

Monopoly

Definition and Characteristics of Monopoly

A monopoly is a market structure where there is **one dominant seller** in the market, meaning consumers have few, if any, close substitutes.

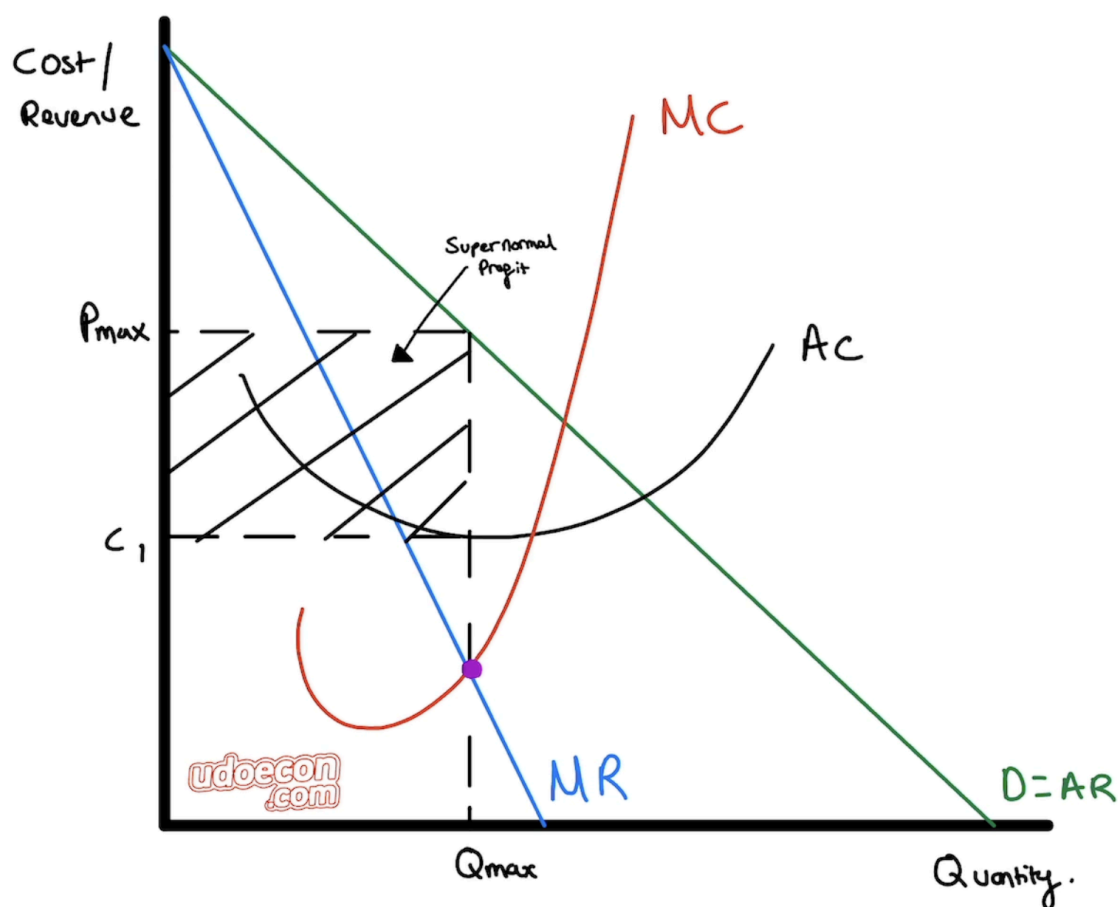
A **pure monopoly** exists when a single firm supplies the entire market

In the UK, a firm with **25% or more market share** is considered as a legal monopoly .For example Tesco holds a 28% market share .

The main characteristics of a monopoly are:

- **One dominant firm** → the firm has a large share of the market and faces limited competition.
- **Few or no close substitutes** → consumers have limited alternatives if the firm raises its price. For example Iphone users have no substitutes for downloading IOS applications besides the app store .
- **High barriers to entry** → patents, strong brand loyalty and economies of scale can make it difficult for new firms to enter. For example AstraZeneca held exclusive patent rights on its cancer drug *Tagrisso*, allowing it to generate **\$5.8 billion in annual sales** while legal barriers completely banned rival pharmaceutical firms from producing cheaper generic versions.
- **Price maker** → the firm has market power and can influence the price it charges.

Profit Maximisation in Monopoly



A monopoly maximises profit at the level of output where:

$$MC = MR$$

It then moves vertically upwards until it hits the AR curve then goes left which gives price P_{max} and Quantity Q_{max} .

Costs and Benefits of Monopoly

Firms

Benefits include:

- **Supernormal profits** → restricting output and charging a higher price can increase producer surplus and profit.
- **Dynamic efficiency** → profits can finance investment in technology, innovation and improved products.
- **Economies of scale** → a large monopoly can further exploit several internal economies of scale, reducing LRAC.
- **Greater stability** → high profits and barriers to entry can reduce the risk of the firm shutting down.

Written by udoecon.com

Costs include:

- Consumers exploitation with higher prices
- Lack of competitive pressure leads to increased costs which may limit dynamic efficiency / increased costs passed onto consumers.
- The firm may become productively inefficient.
- Monopoly power may attract government regulation.

Consumers

Consumers may experience:

- **Higher prices** due to the firm's market power → Less consumers surplus
- **Lower output** as the monopoly restricts production to maximise profit.
- **Less choice** because there are few alternative suppliers.
- **Potentially lower quality** because the firm faces less competitive pressure.
- **Welfare loss** because $P > MC$, creating allocative inefficiency.

Employees

A monopoly's higher profits may allow it to offer **higher wages and greater job security**. Its dominant market position can also make it less likely to fail.

However, restricting output may reduce the demand for workers:

Monopoly restricts output → derived demand for labour ↓ → employment may ↓

A dominant firm may also have **monopsony power** in the labour market if workers have few alternative employers.

Fewer alternative employers → worker bargaining power ↓ → firm's wage-setting power ↑ → wages may ↓

Suppliers

A large monopoly may provide suppliers with a **stable and reliable source of demand** because the firm is less likely to leave the market.

However, monopoly power in the product market may also create **monopsony power** in input markets.

Few alternative buyers → supplier bargaining power ↓ → monopoly can negotiate lower input prices → supplier revenue/profit ↓

Third-Degree Price Discrimination

Price discrimination occurs when a firm charges **different prices to different groups of consumers for the same good or service**.

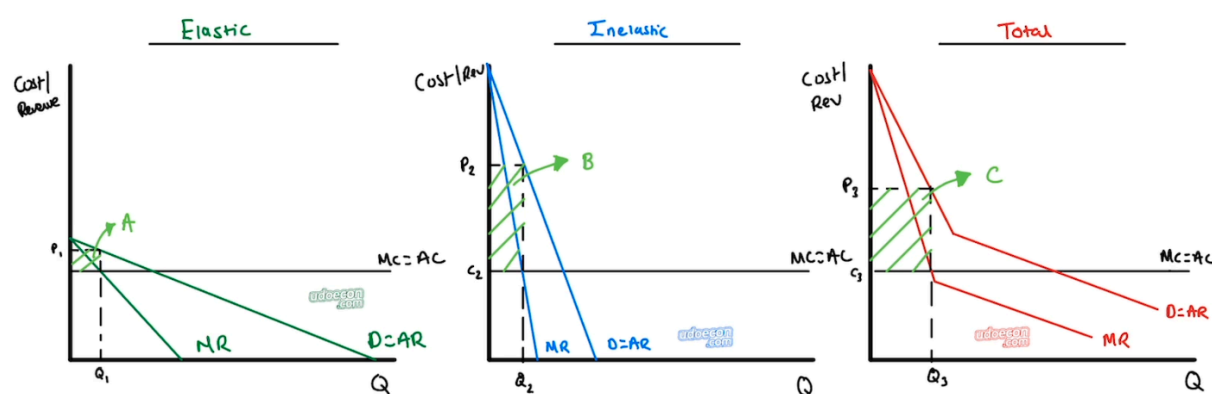
For example, PureGym slashes membership fees by **over 50% (down to ~£15/month)** for off peak gymgoers restricted to 10:30 AM–3:30 PM slots, while charging peak commuters **£35+/month**.

Conditions for Third-Degree Price Discrimination

For third-degree price discrimination to increase profit, several conditions are required:

- **Price-making power** → the firm must have sufficient market power to set different prices.
- **Market separation** → consumers must be identifiable and divided into different groups.
- **No resale** → consumers paying the lower price must not be able to resell to consumers in the higher-price market.
- **Low administrative costs** → the additional revenue must exceed the cost of identifying consumers and separating the markets.

How the Firm Sets Prices



The firm separates consumers based on their **price elasticity of demand (PED)**.

Consumers with **elastic demand** are charged a lower price P_1 e.g. under 16s rail travel, while consumers with **inelastic demand** are charged a higher price P_2 e.g. over 16s rail travel.

The firm maximises profit in each market where **MC = MR**. By charging different prices to elastic (P_1) and inelastic demand (P_2) consumers firms can extract greater total supernormal profit.

Therefore, **profit with price discrimination (A + B) > profit from charging a single price (C)**.

Costs and Benefits of Price Discrimination

Benefits of Price Discrimination

- **Higher profits** → charging different prices based on consumers' PED allows firms to extract more consumer surplus → total revenue and supernormal profit increases → greater potential for dynamic efficiency
- **Lower prices for elastic consumers** → consumers with more elastic demand are charged lower prices → increasing consumer surplus and reducing inequality. For example Spotify offers students a 50% student discount .
- **Greater capacity utilisation** → lower off-peak prices encourage additional demand → spare capacity ↓ → average costs may fall. For example EasyJet offers off-peak flights for **under £20**, filling up to **90%+ of aircraft seats** that would otherwise fly empty
- **Cross-subsidisation** → higher profits from one group can subsidise less profitable services → services that may otherwise be withdrawn can continue operating. For example, Royal Mail uses high profit margins earned on urban letter routes like London to cross-subsidise delivering a letter to remote Scottish islands for the **exact same £1.25 stamp price (losses on remote routes made up by margins made on urban routes)** .

Costs of Price Discrimination

- **Higher prices for inelastic consumers** → firms exploit consumers who are less responsive to price changes → consumer surplus ↓. For example 8 AM commuters face **up to 4x higher fares** than off-peak travellers on the exact same route
- **Consumers may be incorrectly identified** → firms may wrongly estimate a consumer's PED → an elastic consumer could be charged a high price → demand falls significantly → firm revenue/profit may fall (remember the reason behind price discrimination it is a strategy to **increase profits**)

Natural Monopoly

A natural monopoly occurs when it is naturally most efficient for one firm to dominate the market. (**one large firm can supply the entire market at a lower average cost than more competing firms** as this will lead to a wasteful duplication of resources)

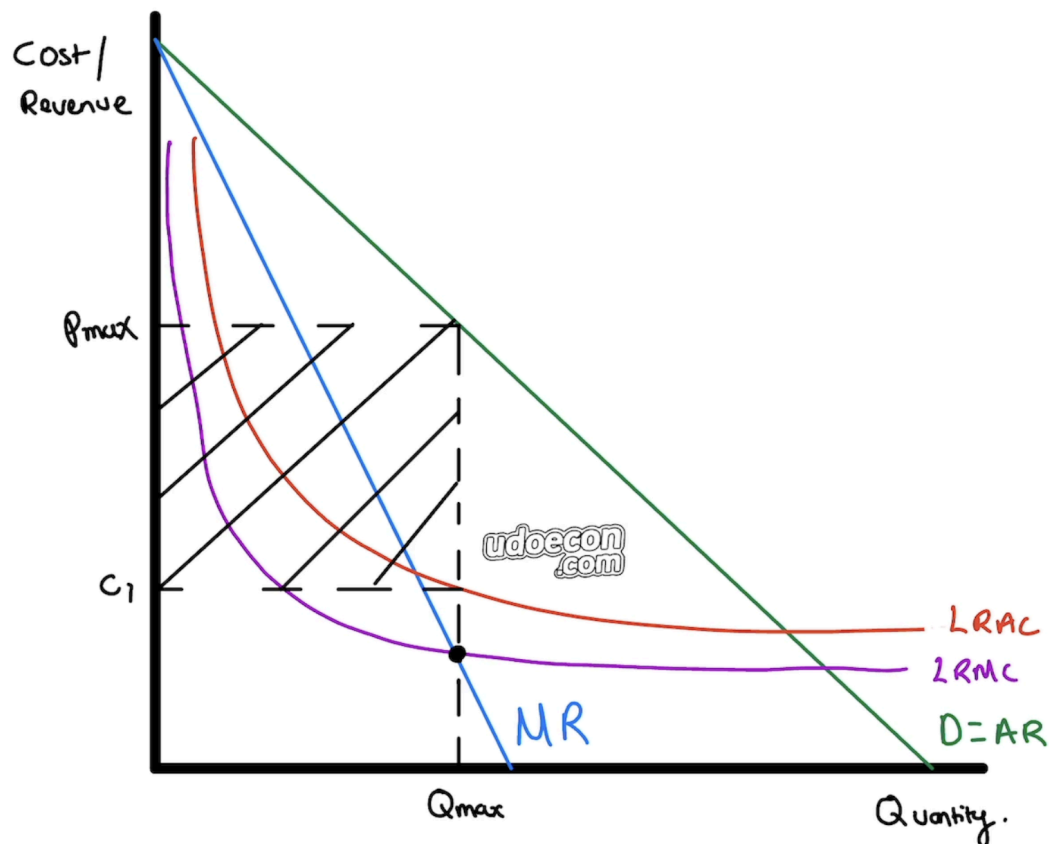
For example Network Rail operates as the sole rail infrastructure provider across Great Britain valued at £91bn.

Thames Water holds a regional natural monopoly over water supply and sewerage services for 16 million customers controlling over 20% of the UK population's water market .

Natural monopolies typically have:

- Very high fixed costs
- Significant economies of scale

How a Natural Monopoly Develops



Natural Monopoly: Profit Maximisation

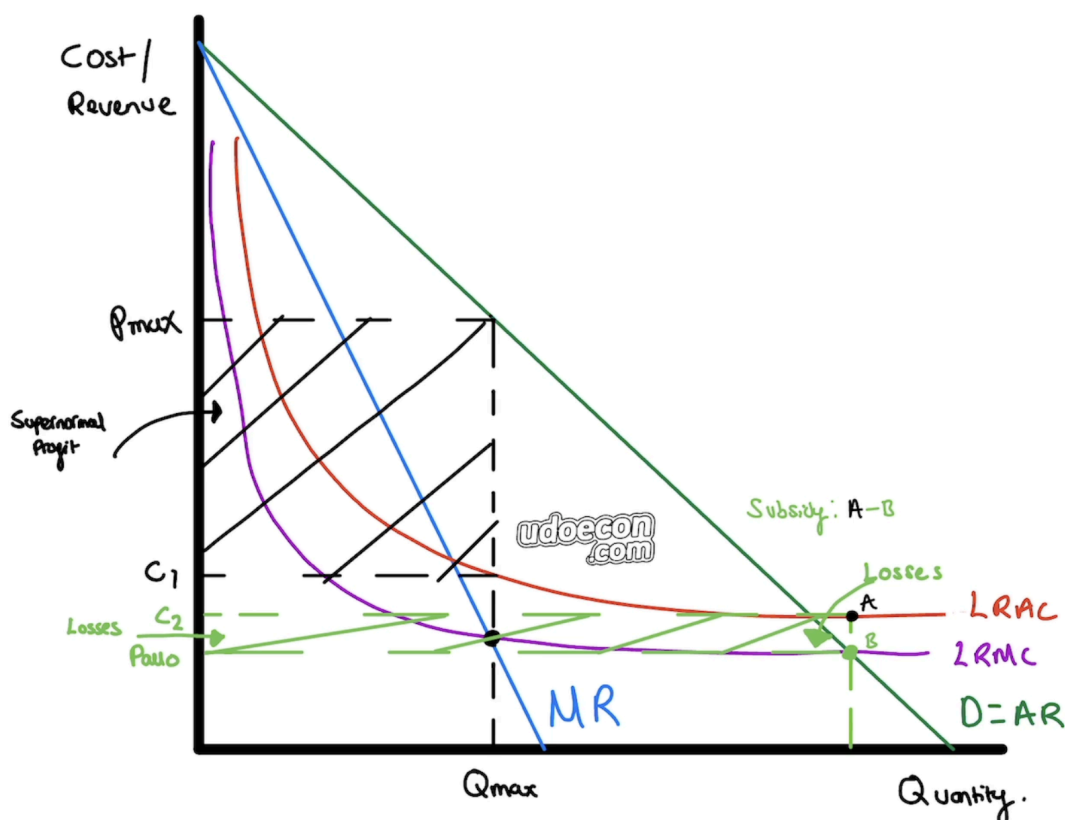
Natural monopolies typically exist in industries such as water, electricity and rail infrastructure, where there are **extremely high fixed costs** from constructing and maintaining large networks.

At low levels of output, these fixed costs are spread across relatively few consumers, causing **LRAC to be very high**. As output increases:

Output $\uparrow \rightarrow$ fixed costs spread across more units $\rightarrow$ LRAC $\downarrow \rightarrow$ significant economies of scale

Natural monopoly can profit maximise, it produces where: **$(LR)MC = MR \rightarrow$ output Q_{max} price P_{max}**

Regulating a Natural Monopoly: Allocative Efficiency



Because natural monopolies face little or no competitive pressure, regulators may intervene to prevent consumers being exploited through **high prices and restricted output**.

A regulator could require the firm to charge an allocatively efficient price, where:

$$P = LRMC \text{ (aka } MC=AR\text{)}$$

Compared with profit maximisation:

Price ↓ (Pmax vs Pallo) → output ↑ (Qmax vs Qallo) → consumer surplus ↑ → allocative efficiency achieved

However, this creates a problem for a natural monopoly as if a firm charges an allocatively efficient price of Pallo it is operating at a loss as $C_2 > P_{allo}$.

If sustained, these losses could make supplying the market financially unsustainable.

The government could therefore provide a **subsidy per unit equal to the gap between LRAC and LRMC (A-B)** at the allocatively efficient output:

Subsidy → covers losses → firm can continue operating → allocative efficiency achieved