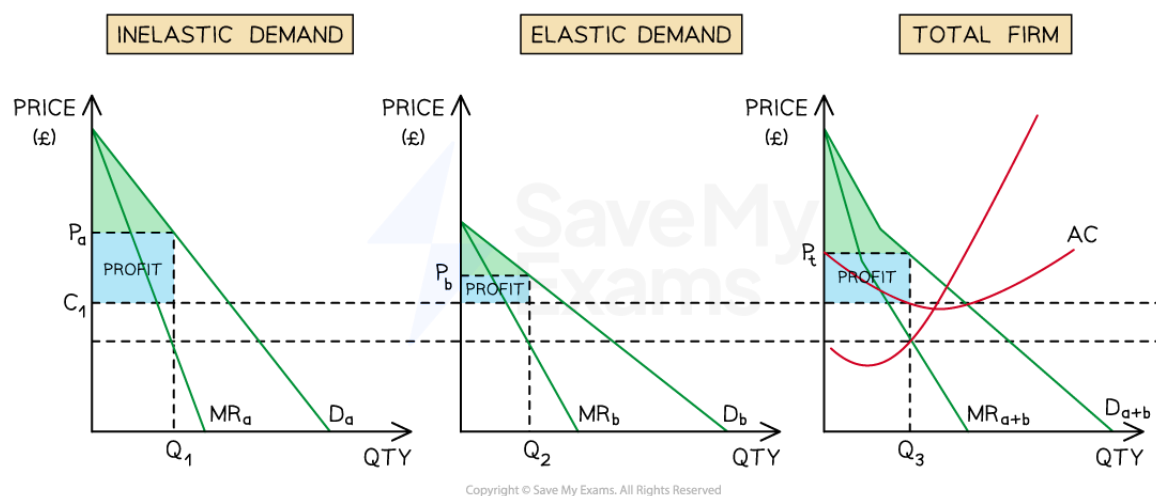
Your notes

- However, at the same time, some of the previous consumer surplus is converted to producer surplus (P_1P_2BD), resulting in a net gain of producer surplus
- The **welfare loss** is equal to the area of the shaded triangle - ADC
 - The cost to society caused by a lack of efficiency in the allocation of resource

How Price Discrimination in a Monopoly Affects Consumer Surplus

- Price discrimination** may increase consumer surplus in lower priced markets and decrease consumer surplus in higher price markets

Diagram: Consumer Surplus and Price Discrimination in Monopoly

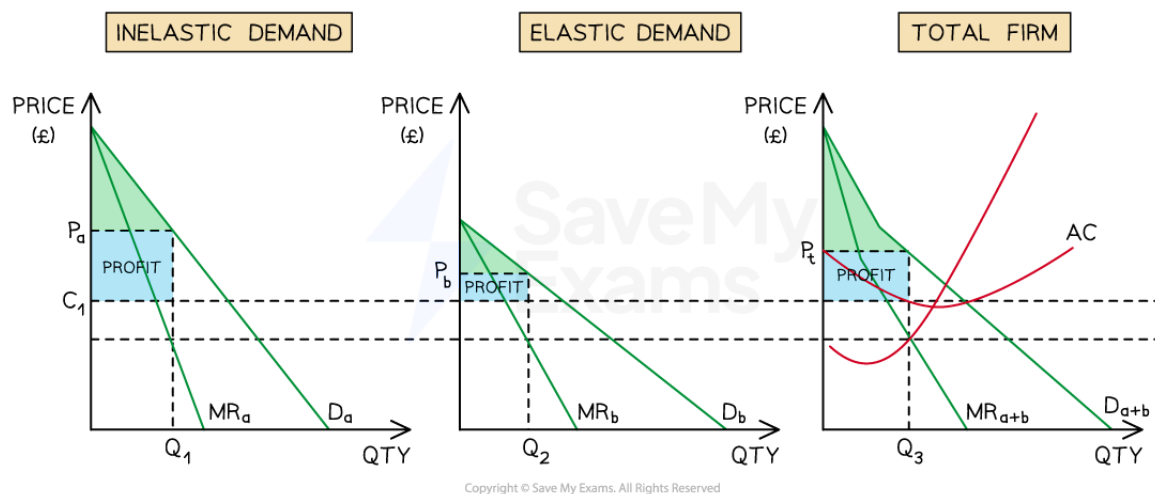


Price discrimination based price inelastic (peak travel) & price elastic demand (off-peak travel)

Diagram explanation

- Each train route has an effective **monopoly provider**
- The overall firm is producing at the **profit maximising level of output** where $MC=MR$
 - This point is **extrapolated to both market segments** on the left by using the lower dotted line
 - The average cost is extrapolated across both sub-markets using the **upper dotted line (C_1)**
- A **higher price for peak travel** has been set at P_a & a **lower price for off-peak travel** has been set at P_b

Diagram: Consumer Surplus and Price Discrimination in Monopoly



Price discrimination is evident from the price inelastic (peak travel) & price elastic demand (off-peak travel)

Diagram analysis

- Each train route in the UK has an effective **monopoly provider**
- The overall firm is producing at the **profit maximising level of output**, where **MC=MR**
 - This point is **extrapolated to both market segments** on the left by using the lower dotted line
 - The average cost is extrapolated across both sub-markets using the **upper dotted line (C₁)**
- A **higher price for peak travel** has been set at P_a and a **lower price for off-peak travel** has been set at P_b

Consumer surplus in the peak period

- Consumer surplus decreases**
 - There is a reduction in consumer surplus for **the peak travel (inelastic) market** as consumers pay a higher price
 - The consumer surplus in this market is shaded in yellow

Consumer surplus in the off peak period

- Consumer surplus increases**

- There is an increase in consumer surplus for **the off peak travel (elastic) market** as consumers pay a lower price
- The consumer surplus in this market is shaded in yellow

Overall Consumer Surplus

- Price discrimination causes the overall **producer surplus** to increase
- This means that the **overall consumer surplus is decreasing**
- Some consumers will benefit and others will lose out, but the end result is that the **overall consumer surplus will fall**



Your notes