AQA Economics A-level
Microeconomics

Topic 4: Production Costs and Revenue

4.4 Costs of production

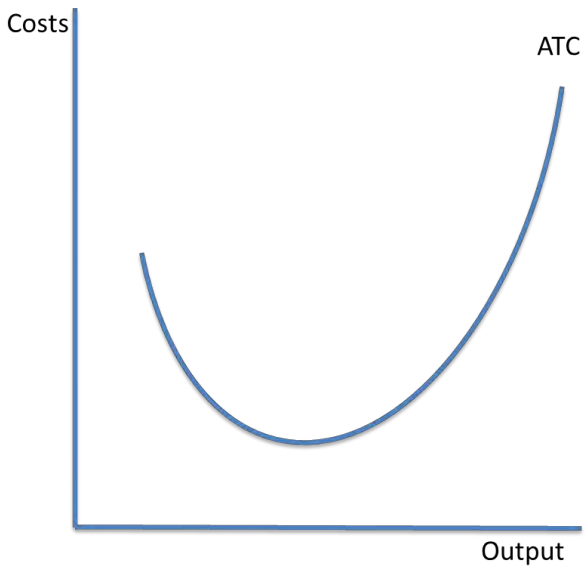
Notes

- **The short run and long run:**

- In the short run, at least one factor of production cannot change. This means there are some **fixed costs**.
- In the long run, all factor inputs can change. This means all costs are **variable**. For example, the production process might move to a new factory or premises, which is not possible in the short run.
- The measure of the short run varies with industry. There is no standard. For example, the short run for the pharmaceutical industry is likely to be significantly longer than the short run for the retail industry.

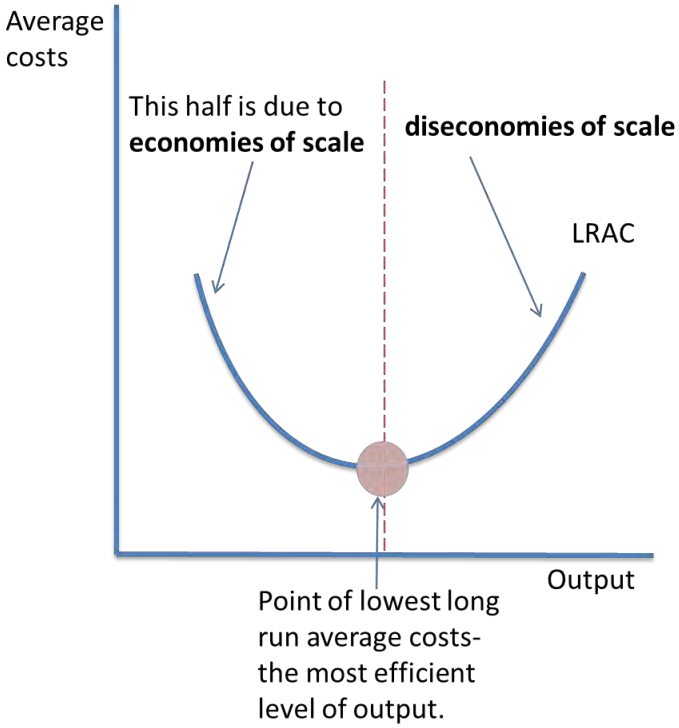
- **Fixed costs** are costs which do not vary with output. For example, rents, advertising and capital goods are fixed costs. They are indirect.
- **Variable costs** change with output. They are direct costs. For example, the cost of raw materials increases as output increases.
- The total cost is the cost to produce a given level of output and is calculated by:
- **Total costs = total variable costs + total fixed costs**
- Average costs is the cost per unit and is calculated by:
- **Average costs = total costs / quantity produced**
- The **marginal cost** of production is the cost of producing one extra unit of output. According to the law of diminishing returns, after a point, marginal costs rise as output increases.

Short run average total cost curve:



- The short run average total cost curve is U shaped due to diminishing returns.
- This is because the factors of production are fixed. At one point, employing more resources will be less productive, which means the marginal output decreases per extra factor of production. Marginal costs start to increase.

Long run average cost curve:



- Initially, average costs fall, since firms can take advantage of **economies of scale.** This means average costs are falling as output increases.
- After the **optimum level of output,** where average costs are at their lowest, average costs rise due to **diseconomies of scale.**

How factor prices and productivity affect firms' costs of production and their choice of factor inputs

- If factor inputs become more productive, firms can produce more output with a smaller input. This results in lower unit costs of production.
- As the average cost per unit of one factor input rises, such as labour, firms are likely to switch to cheaper (and generally more productive) factor inputs, such as capital.