Monopoly notes part 1

Notes for Edexcel Economics A, unit 3.4.5 part 1 on monopoly
[part 2 link on price discrimination here].
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Contents

Definitions and characteristics of monopoly

A **monopoly** is when there is a dominant seller in the market.

A **legal monopoly** is sometimes considered to be when a firm has at least 25% market share.

Examples of monopolies include:

- **Rail tracks**. Network Rail owns and manages the UK's railway network.
- **National Health Service** (NHS) in the market for healthcare in the UK.
- **Google**. Approximately 90% of internet searches occur through Google.

Properties of monopoly markets include:

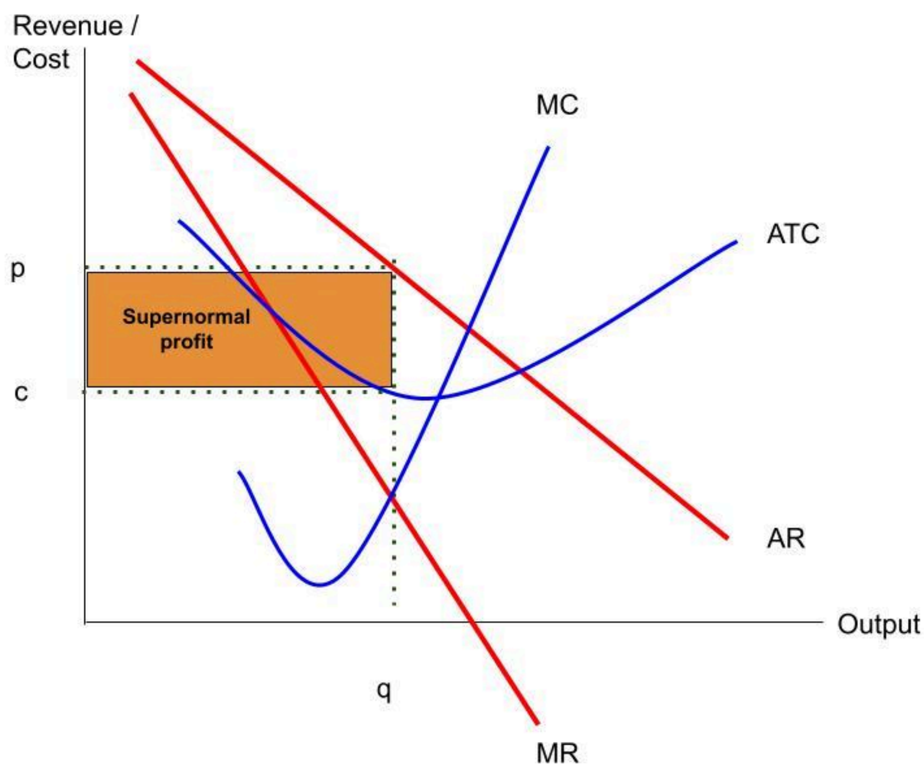
- **One dominant firm.**
  - This means that consumers have **few, if any, substitutes**.
- **Firms are price makers.**
  - Owing to a lack of substitutes, a monopoly firm can manipulate the market price.
- **High barriers to entry.**
  - Barriers to entry prevent another firm from entering the market. Examples include legal barriers (such as patents), brand loyalty and economies of scale.
- **Supernormal profits.**
  - Because of the absence of substitutes and the monopoly being a price maker, it can alter the price to increase profits.

<u>The monopoly diagram</u>

<u>Base monopoly diagram</u>

The diagram below shows the cost and revenue curves for a standard monopoly firm.

- The marginal revenue and average revenue lines are **downward-sloping**, reflecting the fact that the firm has the power to control prices.
- To maximise profits, the firm sets marginal cost equal to marginal revenue, resulting in output q being produced.
- By dotting up to the average revenue line, we get the monopoly price as p.
- Note that average revenue is the price per unit sold, so the average revenue line reflects the price).
- The orange rectangle gives the level of **supernormal profit** the firm makes. This is the difference between price and average cost, multiplied by the output.



Comparison to allocatively efficient outcome

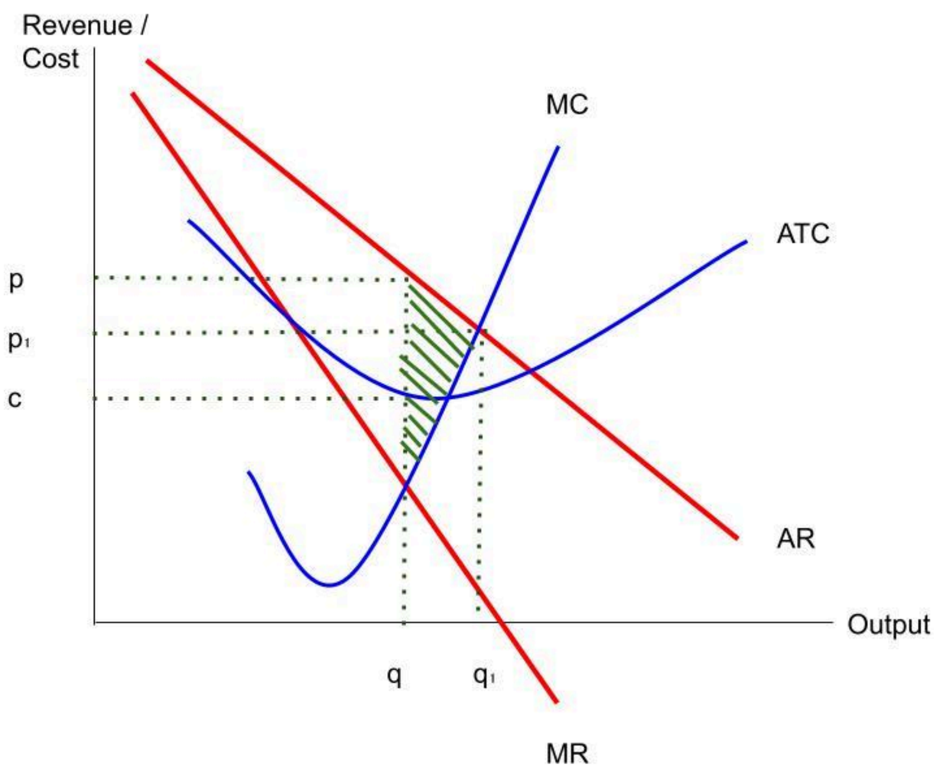
Allocative efficiency occurs when price = marginal cost.

- This is when social welfare, in this case the sum of consumer and producer surplus, is **maximised**.
- This occurs at quantity q1 and price p1 in the next diagram.

Compare this to the monopoly outcome of output q and price p.

- Comparatively, the monopoly firm has raised price from p1 to p and reduced the output from q to q1.
- In other words, the **monopoly is allocatively inefficient**.
- This creates a **welfare loss** shown by the green area in the diagram below.

In summary, the firm is better off being a monopoly as it increases its profits. Yet consumers lose out from higher prices and reduced quantity.



What are the costs and benefits of monopoly?

Firms:

- By restricting the quantity and raising the price, the monopoly firm sees **higher producer surplus** and can make **supernormal profit**. This can benefit shareholders in the company, who may receive higher dividend payments as a result.
- Higher profits enable the monopoly firm to be **dynamically efficient**. This means the firm can invest its supernormal profit into a more efficient production process or to improve the quality of its product.
- By being the dominant firm in the market, the firm can **exploit economies of scale**. Examples include bulk-buying of inputs or spreading the cost of capital investment over a larger amount of output. This lowers long-run average costs as output increases.
- The monopoly firm is **less likely to shut down**, because of its higher profits.
- **Productive inefficiency**. Generally the monopoly does not produce at the minimum point of its average cost curve.

Consumers:

- The lack of substitutes may lead to higher prices. This may lead to **lower consumer surplus**, making consumers worse off.
    - However if firms pass on the lower long-run average costs from economies of scale to consumers, prices could fall.
- As a result, the monopoly firm is **allocatively inefficient**.
    - This means the price exceeds the marginal cost (at the level of output produced). This is shown in the diagrams earlier.
    - In other words, there is a welfare loss from monopoly. While producer surplus rises, there is a greater fall in consumer surplus (when moving from a perfectly competitive market structure to a monopoly).
- **Less choice** as there is only one dominant supplier to choose.
- **Lower quality**, as there is less incentive for the monopoly firm to compete on quality to attract customers.
    - However because of dynamic efficiency, higher profits may lead to greater investment in improving the product's quality. So quality could improve.

Employees:

- Higher profits could go towards **higher pay for employees** working for the monopoly company.
- Monopolies may also be **more stable employers**. They are less likely to fail and so there is less need to fire workers suddenly.
- However, the monopoly achieves its higher profits by restricting the quantity produced. With fewer units produced, this could reduce demand for labour (**derived demand**). This could reduce demand for labour.
- Also, workers cannot easily move to an alternative employer.
  - This gives the firm more bargaining power in wage negotiations, which may **reduce wages for workers**.
  - In other words, the monopoly may also be a "monopsony" in the labour market, meaning it is a dominant buyer of labour.

Suppliers:

- A monopoly firm, in a market with high barriers to entry, is less likely to shut down. This makes the monopoly a source of **stable, reliable demand** for suppliers.
- However, for a similar argument to employees, demand could fall if monopolists decide to cut output. This is because of derived demand.
- Monopoly power could lead to monopsony power if the input can only be used in that particular industry.
  - Monopsony is where there is a dominant buyer (rather than a dominant seller) of a good.
  - A monopsony firm could use its bargaining position to **lower the price of inputs**, which could make suppliers worse off.

The more price-setting power a firm has, the more firms can engage in price discrimination to increase revenue. Hence, for the effects of monopoly, you could also consider price discrimination points.

What is a natural monopoly?

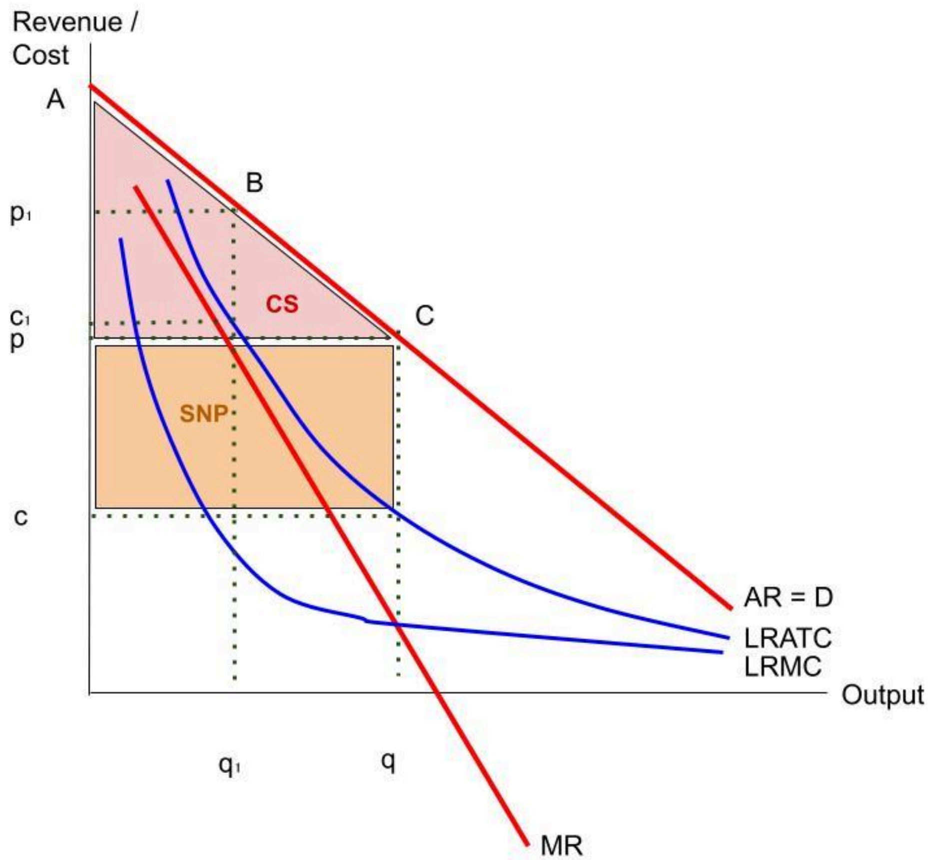
A natural monopoly is a particular type of monopoly with significant economies of scale and high fixed costs.

For example, consider markets for **utilities** such as **energy or water**.

- There are **high fixed costs** to set up the pipe network.
- Once the pipe network is in place, it becomes very cheap to add extra users to the network.
- The cost of the pipe network **can be spread over more users**.
- In this case, a monopoly might be advantageous in comparison with a normal monopoly.
- If a firm can become large, it can benefit from **economies of scale**. In other words lower (long-run) average costs, LRAC, as output rises. The firm may then pass on these cost reductions to the consumer in the form of lower prices.
- In contrast, there could be higher LRAC to have two smaller firms set up separate networks of water pipes.

The **diagram below shows a natural monopoly**.

- The key difference, in comparison with the previous diagram, is the downward sloping cost curves. This reflects the **economies of scale** in a natural monopoly.
- The firm maximises profits where MR= (LR)MC at output q. Dotting vertically upwards to the AR line to get the price, the monopoly sets the price p.
- The supernormal profit is the orange area labelled SNP.
- Suppose instead that, rather than one natural monopoly firm, there are two firms of equal size.
- Then each firm might produce half of the output at q1 for example. Then that would lead to a higher price at p1 compared with the monopoly price.
- So in this case, the natural monopoly means a lower price and higher quantity for consumers, **increasing consumer surplus** and making consumers better off.
- Specifically, consumer surplus increases from ABp1 (under a duopoly) to ACp (under a monopoly). The monopoly takes advantage of the economies of scale to lower prices for consumers.



<u>**Other evaluation points for monopoly**</u>

The benefits and costs of monopoly depend on the following points:

1) Contestability of the market.

- Contestability measures the extent of barriers to entry in a market.
- A market with a monopoly usually has high barriers to entry.
- However, barriers to entry could fall, due to deregulation or technological change.
- For example in 2006, Royal Mail lost its legal monopoly to deliver letter post, meaning it had been the only firm legally permitted to deliver letters until that date.
- This could force a monopoly to worry about the threat of new firms entering the market.
- This could incentivise a monopoly to pursue a strategy of “limit pricing”. This means pricing low such that AR = AC, making normal profit.
- Thus, the threat of firm entry could discourage price rises, if the market is contestable.

2) Extent of competition intervention.

- Competition intervention, or the threat of competition intervention, could **discourage monopoly firms from raising the price**.
- Examples of competition intervention include price caps or fines for the abuse of market power.
- Water companies face price caps, preventing a rise in the price of water.
- Either policy could prevent or discourage a monopoly from raising its price.
- This could make the monopoly set its output and price closer to the allocatively efficient level.

3) **The size of the firm, relative to the minimum efficient scale.**

- The minimum efficient scale (MES) is the minimum level of output at which long-run average cost is minimised.
- If the monopoly's level of output is at or below the minimum efficient scale, there are likely economies of scale. In this case, having a monopoly enables lower LRAC compared to having two smaller firms.
- However, if monopoly output is significantly larger than the MES, this could mean there are **diseconomies of scale**. In other words, long-run average costs are rising as output rises. In this case, having a monopoly firm is inefficient. LRAC would be lower if there were more, smaller firms.

Practice question on monopoly in the style of Edexcel Economics A

This section features a practice question with a short extract, written in the style of Edexcel Economics A.

Short extract*: Transport for London (TfL) is the sole operator of the London Underground (the Tube) network. The Tube takes on 5 million passenger journeys each day, has over 270 stations and over 400 kilometres of train lines. There are high costs to infrastructure investments, such as the tunnels, tracks and stations. This includes the more recently opened Elizabeth line, opened in 2022, with an estimated final cost of £18.9 billion.*

Question: Referring to the extract, evaluate the view that a natural monopoly is beneficial for firms **and** consumers. (15 marks)

Related resources for Edexcel Economics A

Edexcel Economics A notes, model answers and practice questions:
https://tfurber.com/edexcel-economics

Edexcel Economics A Theme 3 notes, model answers and practice questions:
https://tfurber.com/theme-3-edexcel-economics/

Related topics:

- Price discrimination.
- Oligopoly.
- Monopolistic competition.
- Perfect competition.