DEPARTMENT OF COMMERCE (CA)

Management Accounting

Sem : VI Sub code: 18BCA61C

Unit - IV III - B.Com(CA)

Break - even Analysis.

Books Refeences:

1. Management Accounting
   - I.M. Pandey.
2. Management Accounting
   - T.S. Reddy & Y. Hari Prasad Reddy.

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Marginal Costing

Meaning of Marginal Costing:

Marginal Costing is a technique of Costing fully oriented towards Managerial decision Making and control. Marginal Costing is helpful in determining the profitability of products, departments, Processes and cost Centres.

Marginal Costing is the ascertainment of Marginal costs and of the effect on profit of changes in volume (or) type of output by differentiating between fixed cost and variable cost.

Features of Marginal Costing:

* Marginal Costing is a technique of control (or) decision Making.

* Under Marginal Costing the total cost is classified as fixed and variable cost.
* Contribution is ascertained by reducing the Marginal cost (or) variable cost from the Selling price.
* The Profitability of products, departments or processes is determined on the basis of Contribution.
* Profit is ascertained by reducing the fixed cost from the Contribution of all the Products (or) departments (or) processes.
* The profitability of various levels of activity is ascertained by calculating cost-volume-profit relationship.

Advantages of Marginal Costing:

* Simplicity
* Stock Valuation
* Meaningful reporting
* Effect of fixed cost
* Profit planning.
* Cost Control and cost reduction
* Pricing policy

Limitations of Marginal Costing

* Classification of cost
* Not suitable for external reporting
* Lack of long-term perspective
* Under valuation of stock
* Production aspect is ignored
* Not applicable in all type of business
* Less scope for long term policy decisions.

Cost-Volume Profit Analysis.

Cost-volume profit analysis of three variables viz., cost, volume and profit. This analysis measures variation of costs and volumes and their impact on profit. profit is affected by several internal and external factors which influence sales, revenue and cost.

Some Important Concepts and Terms in Cost-Volume-Profit Analysis

① Fixed cost:

The fixed costs do not normally change upto the full capacity of a firm. They do not depend on the volume of production and sales.

Variable Cost:

These are the costs which increase (or) decrease in proportion to the output and sales. The variable costs vary in total but they remain ~~Constant~~ Constant per unit.

Contribution:

Contribution is the difference between Sales and Marginal cost.

Contribution = Sales − Marginal cost (or)

Contribution = fixed exp + Profit.

Contribution to Sales (or) P/v Ratio (Profit volume Ratio)

This is the ratio of Contribution to Sales. The relationship between Sales and Contribution.

$$P/v\ Ratio = \frac{Contribution}{Sales}$$

$$= \frac{Sales - Variable\ Cost}{Sales}$$

$$= \frac{Fixed\ Cost + Profit}{Sales}$$

When two periods profit and sales are given, the P/v ratio is calculated as:

$$P/v\ Ratio = \frac{Change\ in\ profit}{Change\ in\ Sales}$$

Break even Analysis and Break even Point-

Break even analysis determines at what level Cost and revenue are in equilibrium.

"Break even point is that point of activity (sales volume) where total revenues and total expenses are equal. It is the point of zero profit and zero loss"

$$\text{Break Even point (in units)} = \frac{\text{Fixed Expenses}}{\text{Selling price per unit} - \text{Marginal cost per unit}}$$

$$= \frac{\text{Fixed cost}}{\text{Contribution Per unit}}$$

$$= \frac{\text{Break even Sales value}}{\text{Selling Price per unit}}$$

$$\text{Break even Sales value in Rupees} = \text{BEP in units} \times \text{Selling Price per unit.}$$

$$\text{(or)} \quad \frac{\text{Fixed cost}}{\text{P/V Ratio}} = \frac{F}{\text{P/V ratio}}$$

$$\text{Break even ratio} = \frac{\text{Break even sales}}{\text{Actual Sales}} \times 100$$

Margin of Safty :

Margin of Safety = Actual Sales − Break even Sales

(or)

$$= \frac{\text{Profit}}{\text{P/V ratio}}$$

$$\text{Margin of Safty Ratio} = \frac{\text{Margin of Safty}}{\text{Actual Sales}} \times 100$$

Applications of Marginal Costing :

*) Key factor (or) Limiting factor
* Make (or) buy decisions
* Fixation of Selling Price
* Export decision
* Product elimination decision
* Plant- Merger decision
* Further Processing decision
* Shut-down decision.
* Sales mix decision
* Plant Purchase decision.

Problems & Solutions :-

Problem 1

The fixed expenses of an industrial Concern amount to Rs 180000. Its variable cost Per unit is Rs 29 and selling price is Rs 44 Per unit Calculate the Break even point.

Solution :

(1) Contribution Per unit = Selling Price Per unit − variable cost per unit

$= 44 - 29 = 15$

(2) P/V Ratio $= \frac{\text{Contribution}}{\text{Sales}} \times 100$

$= \frac{15}{44} \times 100 = 34\%$ (approx)

(3) Break even point (in units) $= \frac{\text{Fixed expenses}}{\text{Contribution Per unit}}$

$= \frac{180000}{15} = 12000$ units

(4) Break even Point (in Rupees) $= \frac{\text{Fixed Expenses}}{\text{P/V Ratio}}$

$= \frac{180000}{\frac{15}{44}}$

$= \frac{180000}{15} \times 44 = \boxed{528000}$

Problem : 2

(a) Calculate break even point from the following
Sales 1,000 units @ Rs 10 each Rs 10000
fixed cost Rs 8,000

(b) If the Selling Price is reduced to Rs 9, what is the new break even point?

Solution:

(a) Contribution Per unit = Selling Price Per unit − Variable Cost per unit

= 10 − 6 = 4

(b) P/V Ratio = $\frac{\text{Contribution}}{\text{Sales}} \times 100$

= $\frac{4}{10} \times 100 = 40\%$

(c) Break even Point (in units) = $\frac{\text{fixed expenses}}{\text{Contribution Per unit}}$

= $\frac{8000}{4} = 2000$ units.

(d) Break even Point (in Rupees) = $\frac{\text{Fixed expenses}}{\text{P/V Ratio}}$

= $\frac{8000}{40\%} = ₹ 20000$

(b) New Selling Price = 9

New Contribution = 9 − 6 = 3

New P/V Ratio = $\frac{3}{9} \times 100 = 33\frac{1}{3}\%$

New break even point = $\frac{\text{Fixed Expenses}}{\text{Contribution Per unit}}$

(in units) = $\frac{8000}{3} = 2.667$ units

New break even Point (in Rupees) = $\frac{\text{Fixed Expenses}}{\text{P/V Ratio}}$

$= \frac{8000}{\frac{3}{9}} = 8000 \times \frac{9}{3}$

= 24 000/-

Problem : 3

From the following information relating to Palani Bros. Ltd., You are required to find out (a) P/V Ratio (b) Break even Point (c) Profit (d) Margin of Safety (e) Volume of Sales to earn Profit of Rs 6000.

Total fixed costs	- 4500
Total variable costs	- 7500
Total Sales	- 15000

Marginal Cost and Contribution Statement

Particulars		Amount
Sales	=	15000
less: variable cost	=	7500
Contribution	=	7500
less: Fixed cost	=	4500
Profit	=	3000

(a) P/V Ratio $= \frac{\text{Contribution}}{\text{Sales}} \times 100$

$= \frac{7500}{15000} \times 100 = 50\%$

(b) Break even Sales $= \frac{\text{Fixed Expenses}}{\text{P/V Ratio}}$

$= \frac{4500}{50\%} = 9000/-$

(c) Profit = 3000

(d) Margin of Safety = Sales − Break even Sales

$= 15000 - 9000$

$= 6000/-$

(e) Sales to earn Profit of Rs 6000

Required Sales $= \frac{\text{Fixed Cost} + \text{Required Profit}}{\text{P/V Ratio}}$

$= \frac{4500 + 6000}{50\%} = 21000/-$