

Chapter 3 - Cost - Volume - Profit analysis

1. Cost behavior

- Costs represents the resources sacrificed to achieve benefits;
- Fixed costs = remain constant with the volume of output
- Variable costs vary according to the volume of activity

2. Different types of costs

- **Fixed costs:** the amount of fixed cost (distance OF) remains the same irrespective of the volume of activity.
 - rent, insurance, cleaning cost, staff salaries
 - redundancies may incur with fixed costs savings
 - fixed costs are likely to be affected with **inflation** !
 - always **time based**: the level of fixed cost does not stay the same irrespective of the time period involved.
 - fixed costs varies with time but not the level of output !
 - constitutes the bulk of total costs
 - **stepped fixed costs**
- **Variable costs:** costs varies with the volume of activity (ie. cost of raw materials)
 - costs increases in a straight line as the activity increases
 - it is assumed that variable costs are varying **constantly/consistently** with the level of output
- **Semi-fixed/Semi-variable costs** have elements of both
 - analysis with the **high low method**: in a business where TC is not divided into VC and FC we can use this method to calculate the VC and FC separately; based on the assumption that FC remains the same and increase in cost relative to VC.
 - In this method, an assumption is made that the difference between the 2 quarterly figures is caused entirely by the VC
- **Line of best fit** uses the **least squares regression**; the slope of the line gives the VC

3. Break Even Point

- BE: where there is neither profit nor loss.

$$\text{Total revenues} = \text{Total costs}$$

$$\text{Total sales revenue} = \text{FC} + \text{VC}$$

$$\text{BEP} = \text{FC} / (\text{Sales revenue per unit} - \text{VC per unit})$$

$$\text{BEP point} * \text{Sales revenues} = \text{BEP in revenues}$$

4. Contribution

- the denominator of the BEP formula is the contribution per unit
- Contribution to meeting the fixed costs, if there is any excess then its is in the profit.
- **Contribution margin ratio:** the contribution of an activity expressed as a percentage of sales

$$\text{CMR} = \text{Contribution} / \text{Sales revenue}$$

$$\text{CMR\%} = (\text{Sales revenue per unit} - \text{VC per unit}) / \text{Sales revenue} * 100$$

5. Margin of Safety