# Production, productivity and business costs

Edexcel IGCSE Economics 4EC1 sections 1.2.1-1.2.3 full package

# Production, productivity and business costs

- name the four **factors of production** and the three **sectors** of the economy;
- explain how the importance of the sectors changes as an economy develops;
- calculate productivity and explain what raises it;

# Production, productivity and business costs (2)

- weigh the advantages and disadvantages of the **division of labour**;
- calculate **revenue**, costs and profit;
- explain economies and **diseconomies of scale** and read a long-run average cost curve.

# Production

- **land** : all natural resources, such as fields, forests, oil, minerals and fish in the sea;
- **labour** : the physical and mental effort of workers;
- **capital** : man-made goods used to make other goods, such as machines, tools, factories and delivery vans;

# Production (2)

- **enterprise** : the skill of an entrepreneur who brings the other factors together and takes the risk of starting a business.
- the **primary sector** takes natural resources from the earth: farming, fishing, forestry and mining;
- the **secondary sector** turns materials into goods: manufacturing and construction;
- the **tertiary sector** provides services: shops, banks, transport, health care, education, tourism.

# Productivity and division of labour

- Rise in productivity $= \frac{10-8}{8} \times 100 = 25\%$.
- If the bakery runs 40 worker-hours a day, daily output rises from $8 \times 40 = 320$ to $10 \times 40 = 400$ loaves, with no extra workers.
- **Land**: fertiliser, drainage, irrigation and **land** reclamation. The hybrid rice developed by Yuan Longping from the 1970s raised rice yields per hectare by about 20%.

# Productivity and division of labour (2)

- **Labour**: education and training make workers more skilled (**human capital** ); migration can bring in skilled workers or fill shortages.
- **Capital**: more machines and new technology. In 2023 China installed about half of all the new industrial robots in the world.

# Figure: Productivity and division of labour



- A car assembly line: each worker or robot repeats one task, which raises output per worker.
- Match each part of the diagram to the text.

# Business costs, revenues and profit

- **Total revenue** (TR) = price $\times$ quantity.
- **Average revenue** (AR) = $\frac{TR}{Q}$, which equals the price.
- **Fixed costs** do not change with output: rent, insurance, loan interest, managers' salaries. They must be paid even if the firm makes nothing.

# Business costs, revenues and profit (2)

- **Variable costs** rise with output: raw materials, energy, hourly wages.
- **Total cost** (TC) = total **fixed cost** (TFC) + total **variable cost** (TVC).
- **Average cost** (ATC) = $\frac{TC}{Q}$; average fixed cost (AFC) = $\frac{TFC}{Q}$; average variable cost (AVC) = $\frac{TVC}{Q}$.

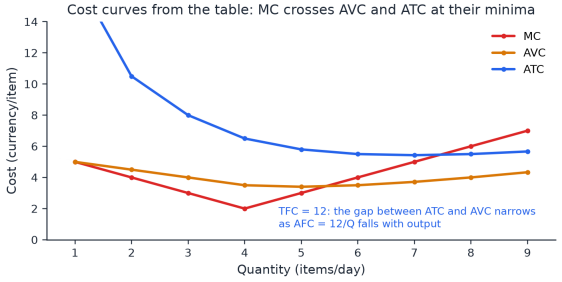
# Business costs, revenues and profit (3)

- **purchasing**: buying in bulk earns discounts;
- **marketing**: the cost of an advertising campaign is spread over more units;
- **technical**: large firms can afford big, efficient machines;

# Business costs, revenues and profit (4)

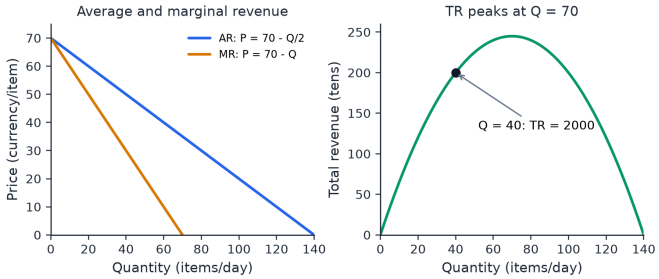
- **financial**: banks lend to large firms more cheaply;
- **managerial**: large firms can employ specialist managers;
- **risk-bearing**: a wide range of products means one failure does less harm.

# Figure: Business costs, revenues and profit



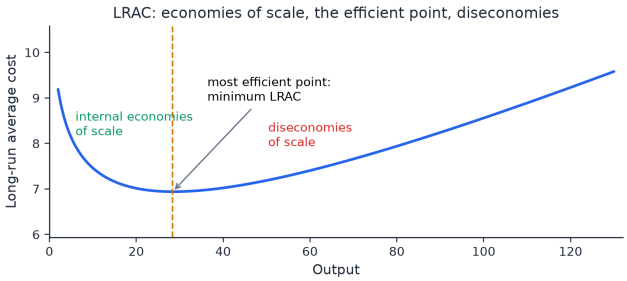

- The cost curves drawn from the table: AVC is lowest at 3.4 and ATC at 5.43.
- Read the axes and units first.

# Figure: Business costs, revenues and profit ·




- **Average revenue** is the demand curve; **total revenue** is largest at an output of 70.
- Match each part of the diagram to the text.

# Figure: Business costs, revenues and profit ..




- The LRAC curve falls with **internal economies of scale**, is lowest at the most efficient size, and rises with diseconomies.
- Read the axes and units first.

# Data-response practice

- (a) Calculate the percentage increase in BYD's sales between 2023 and 2024. [2]
- (b) Using the table, calculate the **average cost** per car at each output. [3]
- (c) Explain **two internal economies of scale** that BYD may gain. [4]

# Data-response practice (2)

- (d) Explain **one** diseconomy of scale that BYD may suffer. [2]
- (e) Evaluate whether large firms are always more efficient than small firms. [9]

# Common errors

- Calling money "**capital**" as a factor of production. Capital means man-made goods used in production, such as machines.
- Confusing production (total output) with productivity (output per worker or per hour).
- Listing **fixed costs** that change with output. Fixed costs stay the same whatever the output.

# Common errors (2)

- Writing profit = **revenue** − price. Profit is **total revenue** − total cost.
- Naming an economy of scale without explaining how it lowers **average** cost.
- Saying **diseconomies of scale** mean total cost rises. Total cost always rises with output; diseconomies mean **average** cost rises.

# Key terms

- **Factors of production**: **land**, **labour**, **capital** and enterprise.
- **Productivity**: output per unit of input, such as output per worker-hour.
- **Division of labour**: splitting production into tasks, each done by a specialised worker.

# Key terms (2)

- **Fixed / variable cost**: a cost that does not change / that changes with output.
- **Average cost**: total cost ÷ output.
- **Economies of scale**: falling **average cost** as a firm or industry grows.
- **Diseconomies of scale**: rising average cost as a firm grows too large.

# Check yourself

- 1.
- Name the sector of the economy for (a) a copper mine, (b) a car factory, (c) a bank. 2.
- A factory's output per worker rises from 20 to 23 units a day.
- Calculate the percentage rise in productivity. 3.