

MARGINAL COSTING

Marginal Costing is very important technique in solving managerial problems and contributing in various areas of decisions. In this context profitability of two or more alternative options is compared and such options is selected which offers maximum profitability along with fulfillment of objectives of the enterprise.

Marginal costing - definition

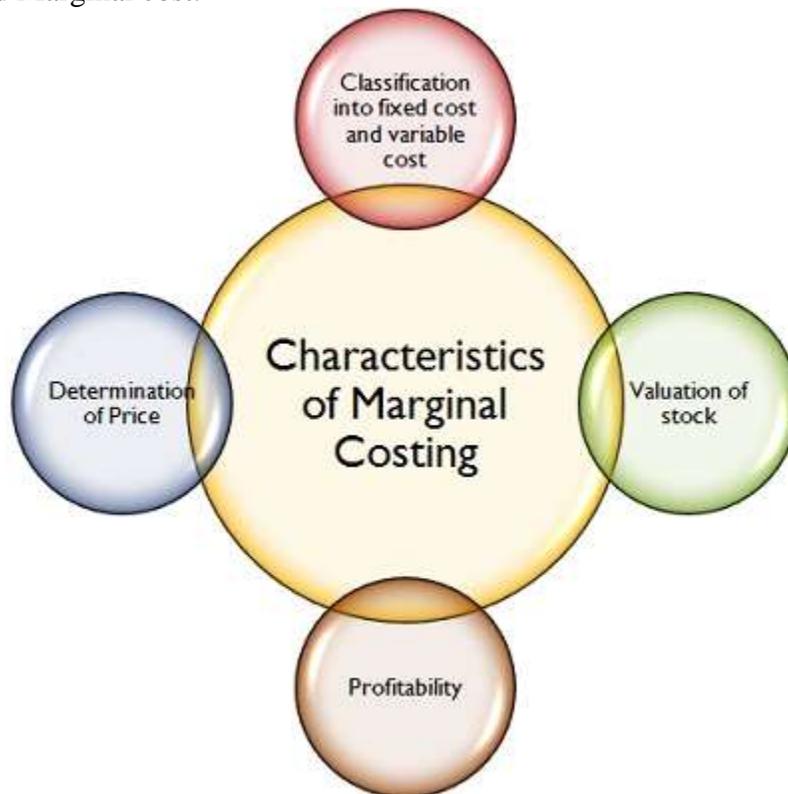
Marginal costing distinguishes between fixed costs and variable costs as convention ally classified.

The marginal cost of a product –“is its variable cost”. This is normally taken to be; direct labour, direct material, direct expenses and the variable part of overheads.

Marginal costing is formally defined as:

‘the accounting system in which variable costs are charged to cost units and the fixed costs of the period are written-off in full against the aggregate contribution. Its special value is in decision making’. (Terminology.)

The term ‘contribution’ mentioned in the formal definition is the term given to the difference between Sales and Marginal cost.



Thus, **Marginal Cost = Direct Material + Direct Labor + Direct Expenses + Variable Overheads**

Marginal Cost

The term marginal cost sometimes refers to the marginal cost per unit and sometimes to the total marginal costs of a department or batch or operation. The meaning is usually clear from the context.

Note- Alternative names for marginal costing are the contribution approach and direct costing.

Theory of Marginal Costing

The theory of marginal costing as set out in “A report on Marginal Costing” published by CIMA, London is as follows:

In relation to a given volume of output, additional output can normally be obtained at less than proportionate cost because within limits, the aggregate of certain items of cost will tend to remain fixed and only the aggregate of the remainder will tend to rise proportionately with an increase in output. Conversely, a decrease in the volume of output will normally be accompanied by less than proportionate fall in the aggregate cost.

The theory of marginal costing may, therefore, be understood in the following two steps:

1. If the volume of output increases, the cost per unit in normal circumstances reduces. Conversely, if an output reduces, the cost per unit increases. If a factory produces 1000 units at a total cost of Rs.3,000 and if by increasing the output by one unit the cost goes up to Rs.3,500, the marginal cost of additional output will be Rs.500.
2. If an increase in output is more than one, the total increase in cost divided by the total increase in output will give the average marginal cost per unit. It can be described as follows:

The ascertainment of marginal cost is based on the classification and segregation of cost into fixed and variable cost. In order to understand the marginal costing technique, it is essential to understand the meaning of marginal cost.

Marginal cost means the cost of the marginal or last unit produced. It is also defined as the cost of one more or one less unit produced besides existing level of production. In this connection, a unit may mean a single commodity, a dozen, and a gross or any other measure of goods.

Example, if a manufacturing firm produces X unit at a cost of Rs.300 and X+1 unit at a cost of Rs.320, the cost of an additional unit will be Rs.20 which is marginal cost. Similarly if the production of X-1 units comes down to Rs.280, the cost of marginal unit will be Rs.20 (300–280).

The marginal cost varies directly with the volume of production and marginal cost per unit remains the same. It consists of prime cost, i.e. cost of direct materials, direct labor and all variable overheads. It does not contain any element of fixed cost which is kept separate under marginal cost technique.

Marginal costing may be defined as the technique of presenting cost data wherein variable costs and fixed costs are shown separately for managerial decision-making. It should be clearly understood that marginal costing is not a method of costing like process costing or job costing. Rather it is simply a method or technique of the analysis of cost information for the guidance of management which tries to find out an effect on profit due to changes in the volume of output.

There are different phrases being used for this technique of costing. In UK, marginal costing is a popular phrase whereas in US, it is known as direct costing and is used in place of marginal costing. Variable costing is another name of marginal costing.

Marginal costing technique has given birth to a very useful concept of contribution where contribution is given by: Sales revenue less variable cost (marginal cost)

Contribution may be defined as the profit before the recovery of fixed costs. Thus, contribution goes toward the recovery of fixed cost and profit, and is equal to fixed cost plus profit ($C = F + P$).

In case a firm neither makes profit nor suffers loss, contribution will be just equal to fixed cost ($C = F$). This is known as break even point.

The concept of contribution is very useful in marginal costing. It has a fixed relation with sales. The proportion of contribution to sales is known as P/V ratio which remains the same under given conditions of production and sales.

Definition: Marginal Costing is a costing technique wherein the marginal cost, i.e. variable cost is charged to units of cost, while the fixed cost for the period is completely written off against the contribution.

The term **marginal cost implies the additional cost involved in producing an extra unit of output**, which can be reckoned by total variable cost assigned to one unit. It can be calculated as:

Classification into Fixed and Variable Cost: Costs are bifurcated, on the basis of variability into fixed cost and variable costs. In the same way, semi variable cost is separated.

Valuation of Stock: While valuing the finished goods and work in progress, only variable cost are taken into account. However, the variable selling and distribution overheads are not included in the valuation of inventory.

Make or Buy Decision

‘Make or Buy Decision’ is a problem in respect of which management has to take decision continuously, In this context, the management has to decide whether a certain product or component should be made in the factory itself or bought from outside suppliers.

The nature of decision regarding make or buy may be of the following types:

(a) Stopping the production of the part and buying it from the market: A business co is already making a part or component which is used in the business. Now due to some decision has to be taken whether this part or component should be bought from the market additional requirement due to increase in production of main factory should be made in factory or should be bought from the market.

In the case of a decision like stopping the production of the part or component and buying it from market, it is to be remembered that there would not be additional fixed cost in case and only marginal cost is the relevant factor to be considered. If the marginal cost is less than buying price, additional requirement of the component should be met by making rather than buying. Similarly, if buying price is less than marginal cost, it will be advantageous to purchase it from the market.

(b) Stopping the purchase of a component and to produce it in own factory: The second aspect of the problem of make or buy may be that a component or part thus far being purchased from the market should be produced or made in factory or not. In this case, normally some extra arrangement regarding space, labour, machine etc. will be required. This may involve capital investment too. Some special overheads may also be necessary. If the decision for making

requires the setting up of a new and separate factory, separate supervisory staff may also be needed. All these arrangements will require additional costs. As such, the price being paid to outsiders should be compared with additional costs which will have to be incurred in the form of raw materials, wages, salaries of additional supervisors, interest on capital investment, depreciation on new machine, rent of premises etc. If such additional cost are less than the buying price, the component should be manufactured and vice-versa.

Change in Product Mix

(a). Introducing a new line or department: The problem of introducing a new product or line involves decision in two respects- whether a new product or line should be added to the existing production or not, and if it should be introduced, then what should be the model or design or shape of the new product. In other words, if new product can be produced in more than one model, which model should be introduced? The marginal cost of new product in all its possible models should be considered. It also possible that a portion of the cost of facilities relating to the original production may be used for the purpose of producing new product.

(b). Selecting optimum product mix: When a company is engaged in a number of lines or products, there may arise a problem of selecting most optimum product mix which would maximize the earnings. This problem becomes complicated, when one of the factors happens to be limiting or key factors. Under such a situation, profitability will be improved only by economizing the scarce resources. As pointed out earlier, contribution per unit of key factor is the real index of profitability under such case. Thus, while deciding a profitable mix of products, contribution per unit of key factor should be considered.

Shut-Down Decisions

Shut-down decisions may be of two types- closure of entire business and dropping a line or product or department.

Closure of entire business: Sometimes, a business concern may not be in a position to carry out its trading activities in an adequate volume due to trade recession or cut throat competition. As such, the management of such business concern may be faced with a problem of suspending the trading activities.

Shut-down point = $\text{Net escapable fixed cost} / \text{contribution per unit}$

Or

Shut-down point = $\text{Avoidable expenses} / \text{contribution per unit of raw materials}$

Standard Costing

Meaning of Standard Costing:

It is a method of costing by which standard costs are employed. According to ICMA, London, Standard Costing is “the preparation and use of standard costs, their comparison with actual cost and the analysis of variances to their causes and points of incidence”.

According to Wheldon, it is a method of ascertaining the costs whereby statistics are prepared to show:

- (i) The standard cost;
- (ii) The actual cost;
- (iii) The difference between these costs which is termed the variance.

W. Bigg expresses:

Standard Costing discloses the cost of deviations from standards and clarifies these as to their causes, so that management is immediately informed of the sphere of operations in which remedial action is necessary.”

Thus, from the above, it becomes clear that Standard Costing involves:

- (i) Ascertainment and use of Standard Costs;
- (ii) Recording the actual costs;
- (iii) Comparison of actual costs with standard costs in order to find out the variance;
- (iv) Analysis of variance; and
- (v) After analysing the variance, appropriate action may be taken where necessary

Features of Standard Costing

1. Determination of standard costs of various elements of costs such as standard cost of direct material, direct labour and various overheads.
2. Comparison of standard costs and actual costs of production.
3. Finding differences (variances) between actual costs and standard costs. These variances may be favourable as well as unfavourable or adverse.
4. Analysing the variances to find the cause of variances.
5. Remedial steps are suggested so that unfavourable variances may not be repeated in the future.
6. Reporting these variances to top management for remedial action.

Objectives of Standard Costing:

The objectives of Standard Costing for which it is implemented are:

- (a) It helps to implement budgetary control system in operation;

(b) It helps to ascertain performance evaluation.

(c) It supplies the ways to utilise properly material, labour and also overhead which will be economic in character.

(d) It also helps to motivate the employees of a firm to improve their performance by setting up a 'standard'.

(e) It also helps the management to supply necessary data relating to cost element to submit quotations or to fix up the selling price of a firm.

(f) It also helps the management to make proper valuations of inventory (viz., Work-in-progress, and finished products).

(g) It acts as a control device to the management.

(h) It also helps the management to take various corrective decisions viz., fixation of price, make-or-buy decisions etc. which will be more beneficial to the firm.

Importance of Standard Costing

(i) Compilation of Historical Cost is very expensive and difficult:

A manufacturing firm making large number of parts requires too much clerical work which is required in order to compile the materials, labour and overhead charges to each and every cost of parts produced for ascertaining the average cost of the product.

(ii) Historical Costs are inadequate:

In order to measure the manufacturing efficiency, historical costs are not practically adequate. It fails to explain the reasons of increased cost or any change in cost structure.

(iii) Historical Costs are too old:

In many firms, costs are determined and selling prices are ascertained even before the production starts—which is not desirable.

(iv) Historical Costs are not typical:

This is due to the wide fluctuation in market for which there is no relation between the selling price per unit and cost price per unit.

Advantages of Standard Costing:

The following advantages may be derived from Standard Costing:

- (i) Standard Costing serves as a guide to the management in several management functions while formulating prices and production policies etc.
- (ii) More effective cost control is possible under standard costing if the same is reviewed and analysed at regular intervals for improvements and immediate action can be taken if deviations from standards are found out which, ultimately, leads to cost reduction.
- (iii) Analysis of variance and its measurement helps to detect inefficiencies and mistakes which enable the management to investigate the reasons.
- (iv) Since standard costs are predetermined costs they are very useful for planning and budgeting. It also helps to estimate the effect of changes in Cost-Price-Volume relationship which also helps the management for decision-making in future.
- (v) As standard is fixed for each product, its components, materials, process operation etc. it improves the overall production efficiency which also ultimately reduces cost and thereby increases profit.
- (vi) Once the Standard Costing System is implemented it will lead to saving cost since most of the costing work can be eliminated.
- (vii) Delegation of authority and responsibility becomes effective by setting up standards for each cost centre as the supervisors or executives of each cost centre will know the standard which they have to maintain.
- (viii) This system also helps to prepare Profit and Loss Account promptly for short period in order to know the trend of the business which helps the management to take decisions promptly.
- (ix) Standard costing also is used for inventory valuation purposes. Stock can be valued at standard cost which can reduce the fluctuation of profit for different methods of valuation for the same.
- (x) Efficiency of labour is promoted.
- (xi) This system creates cost-consciousness among all employees, executives and top management which increase efficiency and productivity as well.

Disadvantages of Standard Costing:

The alleged disadvantages of Standard Costing are:

(i) Since Standard Costing involves high degree of technical skill, it is, therefore, costly. As such, small organisations cannot, introduce the system due to their limited financial resources. But, once introduced, the benefits achieved will be far in excess to its initial high costs.

(ii) The executives are liable for those variances that are found from actions which are actually controllable by them. Thus, in order to fix up the responsibilities, it becomes necessary to segregate variances into non-controllable and controllable portions although that is not an easy task.

(iii) Standards are always changing since conditions of the business are equally changing. So, standards are to be revised in order to make them comparable with actual results. But revision of standards creates many problems, particularly in inventory adjustment.

(IV) Standards are either too liberal or rigid since the same are based on average past results, attainable good performance or theoretical maximum efficiency. So, if the standards are very high, it will adversely affect the morale and motivation of the employees.

Methods of determining Standards

Standards are determined for each element of cost which are as follows:

1. Direct Material: The following two standards are determined in respect of direct material:

a. Determination of standard price of material (in per unit);

In ascertaining standard quantity of materials, product design is developed and standard specification of materials are determined. The normal wastage of material is also fixed on the basis of past records or scientific analysis.

The standard price of materials are determined for the various types of material needed for the production. It is done by the cost accountant in collaboration with the purchase officer.

Standard price for each item of material is established after carefully analysing the market conditions and forecasting of price. Generally, standard prices are based on current prices adjusted to expected changes in future.

2. Direct Labour: Standards of direct labour also involves two standards:

(a) Classification of labour into different grades and determination of their labour hour for each product, i.e., determination of standard time.

(b) Determination of standard rates of wages for different grades of workers. It of all Workers are divided into different

It is clear that in the area of direct labour, first of all workers are divided into different grades, viz., skilled, semi-skilled and unskilled workers, male, female and child labour, etc.

Thereafter, with the help of time and motion study standard time of different grades of workers needed for any product is established. While fixing standard rates of wages, present rates are adjusted with future expected changes.

Unit costing:

It is also called the single output costing. It is used in costing of products that are expressed in identical units and suitable for products that are manufactured by continuous activity.

Example: Cement manufacturing, Dairy, Mining etc.

Job costing:

Under this method, costs are ascertained for each work order separately as each has its own specification and scope. Tailor made products also get covered by this type of costing. Example: Repair of buildings, Painting etc.

Contract costing:

In this method costing is done for jobs that involve heavy expenditure and stretches over long period and across different sites. It is also called as terminal costing. Example: Construction of roads and bridges, buildings etc.

Batch costing:

Through this method the costing is done for units that are produced in batches that are uniform in nature and design. Example: Pharmaceuticals

Process costing:

It is used for the products which go through different processes. Like in the process of manufacturing cloth, different processes are involved namely spinning, weaving and finished product. Each process gives an output that is a finished product in itself and can be sold. That is why; process costing is used to ascertain the cost of each stage of production.

Service or operating costing:

It is the method used for the costing of operating a service such as Public Bus, Railways, Nursing home. It is used to ascertain the cost of a particular service.

Multiple costing: When the output comprises different assembled parts like in televisions, cars or electronic gadgets, cost has to be ascertained for the component as well as the finished product. Such costing may involve different / multiple methods of costing.

Product Costing:

Product costing methods are used to assign cost to a manufactured product. The main costing methods available are process costing, job costing and direct costing. Each of these methods applies to different production and decision environments.

The main product costing methods are:

Job costing: This is the assignment of costs to a specific manufacturing job. This method is used when individual products or batches of products are unique, and especially when jobs are being billed directly to customers or are likely to be audited by customers.

Process costing: This is the accumulation of labour, material and overhead costs across departments or entities, with the total production cost then being allocated to individual units. Process costing is used when large quantities of the same product are manufactured, usually in long production runs.

Inventory Costing:

Different inventory costing methods are best suited to different situations and financial goals.

First In, First Out

Under the First In, First Out (FIFO) method, the oldest costs are assigned to inventory items sold, regardless of whether the sold items were actually purchased at that cost. When the number of inventory items purchased at the oldest cost is sold, the next oldest cost is assigned to sales.

Last In, First Out

The last in, first out method (LIFO) is the exact opposite of the FIFO method, assigning the most recent inventory costs to items sold

Average Cost Method

The average cost method assigns inventory costs by calculating a moving average of all inventory purchase costs.

Specific Identification Method

The specific identification method perfectly matches inventory costs with units sold, assigning the exact cost of each sold inventory item when the specific item is sold.

