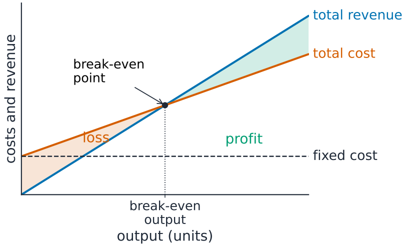
Operations Management

IGCSE Business Studies ▪ Topic 4

IGCSE Business Studies

What we will cover

1. Methods of production
2. Productivity & lean production
3. Types of cost
4. Break-even
5. Quality



break-even

Methods of production

job

one unique item at a time

batch

a group, then switch to another

flow

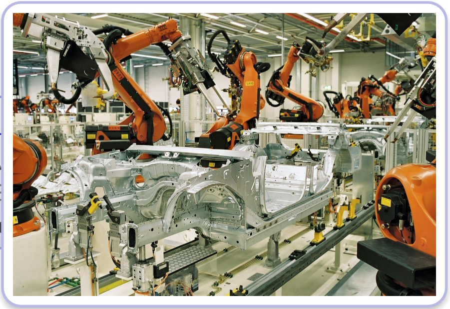
a non-stop line

factory line

Productivity and lean production

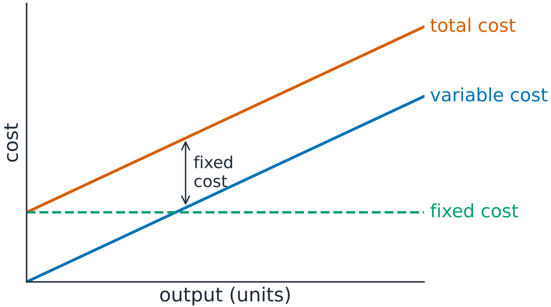
productivity 生产率
output per worker; raise it with training, technology & motivation

lean produ
cut all w
time 准
tle **inv**



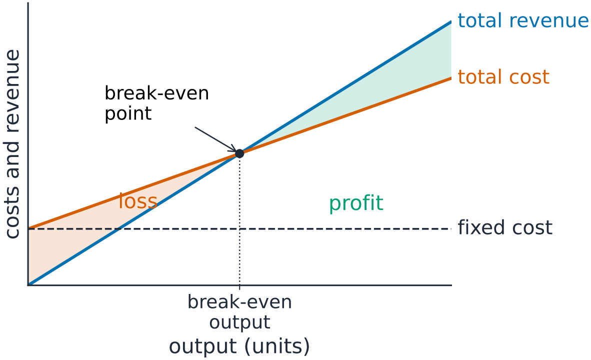
industrial robots

Types of cost



warehouse

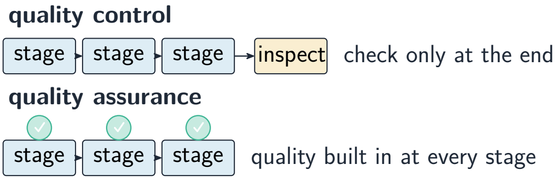
Break-even



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

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

Quality



- **quality control** 质量控制 – check at the end
- **quality assurance** 质量保证 – build in quality throughout

Good quality wins loyal customers & cuts waste.

Worked example – total and average cost

Fixed costs are £8,000, variable cost is £2 per unit, and the factory makes 1,000 units.

- Total variable cost $= 2 \times 1{,}000 = £2{,}000$
- Total cost $=$ fixed $+$ variable $= 8{,}000 + 2{,}000 = £10{,}000$
- Average cost $= \dfrac{\text{total cost}}{\text{output}} = \dfrac{10{,}000}{1{,}000} = £10$
- Make more and AC falls: the fixed cost is spread over more units.

Fixed costs do not change with output (rent); variable costs do (materials). Spreading fixed costs is exactly what economies of scale means.

Topic 4 – key takeaways

1 Methods

job, batch & flow production

2 Lean

cut waste; just-in-time holds little stock

3 Costs

total = fixed + variable; average = total/output

4 Break-even

where total revenue = total cost

Check yourself

1. Which method suits a one-off wedding cake?
2. Do fixed costs change with output?
3. What is true at the break-even point?
4. When does quality control check the product?

Answers **1.** job production **2.** no **3.** total revenue = total cost **4.** at the end of production