

Unit 2: MARGINAL COSTING

Meaning of Absorption Costing

Absorption costing is also known as full costing. It is a conventional technique of ascertaining cost. It is the practice of charging all costs both variable and fixed to operations, processes and products. It is the oldest and widely used technique of ascertaining cost. Under this technique of costing, cost is made up of direct costs plus overhead costs absorbed on some suitable basis.

Meaning of Marginal Cost

Marginal cost is the variable cost comprising prime cost and variable overheads. It may be defined as “the amount at any given volume of output by which the aggregate costs are changed if the volume of output is increased or decreased by one unit”.

Definition of Marginal Costing

According to CIMA Marginal Costing is, “the ascertainment by differentiating between fixed cost and variable cost of marginal cost and of the effect on profits of changes in volume or type of output”.

Features of marginal costing

The main characteristics of marginal costing are summarized as follows:

- 1) All elements of costs are classified into fixed and variable components.
- 2) The marginal cost is treated as the cost of the product.
- 3) The value of stock of finished goods and work in progress also comprises only marginal cost.
- 4) Fixed costs are charged to profit and loss account of the period during which they are incurred.
- 5) Prices are based on marginal cost plus contribution.
- 6) The relative profitability of products is determined after a study of the contribution made available by each product.

Profit Volume Ratio

This is a useful guide in determining the profitability of the business. Profit volume ratio shows the relationship between contribution and sales and is usually expressed in percentage. A formula for computing profit volume ratio is given below.

- 1) Profit volume ratio = $\frac{\text{Contribution}}{\text{Sales}} \times 100$
- 2) Profit volume ratio = $\frac{\text{Sales} - \text{Variable cost}}{\text{Sales}} \times 100$
- 3) Profit volume ratio = $\frac{\text{Fixed cost} + \text{Profit}}{\text{Sales}} \times 100$
- 4) Profit volume ratio = $\frac{\text{Change in profit}}{\text{Change in sales}} \times 100$

Uses of Profit Volume Ratio

- 1) The BEP and Variable cost can be easily computed with the help of profit volume ratio.
- 2) The margin of safety can also be calculated with the help of this ratio.
- 3) It is also used to ascertain the sales to attain the desired profit.
- 4) This ratio also helps in ascertaining the profit at any given amount of sales.

The following formula can be used to ascertain the sales or fixed cost or profit.

$$\text{Sales} = \frac{\text{Fixed cost} + \text{profit}}{\text{Profit volume ratio}}$$

$$\text{Sales (units)} = \frac{\text{Fixed cost} + \text{profit}}{\text{Contribution per unit}}$$

$$\text{Contribution per unit} = \text{Selling price per unit} - \text{Variable Cost per unit.}$$

How to improve profit volume ratio?

Profit volume ratio can be improved if contribution is increased and this can be done by any of the following ways:-

- a) Reducing the variable cost.
- b) Increasing the selling price.
- c) Selling more profitable products where the relative contribution margin is larger.

Contribution:

The difference between the selling price and the variable cost is known as contribution. In other words, it is the excess of selling price over variable cost. A formula for computing contribution is given below:

- 1) Contribution = Sales - Variable cost
- 2) Contribution = Fixed cost + profit
- 3) Contribution = Sales x Profit volume ratio

Uses of Contribution

- 1) The contribution margin is of considerable help in accepting or rejecting a new order.
- 2) It also helps in selection of a product mix.
- 3) The contribution margin is also used while choosing alternative methods of production.

Break Even Point

Breakeven point is the point where the total cost is equal to total revenue. It is a point of no profit and no loss. It is also known as the volume of operations where the profit begins. The formula for computing break even point is given below:

- 1)
$$\text{BEP (Units)} = \frac{\text{Fixed cost}}{\text{Contribution per Unit}}$$
- 2)
$$\text{BEP (Value)} = \frac{\text{Fixed cost}}{\text{Profit volume ratio}}$$
- 3)
$$\text{BEP (Value)} = \frac{\text{Fixed cost}}{\text{Contribution}} \times \text{Sales}$$
- 4)
$$\text{BEP (Value)} = \text{BEP (Units)} \times \text{selling price per unit}$$

Margin of Safety

The excess of actual sales over BEP is called the margin of safety. A company whose sales volume is just equal to the BEP is making no profit or no loss. The margin of safety at BEP is therefore, equal to zero. The formula for computing margin of safety is given below.

- 1) Margin of safety = Actual sales - BEP
- 2)
$$\text{Margin of safety} = \frac{\text{Profit}}{\text{Profit volume ratio}}$$

How to improve margin of safety

The following steps may be taken to improve unsatisfactory margin of safety.

- 1) Control and reduce fixed cost.
- 2) Control and reduce variable costs.
- 3) Increase the selling price.
- 4) Increase the sales volume.
- 5) Improve contribution by changing the sales mix.

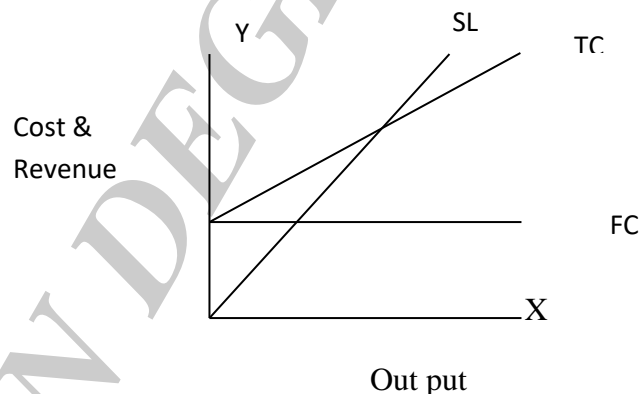
Formula to ascertain the sales or fixed cost or profit

$$\text{Sales (value)} = \frac{\text{Fixed cost} + \text{Profit}}{\text{Profit Volume Ratio}}$$

$$\text{Sales (units)} = \frac{\text{Fixed cost} + \text{Profit}}{\text{Contribution per unit}}$$

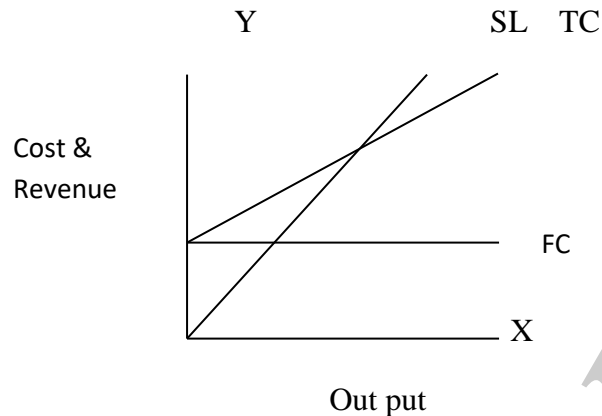
Angle of Incidence:

This is an angle formed by the sales line and the total cost line at the BEP. The angle of incidence indicates the rate at which the profits are being earned. A large angle of incidence indicates a high rate of profit; a small angle indicates a low rate of earnings.



Break Even Chart

Although break even analysis is primarily a mathematical technique it can be expressed in the break even chart. The break even chart is the graphic presentation which shows the varying costs along with varying sales. It indicates the breakeven point and also shows the estimated profit or loss at different levels of production.



Break Even Analysis

The study of cost - volume - profit relationship is often referred to as break even analysis. The break even analysis is interpreted in narrow sense as well as broad sense. In its narrow sense, it is concerned with finding out of the break even point. BEP is the point at which total cost is equal to total sales i.e., point of no profit no loss. In its broad sense, break even analysis means a system of analysis that can be used to determine the probable profit at any level of production.

Assumptions of break even analysis

Break even analysis is based on a series of assumptions.

- 1) All cost can be separated into fixed and variable components.
- 2) Fixed cost will remain constant at all volume of output.
- 3) Variable costs will fluctuate in direct proportion to volume of output.
- 4) Selling price will remain constant.
- 5) There is only one product or in case of multiple products the sales mix will remain constant.
- 6) Production and sales will be synchronized.
- 7) Productivity per worker will remain unchanged.
- 8) There will be no change in the general price level.

Uses of break even analysis

The important uses to which break even analysis may be put as follows:

- 1) Determination of the selling price which will give the desired profit.
- 2) Forecasting costs and profits as a result of change in volume.
- 3) Suggestions for shift in sales mix.
- 4) Inter firm comparison of profitability.

- 5) Determines costs and revenues at various levels of output.
- 6) Impact of increase or decrease in fixed cost or variable cost on profits.

Differences between absorption costing and marginal costing.

Absorption costing and marginal costing systems differ in respect of following points:

- 1) Absorption costing is a total cost technique i.e., both variable cost and fixed cost are charged to products, process or operations.
Under Marginal costing system, only variable costs are charged to products, process or operations.
- 2) In absorption costing the stock of finished goods and work-in-progress are valued at total cost but in marginal costing the stock of finished goods and work-in-progress are valued at variable cost only.
- 3) In absorption costing, arbitrary apportionment of fixed cost leads to under or over absorption of fixed cost. Marginal costing excludes fixed cost and the question of arbitrary apportionment does not arise.
- 4) In absorption costing managerial decisions are guided by profits which is excess of sales over total cost. In marginal costing, the managerial decisions are guided by contribution which is the excess of sales over variable cost.