



# Costs

- Whenever firms produce goods or provide services they incur costs
- There are two main types:
  - **Fixed Costs**
    - Sometimes called **OVERHEAD COSTS** or **INDIRECT COSTS**, these are costs that are not affected by the amount of trade done by the firm, or by the output produced
      - ◆ *Examples of fixed costs include: rent, mortgage repayments, salaries.*
  - **Variable Costs**
    - Sometimes called **DIRECT COSTS**, these are costs that change in direct proportion to the amount of trade done, or the number of goods produced
      - ◆ *Examples of variable costs are: raw materials, petrol, maintenance.*



# Calculating Total Costs

- Once a firm knows their fixed and variable costs they can calculate their **TOTAL COSTS**:
- Total cost is the cost of producing any given level of output
- As such total costs are calculated as:

$$\text{Total Costs} = \text{Fixed Costs} + \text{Variable Costs}$$





# Other Costs

- There are 3 other types of costs to consider:

- **Semi-variable costs**

- These are a mixture of fixed and variable costs. E.g. a certain element of a phone bill will be fixed (the standing charge)

- **Average costs**

- This is how much, on average it costs to make each unit produced. It is calculated by the formula:

$$\text{Average Cost} = \frac{\text{Total Cost}}{\text{Total Output}}$$

- **Marginal costs**

- This is the cost of producing ONE extra unit of output, and is calculated using the following formula:

$$\text{Marginal Cost} = \frac{\text{Change In Total Cost}}{\text{Change In Output}}$$



# Maximum Efficiency

- Economically firms should operate as efficiently as possible
- Mathematically this occurs where the average cost is at a minimum
- However firms will not necessarily produce at this point
  - - they will usually produce where profits are being maximised
- In order to do this they need to consider their **TOTAL REVENUE** and **PROFIT**





# Total Revenue and Profit

- Total Revenue (TR) is the total amount of money a firm receives from selling its products or services.

It is calculated as:

$$\text{TR} = \text{Price} \times \text{Quantity}$$

- Once a firm knows its costs and revenues it can calculate whether it is making a profit or a loss using the formula:

$$\text{Profit} = \text{TR} - \text{TC}$$



# Is It Worth Producing?

- How much profit a product makes is not the only thing that should be considered
- A product may be unprofitable in the short-term, but still worth producing because it makes a **CONTRIBUTION** to fixed costs

The Contribution = Price - variable cost per unit

- If a product is making a positive contribution then it is worth producing until a better product can be found
- This is because stopping production would mean its contribution would have to be found elsewhere



# An Example

- In this example a business produces 3 different products, and spreads the £48,000 fixed costs equally

Product	X	Y	Z
Selling Price	£16	£11	£12
Variable Cost	£8	£7	£8
Contribution	£8	£4	£4
Quantity	4000	5000	1500
Total Contribution	£32,000	£20,000	£6,000
Fixed Costs	£16,000	£16,000	£16,000
Profits	£16,000	£4,000	-£10,000

- Therefore, total profits are £10,000
- Should the company continue to produce product C?



# The Effect of Withdrawing Product C

- Without product C the fixed costs of £48,000 now have to be spread equally across two products

Product	A	B
Selling Price	£16	£11
Variable Cost	£8	£7
Contribution	£8	£4
Quantity	4000	5000
Total Contribution	£32,000	£20,000
Fixed Costs	£24,000	£24,000
Profits	£8,000	- £4,000

- The new profit figure is £4,000, (£6,000 lower)
  - Since product C was making a £6,000 contribution
- Therefore it is more profitable to continue producing product C, even though it is making a loss!