

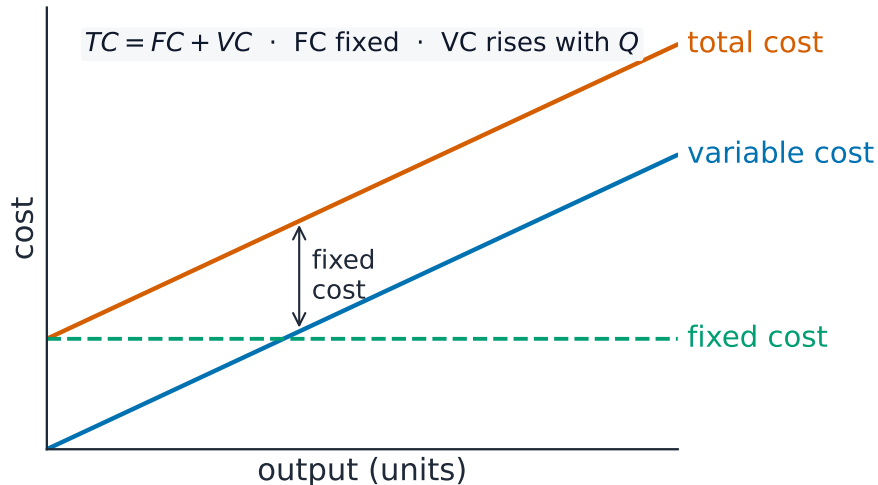
Exercise walk-through

4.2

Costs, scale of production and break-even analysis

IGCSE Business Studies

Types of cost



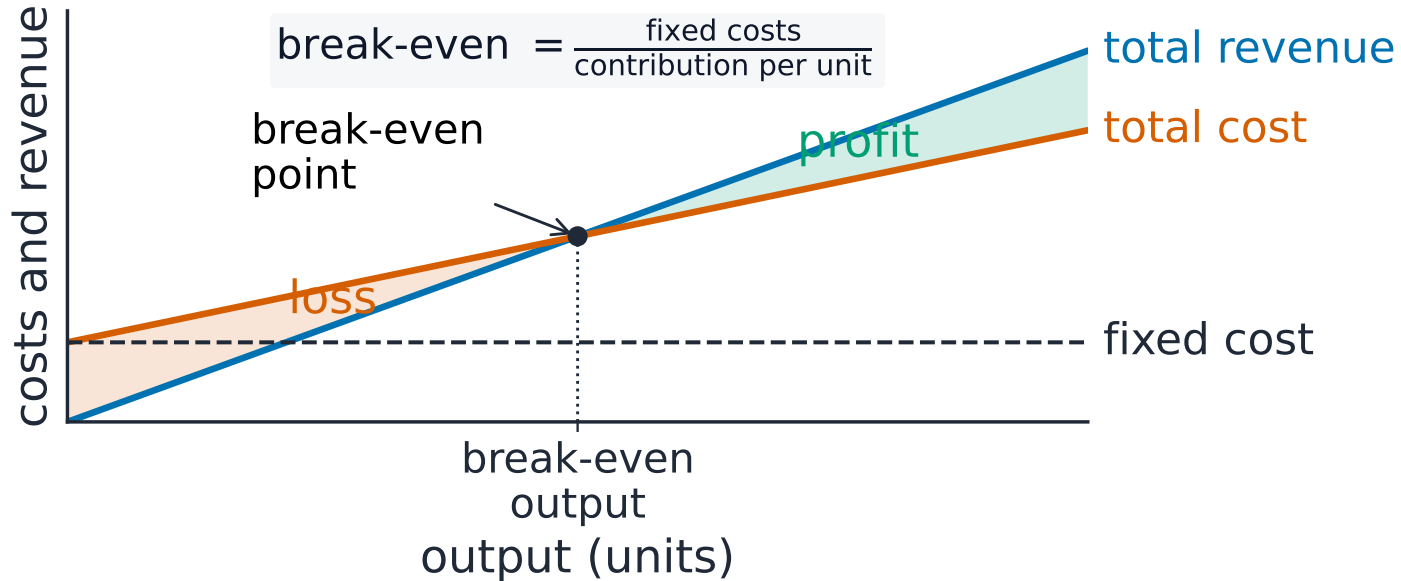
- **fixed costs** do not change with output – rent, salaries, insurance. You pay them even if you make nothing.
- **variable costs** change with **output** – materials, and pay for each item made. More output means more variable cost.
- **total cost** is fixed costs plus variable costs.
- **average cost** is the total cost divided by the number

Break-even

The **break-even point** is where total revenue = total cost (no profit, no loss).

$$\text{break-even} = \frac{\text{fixed costs}}{\text{contribution per unit}}.$$

Break-even, in detail



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Quality

- **quality control** – **check** at the end
- **quality assurance** – **build in** quality throughout

Good quality wins loyal customers & cuts waste.

quality control



quality assurance



Quality, and the two ways to manage it

why quality matters	builds a strong brand and customer loyalty
and	means fewer returns, complaints and wasted materials – so it lowers cost as well as raising price
the risk	poor quality loses customers and damages the brand , which takes far longer to repair than a fault
quality control	inspect at the end and find and remove faulty goods – the waste is already made
quality assurance	build checks into every stage to stop faults happening at all
automation	machines and robots doing tasks – consistent quality, high set-up cost, and fewer jobs

Control finds the fault; assurance prevents it. The saving is in the units that were never made wrong.

Exercises 2.1·2.2

2.1 Define the term *fixed cost*.

[2]

2.2 A firm has fixed costs of \$4,000 and variable costs of \$3 per unit, and makes 1,000 units. Calculate the total cost.

[2]

Exercises 2.1·2.2

2.1 Define the term *fixed cost*.

[2]

2.1

- a **fixed cost** does **not change with output** (rent, salaries) (K)

2.2 A firm has fixed costs of \$4,000 and variable costs of \$3 per unit, and makes 1,000 units. Calculate the total cost.

[2]

2.2

- total cost = fixed + variable $\times$ output

$$\$4\,000 + (1\,000 \times \$3) = \$7\,000$$

(K)

Exercise 2.3

2.3 State what the *break-even* point means.

[2]

Exercise 2.3

2.3 State what the *break-even* point means. [2]

2.3

- **break-even** is the output where **total revenue equals total cost** (no profit, no loss) (K)

Exercise 3.1 (a)

3.1 A product sells for \$20 with a variable cost of \$8 per unit. Fixed costs are \$6,000.

(a) Calculate the contribution per unit.

[1]

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(a) Calculate the contribution per unit.

[1]

(a)

- contribution = price – variable cost

$$\$20 - \$8 = \$\mathbf{12}$$

(K)

Exercise 3.1 (b)

3.1 A product sells for \$20 with a variable cost of \$8 per unit. Fixed costs are \$6,000.

(b) Calculate the break-even output.

[2]

Exercise 3.1 (b)

3.1 A product sells for \$20 with a variable cost of \$8 per unit. Fixed costs are \$6,000.

(b) Calculate the break-even output.

[2]

(b)

$$\text{break-even} = \frac{\$6\,000}{\$12} = \mathbf{500} \text{ units}$$

(K)

Exercise 3.1 (c)

3.1 A product sells for \$20 with a variable cost of \$8 per unit. Fixed costs are \$6,000.

(c) The firm makes 700 units. Calculate the margin of safety. [2]

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(c) The firm makes 700 units. Calculate the margin of safety. [2]

(c)

- margin of safety = actual – break-even

$$700 - 500 = \mathbf{200} \text{ units}$$

(K)

Exercises 3.2-3.3

3.2 Explain one benefit and one limitation of break-even analysis. [6]

3.3 Do you think break-even analysis is useful to a small business? Justify your answer.[6]

Exercises 3.2-3.3

3.2 Explain one benefit and one limitation of break-even analysis. [6]

3.2

- **benefit:** shows how many units must be sold to avoid a loss → sales target $(K + A_n)$
- **limitation:** assumes all output is sold and price/costs stay the same → only a guide $(K + A_n)$

3.3 Do you think break-even analysis is useful to a small business? Justify your answer.[6]

3.3

- **for:** quick, shows break-even and margin of safety, supports a loan
- **against:** assumptions (all sold; constant price and costs) are unrealistic
- **judgement (Ev):** a helpful planning guide, not a decision on its own – it depends on how stable prices and costs are