



BACHELOR OF COMPUTER APPLICATIONS

SEMESTER 4

DCA2204

PRINCIPLES OF FINANCIAL ACCOUNTING AND MANAGEMENT

Unit 12

Understanding Cost

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1. INTRODUCTION

In the previous units we have studied basics of accounting and tools for financial statement analysis. However, managers require different kinds of information for decision making. Accounting records and financial statements prepared on the basis of accounting records do not provide all the information required by managers of a business. Organizations have to maintain many other types of records. One such record is cost record. Cost records provide cost data to managers. What is the meaning of cost, how costs are classified and determined has been discussed in this Unit.

1.1 Objectives:

After studying this chapter, you should be able to:

- ❖ *Understand Classification of costs based on their behaviour or elements of cost*
- ❖ *Know Determination of Total Cost*
- ❖ *Prepare of Cost sheet*
- ❖ *Prepare of Estimated Cost Sheet*

2. CLASSIFICATION OF COST

Cost classification is the process of grouping costs according to their common features. Costs are to be classified in such a manner that they are identified with cost centre or cost unit.

Cost is classified as follows:

1. On the basis of behaviour of cost
2. On the basis of elements of cost

2.1 On The Basis Of Behaviour Of Cost

Behaviour means change in cost due to change in output. On the basis of behaviour cost is classified into following categories:

Fixed Cost

It is that portion of the total cost which remains constant irrespective of output up to the capacity limit. It is called as a “period cost” as it is concerned with period. It depends upon the passage of time. It is also referred to as “non-variable cost” or “stand by cost” or “capacity cost”. It tends to be unaffected by variations in output. These costs provide conditions for production rather than costs of production. They are created by contractual obligations and managerial decisions. Rent of premises, Taxes and insurance, staff salaries are examples for fixed cost.

Variable Cost

This cost varies according to the output. In other words, it is a cost which changes according to the changes in output. It tends to vary in direct proportion to output. If the output is decreased, variable cost will also decrease. It is concerned with output of product. Therefore, it is called as a “product” cost. If the output is doubled, variable cost will also be doubled. For example, direct material, direct labour, direct expenses and variable overheads are variable costs.

Characteristics of Variable Cost:

1. Total cost changes in direct proportion to change in total output.

2. Variable cost per unit remains constant.
3. It is quite divisible.
4. Per unit variable cost is smaller value.
5. It is identifiable with the individual cost unit.
6. Functional managers can exercise control over variable cost.

Semi-Variable Cost

This is also referred to as semi-fixed or partly variable cost. It remains constant up to a certain level and registers change afterwards. These costs vary in some degree with volume *but not in direct or same proportion*. Such costs are fixed only in relation to specified constant conditions. For example, repairs and maintenance of machinery, telephone charges, maintenance of building, supervision, professional tax etc. are semi-variable costs.

2.2 On The Basis Of Elements Of Cost

Elements mean nature of items. A cost is composed of three elements: material, labour and expenses. Each of these three elements can be direct and indirect as shown below.

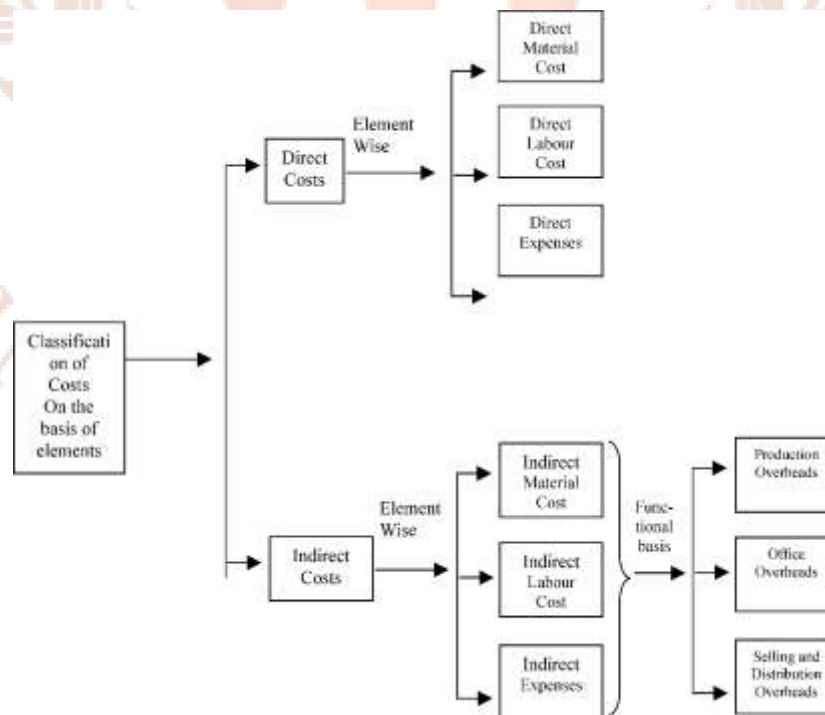


Figure 12.1

1) Direct Cost:

It is the cost which is directly chargeable to the product manufactured. It is easily identifiable. Direct cost consists of three elements which are as follows:

a) Direct Material:

It is the cost of basic raw material used for manufacturing a product. It becomes a part of the product. No finished product can be manufactured without basic raw materials. It is easily identifiable and chargeable to the product. For example, leather in leather ware, pulp in paper, steel in steel furniture, sugarcane in sugar manufacturing or production etc. What is raw material for one manufacturer might be finished product for another. Direct material includes the following:

1. All materials specially purchased for production or the process.
2. All components purchased for production or the process.
3. Material transferred from one cost centre to another or one process to another.
4. Primary packing materials, wrappings, cardboard boxes etc., necessary for preservation or protection of product.

Some of the items like nails or thread in the store are part of finished product. They are not treated as direct materials in view of negligible cost.

b) Direct Labour or Direct Wages:

It is the amount of wages paid to those workers who are engaged on the manufacturing line for conversion of raw materials into finished goods. The amount of wages can be easily identified and directly charged to the product. These workers directly handle raw materials, work-in-progress and finished goods on the production line. Wages paid to workers operating lathes, drilling, cutting machines etc. are direct wages. Direct wages are also known as productive labour, process labour or prime cost labour.

Direct wages include the payment made to the following group of workers:

1. Labour engaged on the actual production of product.

2. Labour engaged in aiding the operations viz. Supervisor, Foreman, Shop clerks and workers on internal transport.
3. Inspectors, Analysts needed for such production.

c) Direct Expenses or Chargeable Expenses:

It is the amount of expense which is directly chargeable to the product manufactured or which may be allocated to product directly. It can be easily identified with the product. For example, hire charges of a special machine used for manufacturing a product, cost of designing the product, cost of patterns, architect's fees / surveyor's fees, or job cost of experimental work carried out specially for a job, Cost of special drawings, cost of special layout designs, patents, patterns, cost of models, surveyors' fees, Excise duty, Royalty on production, cost of rectifying defective work, and license fees can be directly attributable to a product. Utility of such expenses is exhausted on completion of the job.

2) Indirect Cost:

It is that portion of the total cost which cannot be identified and charged direct to the product. It has to be allocated, apportioned and absorbed over the units manufactured on a suitable basis. It consists of the following three elements:

a) Indirect Material:

It is the cost of material other than direct material which cannot be charged to the product directly. It cannot be treated as part of the product. . It is the material which cannot be allocated to the product but which can be apportioned to the cost units; Examples are as follows:

1. Lubricants, cotton waste, Grease, Oil, stationery etc.
2. Small tools for general use.
3. Some minor items such as thread in dress making, cost of nails in shoe making etc.

b) Indirect Labour:

It is the amount of wages paid to those workers who are not engaged on the manufacturing line, for example, wages of workers in administration department, watch and ward department, sales department, and general supervision.

c) Indirect Expenses:

It is the amount of expenses which is not chargeable to the product directly. It is the cost of giving service to the production department. It includes factory expenses, administrative expenses, selling and distribution expenses etc.

Self-Assessment Questions - 1

1. _____ means change in cost due to change in output.
2. _____ cost varies according to the output
3. Indirect material is also called as _____ .

3. OVERHEADS AND NON-COST ITEMS

3.1 Overheads

Aggregate of indirect cost is referred to as overheads. It is also called as 'on cost' or "Supplementary Cost". It arises as a result of overall operation of a business. According to Weldon overhead means "the cost of indirect material, indirect labour and such other expenses, including services as cannot conveniently be charged to direct specific cost units. It includes all manufacturing and non-manufacturing supplies and services.

These costs cannot be associated with a particular product. The principal feature of overheads is the lack of direct traceability to individual product. It remains relatively constant from period to period. The amount of overheads is not directly chargeable i.e., it has to be properly allocated apportioned and absorbed on some equitable basis.

3.2 Classification Of Overheads

We have studied that overheads are indirect costs which can be classified based on elements as shown in 12.2. Another way to classify them is based on functions as follows.

1. **Factory Overheads:** It is the aggregate of all the factory expenses incurred in connection with manufacture of a product. These are incurred in connection with running of factory. They include the items of expenses viz., factory salary, work manager's salary, factory repairs, rent of factory premises, factory lighting, lubricants, factory power, drawing office salary, haulage (cost of internal transport) depreciation of plant and machinery unproductive wages, estimation expenses, royalties, loose tools written off, material handling charges, time office salaries, counting house salaries etc.
2. **Administrative Overheads or Office Overheads:** It is the aggregate of all the expenses as regards administration. It is the cost of office service or decision making. It consists of the following expenses: Staff salaries, printing and stationery, postage and telegram, telephone charges, rent of office premises, office conveyance, printing and stationery and repairs and depreciation of office premises and furniture etc.

3. **Selling and Distribution Overheads:** It is the aggregate of all the expense incurred in connection with the sales and distribution of finished product and services. It is the cost of sales and distribution services.

Selling expenses are such expenses which are incurred in acquired and retaining customers. They include, the following expenses;

- (a) Advertisement (b) Showroom expenses (c) Traveling expenses
- (d) Commission to agents (e) Salaries of Sales office (f) cost of catalogues
- (g) Discount allowed (h) Bad debts written off (i) Commission on sales
- (j) Rent of Sales Room (k) Samples and Free gifts (l) After sales service expenses (m) Expenses on demonstration and technical advice to prospective customers (n) Free repairs and servicing expenses (o) Expenses on market research (p) fancy packing and demonstration.

Distribution expenses include all those expenses which are incurred in connection with making the goods available to customers. These expenses include the following:

- (a) Packing charges (b) Loading charges (c) Carriage on sales (d) Rent of warehouse (e) Insurance and lighting of warehouse (f) Insurance of delivery van (g) Expenses on delivery van (h) Salaries of Godown keeper, drivers and packing staff.

3.3 Non-Cost Items

Non-cost items are those items which do not form part of cost of a product. Such items should not be considered while ascertaining cost of a product. These are items included in profit and loss A/c as per principles of Financial Accountancy but not related to product. For examples, Income-tax paid, provision for Income-tax, interest on capital, interest on loan, profit on sale of fixed assets, loss on sale of fixed assets, transfer fees received, transfer to reserves, any other appropriation of profit, commission to Managing Director or Partners, capital loss, donations, capital expenditure, discount on shares and debentures Goodwill written off, Preliminary expenses written off, brokerage, pure financial expenses or losses and expenses

not related to the business, wealth tax, bonus to directors and employees (if it is based on profit), expenses of raising capital, penalties and fines.



4. DETERMINATION OF TOTAL COST

Cost of product is determined as per cost attach concept studied already. Total cost of a product consists of various elements of cost which have the quality of coherence. All the elements of cost can be grouped and regrouped. Grouping and re-grouping of the various elements of costs leads to significant divisions of costs. The logical process of determination of cost by groping and re-grouping various elements is illustrated as follows:

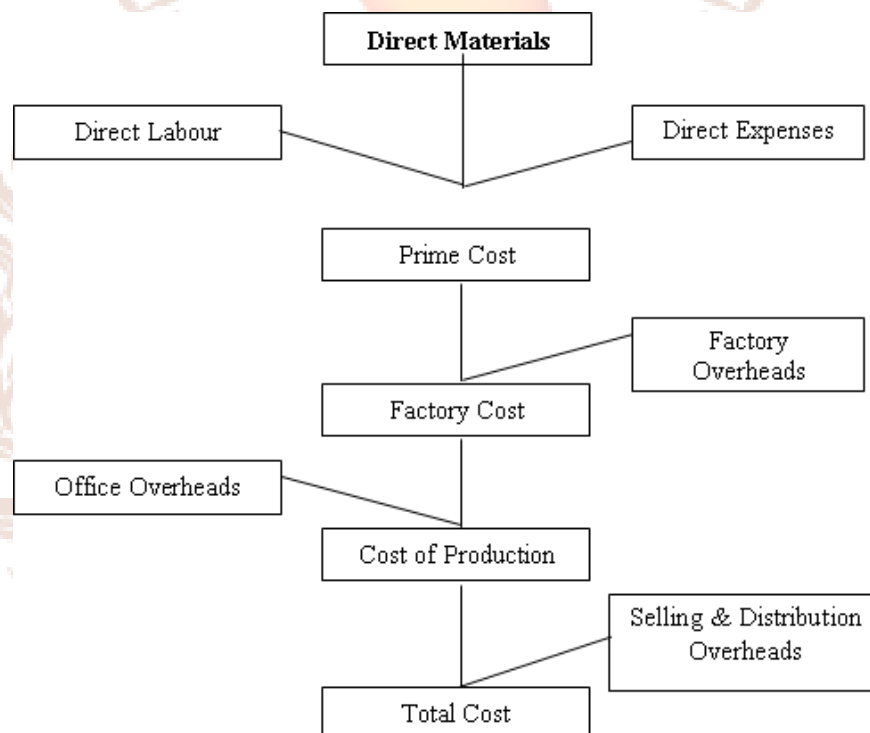


Fig. 12.2

Division of Cost

As shown in Fig. 12.2 Total cost is divided into various sub groups each of which has been explained here.

Prime Cost:

It comprises of all direct materials, direct labour and direct expenses. It is also known as 'flat cost'.

$$\text{Prime Cost} = \text{Direct Materials} + \text{Direct Labour} + \text{Direct Expenses.}$$

Works Cost:

It is also known as 'factory cost' or 'cost of manufacture'. It is the cost of manufacturing an article. It includes prime cost and factory overheads.

$$\text{Works Cost} = \text{Prime Cost} + \text{Factory Overheads}$$

Cost of Production

It represents factory cost plus administrative overheads.

$$\text{Cost of Production} = \text{Factory Cost} + \text{Administrative overheads.}$$

Total Cost

It represents cost of production plus selling & distribution overheads.

$$\text{Total Cost} = \text{Cost of Production} + \text{Selling \& Distribution overheads.}$$

Selling Price

It is the price which includes total cost-plus margin of profit (or minus loss) if any.

$$\text{Selling Price} = \text{Total Cost} + \text{Profit (-Loss)}$$

How these divisions of costs are comprised in selling price is shown in in fig. 12.3.

Composition of Selling Price:

				Profit	
			Selling & Distribution Overheads		
		Office Overheads			
	Factory Overheads				
Direct Expenses					
Direct Labour					
Direct Materials					
	Prime Cost	Factory Cost	Cost of Production	Total Cost	Selling Price

Fig. 12.3

5. COST SHEET

For determination of total cost of production, a statement showing the various elements of cost is prepared. This statement is called as a 'statement of cost' or 'cost sheet'. Cost sheet is a statement which provides for the assembly of the detailed cost of entire or most units. It is a statement showing the details of the total cost of job, operation or order. It brings out the composition of total cost in a logical order, under proper classification and sub-divisions. The period covered by the cost sheet may be a week, a month or so. Separate columns are provided to show the total cost and cost per unit. A cost sheet is prepared under output or unit costing method.

Features of Cost Sheet

Cost sheet has the following features:

1. It relates to a particular product.
2. It relates to cost incurred during a particular period.
3. It may show total cost as well as per unit cost.
4. It may be based on actual data or estimated data.

Purpose of Cost Sheet

Cost sheet serves the following purposes:

1. It gives the breakup of total cost under different elements.
2. It shows total cost as well as cost per unit.
3. It helps comparison of current year's costs with previous year's costs.
4. It facilitates preparation of tender or quotations.
5. It enables the management to fix selling price.
6. It controls cost.

5.1 Proforma Of Cost Sheet

Cost sheet for the period		Production	Units
	Rs.	Rs.	Unit Cost Rs.
Direct Materials Cost			
Opening Stock of Materials	xx		
+ Purchases	xx		
+ Carriage Inwards	xx		
+ Custom Duty and Octroi	xx		
Dock Charges	xx		
Freight Inwards	xx		
	xx		
Less: Closing Stock of Materials	xx	xx	
Direct Wages		xx	
Direct Expenses / Chargeable Expenses		xx	
Prime Cost	xx		
Factory Overheads			
Factory Rent, Rate, Insurance	xx		
Factory Lighting	xx		
Factory Supervision	xx		
Motive Power	xx		
Fuel & Oil	xx		
Grease, Water etc.	xx		
Steam	xx		
Welfare Expenses	xx		

Laboratory Expenses	xx		
Depreciation of Plant & Machinery	xx		
Depreciation of Factory Building	xx		
Repairs & Maintenance of Factory	xx		
Indirect Wages	xx		
Estimation Expenses	xx		
Technical Director's Fees	xx		
Haulage	xx		
Royalty	xx		
Loose tools W/off	xx		
Material handling Charges	xx		
Factory Stationary	xx		
Works Manager's Salary	xx		
Works Clerical Staff's Salary	xx		
Supervisor's Salary	xx		
Store Keeper's Salary	xx		
Service Department Expenses	xx		
Factory Clearing	xx		
All other Factory Expenses	xx		
Less: Scrap Sales	xx	xx	
Add: Opening Work in Progress		xx	
		xx	
Less: Closing Work in Progress		xx	
Factory Cost			
Office & Administrations Overheads			
Office Rent Rate & Taxes	xx		
Staff Salaries	xx		
Office Lighting	xx		
Office Cleaning	xx		
Printing & Stationery	xx		
Postage & Telegram	xx		
Office Conveyance	xx		
Depreciation on Office Building & Furniture	xx		

Office Equipements			
Office Repairs	xx		
Sundry Expenses	xx		
General Expenses	xx		
Legal Expenses	xx		
Audit Fees	xx	xx	
Cost of Production		xx	
Add: Opening Stock of Finished Goods		xx	
		xx	
		xx	
Less: Closing Stock of Finished Goods		xx	
Cost of Finished Goods sold		xx	
Selling & Distribution Overheads		xx	
Selling:			
Advertisement	xx		
Show Room Expenses	xx		
Travelling Expenses	xx		
Commission on Sales	xx		
Sales Salaries	xx		
Discount allowed	xx		
Bad Debts	xx		
Samples & Gifts	xx		
After Sales			
Service Expenses	xx		
Demonstration Expenses xx			
Packing Expenses	xx		
Loading Charges xx			
Carriage on Sales	xx		
Rent of Warehouse	xx		
Insurance & Lighting of Warehouse	xx		
Expenses of Delivery Van	xx		
Salaries of Packing Department	xx	xx	
Collection Charges	xx		
Cost of Catalogues	xx		
Cost of mailing literature	xx		
Cost of tender	xx		
Total Cost or Cost of Sale		xx	
Profit	xx		
Sales		xx	

Treatment of Certain Items of cost sheet:**i) Raw Materials:**

For calculation of raw materials consumed, following formula may be used:

	Rs.
Opening Stock of Raw Materials	xx
Add: Purchases	xx
	xx
Less: Closing Stock of Raw Materials	xx
Cost of Material Consumed	xx

ii) Work in Progress:

It represents incomplete units at the end of a given period. The work in progress is valued at prime cost or at factory cost.

At Prime Cost:

In such a case opening and closing work in progress is taken into consideration in cost sheet while calculating prime cost.

	Rs.
Direct Materials	xx
Add: Direct Wages	xx
Add: Other Direct Expenses	xx
Add: Opening Work in Progress	xx
	xx
Less: Closing Work in Progress	xx
Prime Cost	xx

At Factory Cost:

Direct Materials	xx
Direct Labour	xx
Other Direct Expenses	xx
Prime Cost	xx

Add: Factory Overheads	xx
Add: Opening Work in Progress	xx
	xx
Less: Closing Work in Progress	xx
Factory Cost	xx

iii) **Carriage Inward:**

It is the carriage on purchase of materials it should be added to the cost of material purchased.

iv) **Carriage Outward:**

It is the carriage on sales it should be treated as selling and distribution overhead.

v) **Defective Material:**

If defective material is returned to supplier, the cost of material consumed should be reduced by the value of such material. If it is sold, it should be reduced.

vi) **Scrap:**

If wastage or residual of material scrap or defective product is sold as scrap, the value realized should be deducted from factory overheads. However, realisable value of scarp of materials should be deducted from cost of materials consumed.

vii) **By-Product:**

Realisable value of by-product is deducted from factory overheads.

viii) **Defective Product**

If defective product is rectified by incurring extra expenditure, it should be included in factory cost, if it is caused by normal reasons. If it is caused by abnormal reasons, the rectifying cost is transferred to costing P & L A/c.

ix) Normal Loss of Raw Materials:

It should be ignored. It will get automatically charged to output.

x) Abnormal Loss of Raw Materials:

Cost of material abnormally lost such as loss of materials due to fire, accidents, water seepage etc. should be deducted from the value of material purchased.

xi) Special Stores:

Cost of special stores and consumables identified with specific products should be taken as a part of prime cost.

xii) Packing Charges:

Treatment depends on the nature of packing:

- a) Cost of essential packing is included as part of direct material cost.
- b) Cost of temporary packing which is required for movement of semi- finished goods for further processing should be taken as a part of factory overheads.
- c) Packing of finished goods for transportation to consumer's place should be treated as selling and distribution overheads.
- d) Fancy packing to promote sale should be treated as publicity cost.

xiii) Trade discount:

It should be deducted from sales.

xiv) Octroi and Custom Duty:

It is incurred in connection with purchase of materials. It should be included in cost of material consumed.

Illustration (Treatment or Allocation of Expenses):

The account of X Manufacturing Company for the year ended December. 2001 showing the following:

	Rs.		Rs.
Drawing Office Salaries	6,500	Materials Purchased	1,85,000
Counting House Salaries	1,2,600	Travelling Expenses	2,100
Carriage Outwards	4,300	Traveller's Salaries & Commission	7,700
Carriage on Purchases	7,150	Productive Wages	1,26,000
Bad Debts written off	6,500	Depreciation:	6,500
Repairs of Plant, Machinery & Tools	4,450	Plant & Machinery & Tools	300
		- Furniture	6,000
Rent, Rates, Taxes & Insurance		Director's Fees	
- Factory	8,500	Gas and Water:	
- Office	2,000	Factory	12,000
Sales	4,61,100	Office	400
Stock of Materials		Manager's Salary	
		(3/4 th Factory And 1/4 th Office)	10,000
- 31st Dec. 2000	62,800	General Expenses	3,400
- 31st Dec. 2001	48,000		

Prepare statement giving the following information:

- Material Consumed;
- Prime cost;
- Factory overhead and percentage of wages;
- Factory Cost
- General overhead and the processing on factory cost;
- Total Cost;
- Net profit.

Solution:**Statement of Cost and Profit for the year ended 31st December 2001.**

	Rs.	Rs.
Stock of Raw Materials 1.1.2001	62,800	
Add: Purchases	1,85,000	
Add: Carriage on Purchases	7,150	
	<u>2,54,950</u>	
Less: Stock of Raw Materials 31.12.2001	<u>48,000</u>	
a) Value of Materials Consumed		2,06,950
Productive Wages		<u>1,26,000</u>
b) Prime Cost		3,32,950
Factory Overheads:		
Drawing Office Salaries	6,500	
Repairs to Plant and Machinery	4,450	
Factory Rent, Rates, Taxes & Insurance	8,500	
Depreciation of Plant, Machinery, Tools	6,500	
Factory Gas, and Water	1,200	
Managers' Salary (3/4) of Rs. 10,000	<u>7,500</u>	<u>34,650</u>
Percentage of Factory Overheads		
$\text{On wages} = \frac{34,650 \times 100}{1,26,000} = \frac{55}{2} = 27.5\%$		
c) Factory Cost		3,67,600
General Overheads:		
Counting House Salaries	12,600	
Carriage	4,300	
Bad Debts	6,500	
Office Rent, Rates, Taxes & Insurance	2,000	
Travelling Expenses	2,100	
Travellers Salaries and Commission	7,700	
Depreciation on Furniture	300	
Director's Fees	6,000	
Office Gas and Water	400	
Manager's Salary	2,500	
General Expenses	3400	<u>47,800</u>
d) Total Cost		415,400
e) Net Profit		<u>45,700</u>
Sales		<u>461,100</u>

Note: Percentage of General Overheads on Factory Cost:

$$\frac{47,800}{3,67,600} \times 100 = 13\% \text{ (Approximately)}$$



6. ESTIMATION OF COST

Very often, the management desires to know, 'what will be the cost?' even before the production starts. The purpose to know the cost before it is incurred might be different. It may be to keep the cost within control or it may be used for profit planning. Many times, it is required to submit tenders, to give quotations, to prepare the price lists etc. For this purpose, the estimation of "probable cost" of production is essential. This requires the past cost data to be analysed, present circumstances are taken into consideration and future is to be projected. This involves the study of each and every element of cost and their nature of behaviour. Keeping in view the nature of behaviour of elements of cost, it can be classified into following three categories:

- a) Fixed Cost.
- b) Variable Cost.
- c) Semi Variable Cost.

We will study in detail the nature of behaviour of cost hereinafter:

a) Fixed Cost:

Fixed cost is that cost which remains unaffected even though there is change in the level of output. It remains constant at all the levels of output for a given period of time. Examples of such costs are rent, rates and taxes of factory premises, salary of General Manager, Foreman, Watchman, Insurance, Depreciation etc. These expenses are incurred according to the unit of time and not according to level of production. Hence, sometimes they are called as "periodic cost". For example, such fixed cost is ascertained in a particular concern Rs. 12,000/- per month. Assume the capacity of this concern is to produce 1000 units per month. If the concern produces 100 units or 500 units or 700 units or 1000 units this fixed cost will remain constant at all these levels of output.

This fixed cost remains fixed/constant at all the levels of output, but the cost per unit changes if there is change in the level of output. We will study this principle with the help of the above data at different levels or output.

Level of Output (Units)	Fixed Cost Rs.	Cost per Unit Rs.
100	12,000	120
300	12,000	40
500	12,000	24
800	12,000	15
1000	12,000	12

Conclusion:

Fixed cost remains fixed at all the levels of output (If within capacity) and does not get affected even though there is change in the level of output. However, fixed cost per unit changes, if there is change in the level of output. Fixed cost also changes in the long run sometimes. For example, municipal tax in respect of factory premises in the year 1991 may not be the same as it was in the 1981.

b) Variable Cost:

It is the cost which tends to vary directly with the volume of output. If there is increase in output this cost increases and if there is decrease in level of output this cost decreases. The change in the variable cost takes place in the same direction in which the level of output changes. This cost consists of Direct Wages, Direct Expenses and some part of indirect expenses which varies according to the level of output. Normally this cost changes in the same proportion in which proportion the output changes. Hence, these expenses are called as variable expenses. Say for example, if standard unit of expenses on direct materials will change if level of output changes. For 100 units it will be Rs. 2,000/-. For 300 units it will be Rs. 6,000/-. For 500 units it will be Rs. 10,000/- Etc. However, variable cost per units will remain unchanged provided price level does not change. We will study this principle with the help of the above data at different levels of output:

Level of Output (Units)	Variable Expenses (Direct Materials)	Cost Per Unit Rs.
100	2,000	20
300	6,000	20
500	10,000	20
800	16,000	20
1000	20,000	20

Conclusion:

Variable expenses change directly in relation to change in level of output on the same proportion in which proportion the level of output changes. However, variable expenses per unit will remain the same. Here we have assumed the price level remains unchanged.

c) Semi Variable Cost:

This is the third category of the nature of behaviour of the expenses. These expenses are neither fixed nor variable. These expenses change in the same direction in which the level of output changes. Thus, these expenses are partly fixed and partly variable in nature. Example of such expenses is Depreciation of Plant and Machinery, maintenance of factory building etc. These expenses will increase if factory is run from single shift to double shift or triple shifts. Depreciation and maintenance will increase but not in the same ratio the output increases. Thus, these expenses are neither fixed nor variable cent percent. Hence, they are called as semi-variable expenses. The expenses on electricity or telephones, you will find upto a certain level of consumption is charged, at a fixed specified level and again change takes place after that specified level is crossed.

Conclusion:

The expenses change in the same direction but not in the same proportion, in which proportion, the output changes. The change in expenses largely depends on the nature of expenses. No hard and fast rule can be established in relation to semi variable cost. The management is specifically required to study the trend of expenses which are semi variable in nature.

When management decides to ascertain the probable cost for the purpose of submitting tender or to give quotations or preparing price list, it is normally prepared in the form of “Cost Sheet” taking all the forecasted figures on estimation basis. However, the estimation should not be prepared blindly. It should be done on the basis of our discussion in the earlier paras in respect of nature of expenses. We will be studying the same in the following illustrations:

Illustration

M/s. Godan and Sons manufactured and sold 2000 Typewriters in the year 2004. It's summarised Trading and Profit and Loss Account for the year 2004 is as below:

	Rs.		Rs.
To Cost of Material consumed	1,20,000	By Sales	6,00,000
To Direct Wages Manufacturing			
To Charges Gross Profit C/d	1,80,000		
To Total Management	75,000		
	2,25,000		
Expenses	6,00,000		6,00,000
To General Expenses Rent Rates &	90,000		2,25,000
To Taxes Selling Expenses Net	30,000	By Gross Profit B/d	
To Profit	15,000		
To Total	45,000		
To	45,000		
	2,25,000		2,25,000

For the year 2005 it is estimated that:

1. The output and sale will be 3,000 typewriters.
2. Price of material will rise by 25% on the previous year level.
3. Wages per unit will rise by 10%
4. Manufacturing charges will increase in proportion to the combined cost of material and wages.
5. Selling cost per unit will remain unchanged.
6. Other expenses will remain unaffected by the rise in output.

Prepare a statement showing the cost at which typewriters will be manufactured in 2005 and give price at which it should be marked so as to show profit of 10% on selling price.

Solution:

Particulars		Total Cost Rs.	Cost Per Unit Rs.
I	Direct Materials	1,20,000	60.00
II.	Direct Labour	1,80,000	90.00
	(A) Prime Cost	3,00,000	150.00
III.	Factory Overheads	75,000	37.50
	(B) Factory Cost	3,75,000	187.50
IV.	Office Overheads: (Rs. 90,000 + Rs. 30,000 + 15,000)	1,35,000	67.50
	(C) Cost of Production	5,10,000	255.00
V.	Selling & Distribution Expense	45,000	22.50
	(D) Cost of Sale Profit	5,55,000	277.50
		45,000	22.50
		6,00,000	300.00

Estimates of the year 2005:

1. Material cost per unit	Rs.	60
Add: Expected Increase of price of material in 2000 25% over that of 2004 i.e.	Rs.	15
∴ Expected price of material (per unit)	Rs.	75
2. Wages per unit	Rs.	90
Add: Expected increase @10%	Rs.	9
∴ Expected Wages per unit	Rs.	99
3. Manufacturing charges are	Rs.	75,000
Percentage of manufacturing expenses to combined cost of materials and wages		

$$= \frac{\text{Manufacturing expenses}}{\text{Materials cost} + \text{Labour cost}} \times 100$$

$$= \frac{37.50}{150} \times 100 = 25\%$$

Manufacturing expenses are 25% of combined cost of materials & wages.

To ascertain the selling price to be quoted in the year 2005 we will prepare estimated cost sheet for 2005 as follows:

Estimated Cost Sheet for the year 2005

Production 3000 Units

Particulars		Total Cost Rs.	Cost Per Unit Rs.
I.	Direct Materials (1)	2,25,000	75.00
II.	Direct Labour (2)	2,97,000	99.00
	(A) Prime Cost	5,22,000	174.00
III.	Factory Overheads (3) (25% of Combined Cost of Materials & Wages)	1,30,500	43.50
	(B) Factory Cost	6,52,500	217.50
IV.	Office Overheads:	1,35,000	45.00
	(C) Cost of Production	7,87,500	262.50
V.	Selling & Distribution Expense	67,500	22.50
	(D) Cost of Sale	8,55,000	285.00
	Profit	95,000	31.67
	(E) Selling Price	9,50,000	316.67

Self-Assessment Questions - 2

4. _____ are those items which do not form part of cost of a product.
5. _____ is a statement which provides for the assembly of the detailed cost of entire units
6. Cost sheet shows total cost as well as cost per unit. State True/False.
7. _____ tends to vary directly with the volume of output

7. SUMMARY

Cost is the amount of expenditure incurred on a given thing. Cost is classified on the basis of behaviour, elements and function. On the basis of behaviour it has been divided into fixed variable and semi variable cost. On the basis of elements, it has been divided in to direct and indirect costs. On the basis of function, it has been divided into Administration, Selling and Distribution etc.

For determination of total cost of production, a statement showing the various elements of cost is prepared. This statement is called as a 'statement of cost' or 'cost sheet'. Very often, the management desires to know, 'what will be the cost?' even before the production starts. The purpose to know the cost before it is incurred might be different. For this purpose, the estimation of "probable cost" of production is essential.

8. TERMINAL QUESTIONS

1. What is cost? How would you classify cost?
2. Give examples of each of factory overheads and office overheads.
3. Distinguish between Fixed cost and variable cost.
4. What is a cost sheet? What are the purposes of cost sheet?
5. Discuss in details the elements of the total cost.
6. Mr. Rajendra furnishes the following data relating to the manufacture of X standard product during the month of April, 2005:

Raw Materials consumed	Rs.15, 000
Direct labour charges	Rs. 9,000
Machine hours worked	900
Machine hour rate	Rs. 5
Administrative overheads	20% on works cost
Selling overheads	Rs.0.50 per unit
Units produced	17,100
Units sold 16,000 at	Rs. 4 per unit

You are required to prepare a Cost Sheet from the above, showing:

- a) the cost per unit.
b) Profit per unit sold and profit for the period.
7. During the calendar year 2005 the accounts of Air Cool Services Ltd. Charai, Thane, manufacturers of AIR COOLERS revealed the following data:

Materials used	–	Rs. 9, 99,999
Direct Wages	–	Rs. 4, 44,444
Factory Overheads	–	Rs. 1, 11,111
Office Overheads	–	Rs. 15,556

It is estimated that in 2006:

1. Each Air cooler will require materials worth Rs. 990 /-
2. Expenditure on Direct wages will be Rs. 888/-
3. The factory overheads will bear the same ratio to works cost as in 2005
4. The office overheads will bear the same ratio to works cost as in 2005.
5. The company desired to earn profit 50% on selling price.

Prepare the statement showing the price at which the Air cooler should be sold during the year 2006.

9. ANSWERS

Self-Assessment Questions

1. Behaviour
2. Variable
3. material overhead
4. Non-cost items
5. Cost sheet
6. True
7. Variable cost

Answers to TQ's

1. Ref. 2
2. Ref. 3.2
3. Ref. 6
4. Ref. 5
5. Ref. 2.2

6. Statement of Cost of Production for the month of April 2005

Unit Produced = 17,100

		Per unit
	Rs.	Rs.
Raw Materials Consumed	15,000	
Direct Labour Charges	<u>9,000</u>	
Prime Cost	24,000	
Factory Expenses (900 hrs @ 5 per hr.)	<u>4,500</u>	
Works Cost	28,500	
Administrative Overheads (20% on Works Cost)	<u>5,700</u>	
Cost of Production	34,200	2.00

Statement of Profit

	Rs...
Cost of Production of 16,000 @ Rs. 2 per unit	32,000
Selling Overheads 50 Paise for 16,000 units	<u>8,000</u>
Cost of Sales	40,000
Profit for the period	<u>24,000</u>
Sales (16,000 units @ Rs. 4 per unit)	<u>64,000</u>
Profit per unit sold = $\frac{24,000}{16,000}$ = Rs.1.50	

Note: Factory overheads should be calculated on the basis of machine hours and the machine hour rate.

7

Cost Sheet of M/s. Air Coolers Ltd. Thane for the year ended 31st December, 2005

Particulars	Rs.
I. Direct Materials Consumed	9,99,999
II. Direct Wages	<u>4,44,444</u>
(A) Prime Cost	14,44,443
III. Factory Overheads	<u>1,11,111</u>
(B) Works Cost	15,55,554
IV. Office Overheads	15,556
(C) Cost of Production	<u>15,71,110</u>

Working Notes:

1. Ratio of factory overheads to wages :

$$\frac{1,11,111}{4,44,444} \times 100 = 25\%$$

2. Ratio of office overheads to works cost:

$$\frac{15,556}{15,55,554} \times 100 = 1\%$$

3. Profit is 50% on selling price:

If selling price is 100 then profit is 50. If Cost is 50 then %of profit to cost is,

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

Thus, profit is 100% of cost of production.

Estimated Cost Sheet for the year 2006

Particulars	Cost Per Unit Rs.
I. Direct Material	990
II. Direct Wages	<u>888</u>
(A) Prime Cost	1,878
III. Factory Overheads (25% of Direct Labour)	<u>222</u>
(B) Works Cost	<u>2,100</u>
IV. Office Overheads	21
(1% of Works Cost)	
(C) Cost of Production	<u>2,121</u>
Profit @100% of Cost	2,121
(D) Selling Price	4,242