



Module-D Unit-6

JAIIB PAPER-3

Accounting & Financial Management for Bankers(AFM)



JAIIB Paper 3 (AFM) Module D Unit 6 – Marginal Costing

Meaning Of Marginal Costing

- Marginal cost is the cost of producing one additional unit of product or service.
- According to CIMA, 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 costs and variable costs.
- In this technique of costing, only variable costs are charged to operations, processes or products, leaving all indirect costs to be written off against profits, in the period in which they arise.

Thus, marginal costing is the accounting system in which only

- Variable costs are charged to cost units
- Fixed costs are charged to the contribution or profit.

Features Of Marginal Costing

Marginal costing is distinct from other costing techniques. Its unique features can be summarised as under:

- Marginal costing involves both cost recording and cost reporting.
- Under marginal costing, $TC = VC + FC$. Some costs which have features of both fixed and variable costs, are segregated as semi-variable costs.
- Only the average variable cost of a unit is considered as its value.
- Fixed costs are not taken into account for calculating the product cost and are charged to revenue of the period in which they are incurred.
- Marginal contribution of a product or department is taken into account for calculating its profitability.

Advantages Of Marginal Costing

Some of the main distinct advantages of Marginal Costing are as under:

- Marginal costing provides a better and more rational basis for deciding the sales prices of products and services under adverse business environment/recession
- The organisation need not have two separate sets of records as data required for profit planning under marginal costing is easily retrievable from the regular accounting records.
- Break-even point, which is of great importance for any management, can be determined only through marginal costing.
- Marginal costs and contribution figures make easier the relative appraisal of products, territories and various segments of the business.
- Marginal costing offers more effective plans for cost control compared to other techniques of costing.
- The marginal costing effectively emphasizes the impact of fixed costs on profits.

- Marginal costing provides a very effective tool to the management to formulate marketing strategies specially under difficult market conditions.
 - ❑ **For example:** Suppose a company producing steel is not able to increase its capacity utilisation beyond 70% as the domestic market is saturated with supply from local producers. The company can export to a neighbouring country but the prevailing price of steel there is less than that in India. The management has to decide whether to export or not at lower prices.
 - ❑ Marginal costing tells what the variable cost of production is, and if the export price is more than the variable cost of production, it may be a good decision to export.

This will have two benefits.

- First, the company will gain at least some “Contribution” as the export price is more than the variable cost.
- Second, the country will gain through increased deployment of labour and narrowing of trade deficit.

Limitations/Disadvantages Of Marginal Costing

Some of the main limitations/disadvantages of Marginal Costing are as under:

- Segregation of costs into fixed and variable costs is not easy as some expenses have characteristics of both and cannot be done with precision. The personal judgement of the accountant comes into play and it may not always be correct.
- The assumption that the fixed costs do not vary at all and the variable costs are 100% proportional to the volume of production, is not realistic.
- In practice, the fixed costs may show an increase if the volume of production increases beyond a certain level, specially if additional plant and machinery is required to be used.
- Similarly, the relationship between the variable costs and the volume may not be linear, specially over a longer period of time.
- Under marginal costing technique, the inventory valuation may become unrealistic as fixed costs are not included in the value of work-in-process and finished goods.
- In case of seasonally sensitive products, this may result in inflated profit during the periods of higher sales and deflated profit during the periods of lower sales.
- The assumption under marginal costing, that the sales price per unit will remain same irrespective of production and sales is not realistic. In practice, too much production and availability of a product may affect its sales value.

Cost-Volume-Profit (CVP) Analysis

- This analysis involves classification of every cost as either a fixed cost or a variable cost.
- A fixed cost is one that is independent of the level of sales.

- For example: insurance cost, salary of permanent staff, rent paid.
- A variable cost is directly related to the level of sales.
- **For example:** cost of materials used in the goods sold, direct labour cost, commission paid on sales.

The basic formula of CVP analysis, when profit, sales volume and costs, all are expressed in money terms, is:

Profit = Sales Volume – Costs

Who invented this formula may be debatable but, it is certain the first person of the mankind, who started a business, knew it.

The concept of marginal costing has refined this formula as under:

Profit = Sales Volume – (Fixed Costs + Variable Costs) or,

$$P = (S \times N) - [F + (V \times N)]$$

Where, P = Profit,

S = Sales value per unit

N = Number of units sold

F = Fixed Costs

V = Variable Cost per unit

Illustration:

A firm, manufacturing thermometers, has fixed costs of ₹ 1,00,000 and variable cost of ₹120 per unit. Sales price is ₹160 per unit. During the year, it sold 3000 thermometers. What is the profit of the firm during the year? Applying the CVP analysis, we calculate the profit as under:

$$P = (S \times N) - [F + (V \times N)]$$

$$P = (160 \times 3000) - [1,00,000 + (120 \times 3000)] =$$

$$4,80,000 - (1,00,000 + 3,60,000)$$

$$4,80,000 - 4,60,000 = ₹20,000$$

Break-Even Analysis

The break-even analysis, which is a part of Cost–volume– profit (CVP) analysis, also involves finding correlation between the fixed costs, variable costs, sales revenue and profit. Whenever one unit of the **product is sold, its sales value minus its variable cost provides a surplus which goes** towards meeting the fixed expenses.

This sales value of one unit minus its variable cost is called “**Contribution**” as this is what one unit of the product contributes towards recovering the fixed expenses.

Break-even level is that activity level at which all relevant fixed costs are recovered and there is no profit or no loss. For activity level below the breakeven level, the company will make losses, while above this level it will make profit.

Illustration:

A company manufacturing LED bulbs has the following financial information:

a) Total fixed costs ₹ 2,00,000

b) Sales price per bulb ₹ 60

c) Cost of all direct inputs like material, labour, utilities etc. ₹ 40

d) We have to calculate the Break-even level.

- As the sales price of one bulb is ₹ 60 and its variable cost is ₹ 40, the contribution is ₹ 20(60-40).
- So, sale of each bulb contributes ₹ 20 towards meeting the fixed cost. We have total fixed cost ₹ 2,00,000. For meeting this cost, we have to sell $2,00,000/20 = 10,000$ bulbs.
- As this activity level of selling 10,000 bulbs, the fixed costs are fully met and there is no profit or loss.
- **The next bulb we sell, results in profit of ₹ 20 as the fixed costs have already been met.**

The break-even point can be expressed in any of the following ways:

- **In number of units: Example:** In the above illustration, the B-E point is 10,000 units.
- **In sales volume in money terms: Example:** In the above illustration, the B-E point is sales volume of ₹6,00,000.
- **In percentage capacity utilisation: Example:** In the above illustration, if the total capacity of the plant is to manufacture 20,000 bulbs per year, the B-E point is 50%. ($10,000/20,000 = 0.5$ or, 50% of the plant capacity).

Applications Of Break-Even/Cost-Volume-Profit Analysis

- In appraising the term loan proposals, the financier expects that the operations will be substantially above the break-even level so that, term loan is repaid within a reasonable period, from the surplus generated.
- If the break-even point of the project is calculated to be very high, say 75%, the margin of safety available to the project to withstand unexpected disruptions, and operate substantially above the break-even level, becomes narrow. The financiers, therefore, prefer projects which have a lower break-even level.
- **Some of the other applications/uses of break-even/CVP analysis are as under:**

- ✓ **The** management gets a clear idea of the minimum level of activity below which it cannot afford to operate.
- ✓ It helps in devising an incentive scheme as the management has **clear idea** about impact of increased production on the profit vis-à-vis the cost of incentives.
- ✓ It helps in comparing the relative profitability of different products.
- ✓ It helps the management in deciding if the production of a particular component or product is to be outsourced.
- ✓ It provides a very effective tool to the management to formulate marketing strategies specially under difficult market conditions.

Profit-Volume Ratio & Its Significance

- Profit-volume ratio, known as P/V ratio is an important concept in marginal costing.
- It represents the ratio of each unit's contribution to its sales price.
- It is expressed in percentage terms.
- So, if C is the contribution and S is the sales price per unit,

$$\text{P/V ratio} = (C/S) \times 100$$

Illustration:

If the unit sales price is ₹ 160 and its variable cost is ₹ 120, the P/V ratio will be:

$$\begin{aligned} & [(160 - 120) / 160] \times 100 \text{ (because the contribution of each unit is ₹ 160 - ₹ 120)} \\ & = (40 / 160) \times 100 = 25\% \end{aligned}$$

- **Significance of P/V ratio:** In a multiproduct company, the P/V ratio of different products gives a clear idea of profitability of each product.
- With further analysis, this can be used by the management to decide about pushing the sales of certain products or repricing certain other products. It is also helpful in decided whether to purchase certain components from outside or continue their in-house production.

Margin Of Safety

- Every business is exposed to the uncertainties of market competition, unexpected disruptions in supply chain or production, disruptions and lock downs of the marketing channel due to strikes or pandemics etc.
- Some disruption is part of the normal risk faced by the businesses in general.
- But if the business declines below a level where there is a loss, such a situation cannot be sustained for a long period, As we have seen above, this level is indicated by the break-even level.

- The gap between the estimated/budgeted level of operations and the break-even level indicates the cushion available to the business for sustaining its operations in times of adversity.
- This is referred to as “**Margin of Safety**”.

It is expressed in percentage terms. In equation form, it can be expressed as under:

$$\text{Margin of Safety} = \frac{[(\text{Estimated sales} - \text{Break-even sales}) / \text{Estimated sales}] \times 100}{}$$

Illustration:

If the estimated sales of a company during the year are ₹ 110 lakh and its break-even sales level is ₹ 70 lakh, the margin of safety is:

$$\begin{aligned} & [(110 - 70) / 110] \times 100 \\ & = (40/110) \times 100 = 36.36\% \end{aligned}$$

Absorption Costing

Under marginal costing, only the variable cost is allocated to a product. So, the cost of a finished unit in inventory will include only the direct materials, direct labour, and variable overhead costs. It will not used.

Therefore, the absorption costing is also called full costing or the full absorption costing.

Absorption costing is needed for external financial reporting and for income tax reporting purposes while the marginal costing is mainly useful to the management for decision making and the outsiders may not be much interested in it.

Illustration:

A company manufacturing LED bulbs has the following financial information:

Fixed overhead costs: ₹ 1,50,000

Cost of all direct inputs like material, labour, utilities etc. per bulb: ₹ 40

Variable overhead costs: ₹ 60,000

Total bulbs produced in the year: 15,000

Under marginal costing, the costs allocated to each bulb are only the

variable costs i.e. $40 + (60,000/15,000) = ₹ 44$.

The fixed overhead costs are not included in the product cost.

Under absorption costing, in addition to the variable costs of ₹ 44 per bulb, the fixed overhead cost of ₹ 1,50,000 is also allocated on pro-rata basis i.e. $1,50,000/15,000 = ₹ 10$ per bulb.

So, the total cost of each bulb under the absorption costing is ₹ 54 per bulb.

Effect on stock valuation

- Costs allocated to each unit of the product, under the absorption costing will be more than that under the marginal costing.
- Higher valuation of finished goods
- If there is no change in the inventory of the finished goods, during the year, it will make no difference in the valuation of stocks whether we use marginal costing or the absorption costing.

Effect on profit

- If inventories increase during a period, higher profit will be shown under the absorption costing than marginal costing.
- When inventories decrease, less profits are shown
- The difference in the profit is due to difference in accounting for fixed overhead costs for valuation of finished goods.
- When the entire stock, produced during the year is sold, there is no change in the inventory of finished goods, and so, the profit revealed by both the methods will be same.
- But when sales and production are not same, difference in profit will be shown in the profit and loss account.

Difference Between Absorption Costing and Marginal Costing

BASIS FOR COMPARISON	MARGINAL COSTING	ABSORPTION COSTING
Meaning	A decision making technique for ascertaining the total cost of production is known as Marginal Costing.	Apportionment of total costs to the cost center in order to determine the total cost of production is known as Absorption Costing.
Cost Recognition	The variable cost is considered as product cost while fixed cost is considered as period costs.	Both fixed and variable cost is considered as product cost.
Classification of Overheads	Fixed and Variable	Production, Administration and Selling & Distribution
Profitability	Profitability is measured by Profit Volume Ratio.	Due to the inclusion of fixed cost, profitability gets affected.
Cost per unit	Variances in the opening and closing stock does not influence the cost per unit of output.	Variances in the opening and closing stock affects the cost per unit.
Highlights	Contribution per unit	Net Profit per unit
Cost data	Presented to outline total contribution of each product.	Presented in conventional way.

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