GBA (S4) 03
Exam Code : CMA

Cost and Managment Accounting

SEMESTER - IV

BUSINESS ADMINISTRATION

BLOCK - 2

KRISHNA KANTA HANDIQUI STATE OPEN UNIVERSITY

Subject Experts

- **Professor Nripendra Narayan Sarma**, Maniram Dewan School of Mangement, KKHSOU
- **Professor Munindra Kakati**, VC, ARGUCOM
- **Professor Rinalini Pathak Kakati**,Dept.of Busniess Administration, GU

Course Coordinator : **Dr. Smritishikha Choudhury**, Asst. Prof., KKHSOU

Dr.Chayanika Senapati, Asst. Prof., KKHSOU

SLM Preparation Team

UNITS	CONTRIBUTORS
8-14	**Dr. Pradeep Kr. Jain** Gauhati University

Editorial Team

Content	:	**Dr. Arup Roy**, Tezpur University
Structure, Format and Graphics	:	Dr. Smritishikha Choudhury,KKHSOU Dr. Chayanika Senapati, KKHSOU

November, 2018

This Self Learning Material (SLM) of the Krishna Kanta Handiqui State Open University is made available under a Creative Commons Attribution-Non Commercial-ShareAlike4.0 License (International) : http.//creativecommons.org/licenses/by-nc-sa/4.0

Printed and published by Registrar on behalf of the Krishna Kanta Handiqui State Open University.

Head Office : Patgaon, Rani Gate, Guwahati-781017; Web : www.kkhsou.in/web_new
City Office: Housefed Complex, Dispur, Guwahati-781006

The University acknowledges with thanks the financial support provided by the **Distance Education Bureau, UGC, New Delhi**, for preparation of this study material.

SEMESTER 4
BACHELOR IN BUSINESS ADMINISTRATION
COST AND MANAGMENT ACCOUNTING
BLOCK 2

CONTENTS

		Pages
Unit 8:	**Cost Sheet** Elements Of Cost; Materials Cost; Labour Cost; Expenses;	**135-146**
Unit 9:	**Process Costing** Process Costing- Basic Concepts; Meaning; Characteristics; Difference between Job Costing and Process Costing; Advantages and Disadvantages of Process Costing; Process Loss	**147-158**
Unit 10:	**Standard Costing and Variance Analysis** Meaning and concept of Standard Cost and Standard Costing; Meaning and concept of Standard Cost and Standard Costing; Cost Variance; Sales Variances	**159-194**
Unit 11:	**Marginal Costing and Break Even Analysis** Meaning and Definition of Marginal Costing; Absorption Costing; Differential Costing; Cost Volume profit Analysis	**195-218**
Unit 12:	**Budgetary Control** Basic Concepts Of Budget; Budgetary Control; Types Of Budget;	**219-239**
Unit 13:	**Cash Flow Statement** Cash Flow Statement; Sources and Application of Cash; Cash from Operations; External Sources and Application of Cash	**240-256**
Unit 14:	**Reconcilliation of Cost** Reconciliation of Cost and Financial Account; Importance of Reconciliation; Method of Reconciliation	**257-267**

BLOCK 2: INTRODUCTION

This is the second block of Cost and Management Accounting and this second block consists of seven units.

The eighth unit heighlights the concept of cost sheet, its different elements like materials cost, Labour costs and expenses.

The ninth unit help us in understanding the various aspects of process costing, its meaning and charecteristics, advantages and disadvantages and also the difference between job costing and process costing.

The tenth unit is about Standard Costing and Variances and the analysis of variances.

The eleventh unit describes about Marginal Costing and Cost Volume Profit Analysis.

The twelfth unit heighlights the concept of budgetary control and its various types.

The thirteenth unit explains us about cash flow statement, sources and application of cash and preparation of cash flow.

The fourteenth and the last unit help us in understanding the reconciliation of cost and its importance and its various methods.

While going through this block, you will get some boxes marked with “ACTIVITY” which will help you in making your learning more active and efficient. And, at the end of each section, you will get “CHECK YOUR PROGRESS” questions. These have been designed to self-check your progress of study. It will be better if you solve the problems put in these boxes immediately after you go through the sections of the units and then match your answers with “ANSWERS TO CHECK YOUR PROGRESS” given at the end of each unit.the units and then match your answers with “ANSWERS TO CHECK YOUR PROGRESS” given at the end of each unit.

UNIT 8: COST SHEET

UNIT STRUCTURE

8.1 Learning Objectives

8.2 Introduction

8.3 Elements Of Cost

8.3.1 Materials Cost

8.3.2 Labour Cost

8.3.3 Expenses

8.4 Specimen of Cost Sheet

8.5 Let Us Sum Up

8.6 Further Reading

8.7 Answers to Check Your Progress

8.8 Model Questions

8.1 LEARNING OBJECTIVES

After going through this unit, you will be able to

- explain elements of Cost.
- define material cost, labour cost and Expenses.
- explain Overheads and Cost Sheets.
- outline specimen of Cost Sheet

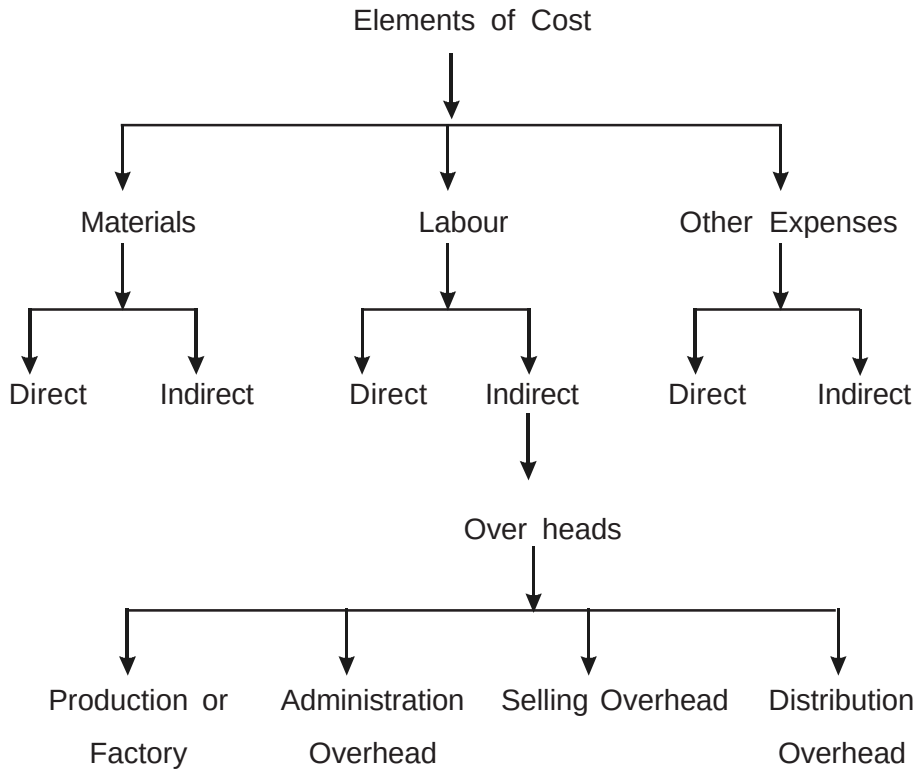
8.2 INTRODUCTION

In the earlier unit, you have been acquainted with job costing and contract costing. In this unit we are going to discuss another important topic, i.e. cost sheet and the various items associated with it. One important area to claim your attention is “elements of cost” which includes different costs, materials cost, labour costs and expenses. A detailed examination of each of these items is expected to enlighten you on the main subject of this unit i.e. Cost Sheet.

8.3 ELEMENTS OF COST

Meaning :

Elements of cost are necessary to have a proper classification and analysis of total cost. Thus, elements of cost provide the management with necessary information for proper control and management decisions. For this purpose, the total cost is analysed by the elements or nature of cost, i.e. material, labour and overheads. The various elements of costs may be illustrated as below :



By grouping the above elements of cost, the following divisions of cost are obtained :

1) Prime Cost = Direct materials + Direct Labour + Direct Expenses

2) Work Cost (Factory) = Prime Cost + Factory Overhead

3) Cost of Production = Factory Cost + Office and Administrative Overhead

4) Cost of Sales (or)
   Total Cost = Cost of production + Selling and Distribution overhead

8.3.1 Materials Cost

Materials Costs refer to cost of materials which are the major substances used in production and are converted into finished goods and semi-finished goods. Materials are grouped as direct materials and indirect materials.

Direct Materials : Direct materials are those that form part of product. Raw materials, semi finished products, and finished products which can be identified with production of a product are known as direct materials. Sugarcane, cotton, woods etc. are examples of direct materials .The cost of materials involves conversion of raw materials into finished products.

Indirect materials : Material costs, other than direct material cost are known as indirect material cost. Indirect materials cannot be identified with a particular unit of cost or product. Indirect materials are indirectly used for producing the products. Lubricating oil, consumable stores, fuel, design, layout etc. are examples of indirect material cost.

8.3.2 Labour Cost

In actual production of the product, labour is the prime factor which is physically and mentally involved. The payment of remuneration of wages is made for their effort. The labour costs are grouped into (a) Direct Labour and (b) Indirect Labour.

a) Direct Labour : Direct labour cost or direct wages refer to those, specifically incurred for or can be readily charged to or identified with a specific job, contract, work order or any other unit of cost are termed as direct labour cost. Wages for supervision, Wages for foremen, Wages for labours who are actually engaged in operation or process are examples of direct labour cost.

b) Indirect Labour : Indirect labour is for work in general. The importance of the distinction lies in the fact that whereas direct labour can be identified with and charged to the job, indirect labour cannot be so charged and has therefore to be treated as part of the factory overheads to be included in the cost of production. Examples are salaries and wages of supervisors, store keepers, maintenance labour etc.

8.3.3 Expenses

All expenses are other than material and labour that are incurred for a particular product or process. They are defined by ICMA as "The cost of service provided to an undertaking and the notional cost of the use of owned assets." Expenses are further grouped into (a) Direct Expenses and (b) Indirect Expenses.

a) Direct Expenses : Direct expenses which are incurred directly and identified with a unit of output or process are treated as direct expenses. Hire charges of special plant or tool, royalty on product, cost of special pattern etc. are the examples of direct expenses.

b) Indirect Expenses : Indirect expenses are expenses other than indirect materials and indirect labour, which cannot be directly identified with a unit of output. Rent, power, lighting, repairs, telephone etc. are examples of indirect expenses. Indirect expenses are those expenses which are incurred after the manufacturing of goods.

Overheads

All indirect material cost, indirect labour cost, and indirect expenses are termed as overheads. Overheads may also be classified into (a) Production or Factory Overhead (b) Office and Administrative Overheads (c) Selling Overhead and (d) Distribution Overhead.

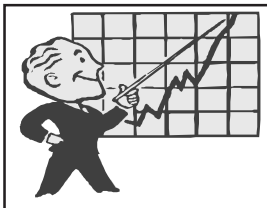
a) Production Overhead : Production Overhead is also termed as Factory Overhead. Factory overhead includes, indirect

material, indirect labour and indirect wages which are incurred in the factory. For example, rent of factory building, repairs, depreciation wages of indirect workers etc.

b) Office and Administrative Overhead : Office and Administrative Overhead is the indirect expenditure incurred in formulating the policies, establishment of objectives, planning, organizing and controlling the operations of an undertaking. All office and administrative expenses like rent, staff salaries, postage, telegram, general expenses etc. are example.

c) Selling Overhead : Selling Overhead is the indirect expenses which are incurred for promoting sales, stimulating demand, securing orders and retaining customers. For example, advertisement, salesmen's commission, salaries of salesmen etc.

d) Distribution Overhead : These costs are incurred from the time the product is packed until it reaches its destination. Cost of warehousing, cost of packing, transportation cost etc. are some of the examples of distribution overhead.



CHECK YOUR PROGRESS

Q1. What is overhead?

.....

.....

Q2. Give some exmaples of direct expenses.

.....

.....

.....

Q3. State true or false for the following statements:

(i) Lubricating oil, fuel, designs are some examples of direct material cost.

(ii) Rent, power, telephone bills etc. are some of the example of indirect expenses.

8.4 SPECIMEN OF COST SHEET

Meaning : Cost Sheet or a Cost Statement is "a document which provides for the assembly of the estimated detailed elements of cost in respect of cost centre or a cost unit." The analysis for the different elements of cost of the product is shown in the form of a statement called "Cost Sheet". The statement summarises the cost of manufacturing a particular list of product and discloses for a particular period :

I) Prime Cost
II) Works Cost (or) Factory Cost;
III) Cost of Production;
IV) Total Cost (or) Cost of Sales.

Importance of Cost Sheet

1) It provides for the presentation of the total cost on the basis of the logical classification.
2) Cost sheet helps in determination of cost per unit and total cost at different stages of production.
3) Assists in fixing of selling price.
4) It facilitates effective cost control and cost comparison.
5) It discloses operational efficiency and inefficiency to the management for taking corrective actions.
6) Enables the management in the preparation of cost estimates to tenders and quotations.

SPECIMEN OF COST SHEET

Cost sheet for the Period .....

Particulars	***Total Cost Rs.***	***Cost Per Unit Rs.***
Direct Materials :	xxx	
Opening Stock of Raw Materials	xxx	
Purchases	xxx	
Carriage Inwards		
Less : Closing Stock of Raw Materials	xxx	

Direct Materials Consumed		xxx	
Add :	Direct Wages	xxx	
	Direct Expenses	xxx	
	Prime Cost (I)	xxx	xxx
Add :	Works or Factory Overheads :	xxx	xxx
	Indirect Materials		
	Indirect Labour		
	Factory Rent and Rates		
	Factory Lighting and Heating		
	Power and Fuel		
	Repairs and Maintenance		
	Cleaning		
	Drawing Office Expenses		
	Cost of Research and Equipments		
	Depreciation of Factory Plant		
	Factory Stationery		
	Insurance of Factory		
Factory or Work Manager's Salary			
Other factory Expenses			
	Total Factory Cost	xxx	xxx
Add :	Opening Stock of Work in Progress	xxx	xxx
Less :	Closing Stock of Work in Progress		
Works Cost (or) Factory Cost (2)			
Add :	Office & Administrative Overheads :		
	Office Rent and Rates		
	Office Salaries		
	Lighting and Heating		
	Office Stationery		
	Office Insureance		

	Postage and Telegrams		
	Office Cleaning		
	Legal Charges		
	Depreciation of Furniture and Office		
	Equipments and Buildings Audit Fees		
	Bank Charges and Commission	xxx	xxx
Total Cost of Production (3)		xxx	xxx
Add :	Opening Stock of Finished Goods	xxx	xxx
		xxx	xxx
Less :	Closing Stock of Finished Goods	xxx	xxx
Cost of Production (4)		xxx	xxx
Add :	Selling and Distribution Overheads :	xxx	xxx
	Showroom Rent and Rates		
	Salesmen's Salaries		
	Salesmen's Commission		
	Sales Office Rent and Rates		
	Travelling Expenses of Salesmen		
	Warehouse Rent and Rates		
	Advertisement Expenses		
	Warehouse Staff Salaries		
	Carriage Outwards		
	Sales Manager's Salaries		
	Repairs and Depreciation of		
	Delivery Van		
	Sample and Free Gifts		
	Bad debts, debt collection Expenses	xxx	xxx
	Cost of Sales (5)		xxx
	Profit / Loss (6)		xxx
	Sales		xxx

EXERCISE : 1



From the following particulars, prepare a Cost Sheet showing (1) Cost of Materials Consumed (2) Prime Cost (3) Factory Cost (4) Cost of Production and (5) Profit.

	Rs.
Opening Stock of raw materials	20,000
Opening Stock of work in Progress	10,000
Opening stock of finished goods	50,000
Raw materials purchased	5,00,000
Direct wages	3,80,000
Sales for the year	12,00,000
Closing stock of raw materials	75,000
Closing stock of work in progress	15,000
Factory overhead	80,000
Direct expenses	50,000
Office and Administrative overhead	60,000
Selling and distribution expenses	30,000

Solution : 1

Cost Sheet for the year .....

Particulars	***Amount Rs.***	***Amount Rs.***
Opening Stock of Raw materials	20,000	
Purchases	5,00,000	
	5, 20,000	
Less : Closing Stock of Raw materials	75,000	
Cost of Raw materials Consumed (1)		4,45,000
Add : Direct Wages	3, 80,000	
Direct Expenses	50,000	4, 30,000
Prime Cost (2)		8, 75,000
Add : Factory overheads	80,000	
Add : Opening stock of work in progress	10,000	
	90,000	
Less : Closing stock of Work in Progress	15,000	75,000

Particulars		***Amount Rs.***	***Amount Rs.***
	Works Cost (or) Factory Cost (3)		9,50,000
Add :	Office & Administrative Overhead		60,000
	Cost of production (4)		10,10,000
Add :	Opening Stock of Finished Goods		50,000
			10, 60,000
Less :	Closing Stock of Finished Goods		50,000
	Cost of Goods Sold (5)		10,10,000
Add :	Selling and Distribution Overhead		30,000
	Cost of Sales (6)		10,40,000
	Profit (7)		1,60,000
Sales for the year			12,00,000



CHECK YOUR PROGRESS

Q4. What is cost sheet?

.....

.....

Q5. List three important factors of cost sheet.

.....

.....

.....



8.5 LET US SUM UP

In this unit, we have discussed about cost sheet. Cost sheet is the analytical presentation of total cost, i.e. material, labour and overhead cost. Cost sheet is a document which provides for the assembly of the estimated detail elements of cost in respect of a cost unit. Cost sheets assist in fixing of selling price. It also enables the management in the preparation of cost estimates to tenders and quotations.



8.6 FURTHER READINGS

1. Management Accounting: Khan & Jain
2. Cost Accounting : Hongren
3. Cost & Management Accounting: Jain & Narang
4. Cost Accounting: B. Banerjee

8.7 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q1. All indirect material cost, indirect labour cost, and indirect expenses are termed as overheads

Ans to Q2. Hire charges of special plant or tool, royalty on product, cost of special pattern etc. are the examples of direct expenses.

Ans to Q3. (i) False, (ii) True

Ans to Q4. Cost Sheet or a Cost Statement is "a document which provides for the assembly of the estimated detailed elements of cost in respect of cost centre or a cost unit."

Ans to Q5. 1) It provides for the presentation of the total cost on the basis of the logical classification.

2) Cost sheet helps in determination of cost per unit and total cost at different stages of production.

3) Assists in fixing of selling price.



8.8 MODEL QUESTIONS

Q1. What do you understand by cost sheet? Briefly explain with specimen of cost sheet.

Q2. Explain the different elements of total costs.

Q3. Explain the importance of cost sheet.

Q4. Explain the different functional classification of overheads.

Q5. Distinguish between :

a) Direct material and Indirect material

b) Direct labour and Indirect labour.

c) Direct expenses and Indirect expenses.

Q6. From the following particulars of a manufacturing firm prepare a statement showing :

1) Cost of Materials Consumed

2) Factory or Work Cost

3) Cost of Production

4) Profit

Cost of Production	***Rs.***
Stock of materials on 1st January 2003	80,000
Purchases during the period	22,00,000
Stock of finished goods on 1st January 2003	1,00,000
Direct wages	10,00,000
Sales	48,00,000
Factory on cost	3,00,000
Office and Administrative Expenses	2,00,000
Stock of raw materials on 31st December 2003	2,80,000
Stock of finished goods on 31st December 2003	1,20,000

Ans. :

(1) Rs. 20,00,000 (2) Rs. 33,00,000 (3) Rs. 35,00,000

(d) Rs. 13,20,000

*** ***** ***

UNIT 9: PROCESS COSTING

UNIT STRUCTURE

9.1 Learning Objectives

9.2 Introduction

9.3 Process Costing- Basic Concepts

- 9.3.1 Meaning
- 9.3.2 Characteristics of process costing
- 9.3.3 Difference between Job Costing and Process Costing
- 9.3.4 Advantages and Disadvantages of Process Costing

9.4 Process Loss

9.5 Let Us Sum Up

9.6 Further Readings

9.7 Answers to Check Your Progress

9.8 Model Questions.

9.1 LEARNING OBJECTIVES

After going through this unit, you will be able to -

- explain Process Costing
- describe difference between job costing and process costing
- discuss the advantages and disadvantages of process costing.

9.2 INTRODUCTION

In the earlier unit we have discussed on Cost Sheet. Here we are going to discuss about process costing. **Process costing** is an accounting methodology that traces and accumulates direct costs, and allocates indirect costs of a manufacturing process. Costs are assigned to products, usually in a large batch, which might include an entire month's production. Eventually, costs have to be allocated to individual units of product. It assigns average costs to each unit, and is the opposite extreme of Job costing which attempts to measure individual costs of production of each unit.

9.3 PROCESS COSTING — BASIC CONCEPTS

Process costing is a type of operation costing which is used to ascertain the cost of a product at each process or stage of manufacture. Chartered Institutes of Management Accountants defines process costing as "The costing method applicable where goods or services result from a sequence of continuous or repetitive operations or processes. Costs are averaged over the units produced during the period". Process costing is suitable for industries producing homogeneous products and where production is a continuous flow. A process can be referred to as the sub-unit of an organization specifically defined for cost collection purpose.

9.3.1 Meaning

Process Costing is a method of costing. It is employed where each similar units or production involved in different series of process from conversion of raw materials into finished output. Thus unit cost is determined on the basis of accumulated costs of each operation or at each stage of manufacturing a product. Charles T. Horngren defines process costing as “a method of costing deals with the mass production of the like units that usually pass the continuous fashion through a number of operations called process costing.”

The application of process costing where industries adopting costing procedure for continuous or mass production. Textiles, chemical works, cement industries, food processing industries etc. are the few examples of industries where process costing is applied.

9.3.2 Characteristics of Process Costing

1) Continuous or mass production where products which passes through distinct process or operations.
2) Each process is deemed as a separate operations or production centre.
3) Products produced are completely homogenous and standardized.

4) Output and cost of one process are transferred to the next process till the finished product completed.
5) Cost of raw materials, labour and overheads are collected for each process.
6) The cost of a finished unit is determined by accumulated of all costs incurred in all the process divided by the number of units produced.
7) The cost of normal and abnormal losses usually incurred at different stages of production is added to finished goods.
8) The interconnected processes make the final output of by-product or Joint products possible.

9.3.3 Difference between Job Costing and Process Costing

Job Costing	*Process Costing*
1) Production is made against specific order from the customers.	1) Production is a continuous process based on future demand
2) Variety of products are produced according to specifications.	2) Homogenous products are produced in large scale.
3) Output and costs are not involved in any transactions from one job to another.	3) Output and costs are transferred from one process to another process.
4) Cost control is more difficult because each job is different from other.	4) Effective cost control is possible because production is standardized.
5) Cost ascertainment and determination of unit cost can be possible only when job is completed.	5) Costs are collected and accumulated at the end of the accounting period.
6) There is no question of work in progress at the beginning or end of the period.	6) Work in progress is always there because production is continuous.

9.3.4 Advantages and Disadvantages of Process Costing

Advantages

The main advantages of process costing are :

1) Determination of the cost of process and unit cost is possible at short intervals.
2) Effective cost control is possible.
3) Computation of average cost is easier because the products produced are homogenous.
4) It ensures correct valuation of opening and closing stock of work in progress in each process.
5) It is simple to operate and involve less expenditure.

Apportionment:
Distribution according to a plan

Disadvantages

1) Computation of average cost does not give the true picture because costs are obtained on historical basis.
2) Operational weakness and inefficiencies on processes can be concealed.
3) It becomes more difficult to apportionment of joint costs, when more than one type of products manufactured.
4) Valuation of work in progress is done on estimated basis, it leads to inaccuracies in total costs.
5) It is difficult to measure the performance of individual workers and supervisors.



CHECK YOUR PROGRESS

Q1. Write any two differences between job costing and process costing.

.....

.....

Q2. Mention any two advantages and disadvantages of process costing.

.....

.....



EXERCISE : 1

Following figures show the cost of A product passes through three processes. In March 1000 units were produced. Prepare the process accounts and find out per unit of each process.

	Process I	**Process II**	**Process II**
	Rs.	Rs.	Rs.
Raw materials	50,000	30,000	20,000
Wages	30,000	25,000	25,000
Direct Expenses	7,000	3,000	5,000

Overhead expenses were Rs. 12,000 and it should be apportioned on the basis of wages.

Solution : 1

Process I Account

Particulars	Units	Amounts Rs.	Particulars	Units	Amounts Rs.
To Raw Materials	1,000	50,000	By Process II A/c	1,000	91,500
To wages		30,000	(Output transferred		
To Direct		7,000	@ Rs . 91.50 per		
Expenses			unit)		
To Overhead		4,500			
Expenses					
	1,000	91,500		1,000	91,500

Process II Account

Particulars	Units	Amounts Rs.	Particulars	Units	Amounts Rs.
To Process II A/c (Transferred from Process I)	1,000	91,500	By Process III A/c (Output transferred @ Rs . 153.25 per unit)	1,000	1,53,250
To Raw Materials		30,000			
To wages		25,000			
To Direct Expenses		3,000			
To Overhead Expenses		3,750			
	1,000	1,53,250		1,000	1,53,250

Process III Account

Particulars	Units	Amounts Rs.	Particulars	Units	Amounts Rs.
To Process II A/c (Transferred from Process II)	1,000	1,53,250	By Finished stock (Output transferred @ Rs . 153.25 per unit)	1,000	2,07,000
To Raw Materials		20,000			
To wages		25,000			
To Direct Expenses		5,000			
To Overhead Expenses		3,750			
	1,000	2,07,000		1,000	2,07,000

9.4 PROCESS LOSSES

Process Losses may be defined as the loss of material occur at different stages of manufacturing process. The following are the types of losses unavoidable during the course of processing operations such as :

1) Normal Process Loss
2) Abnormal Process Loss
3) Abnormal Process Gain
4) Spoilage
5) Defectives

1) Normal Process Loss : The cost of normal process loss in practice is absorbed by good units produced under the process: This is known as Normal Process Loss or Normal Wastage. For example, evaporation, scrap, stamping process etc. The amount realized by the sale of normal process loss units should be credited to process account.

(2) Abnormal Process Loss : The cost of an abnormal process loss unit is equal to the cost of good unit. The total cost of abnormal process loss is credited to process accounts from which it arises. This is known as Abnormal Process Loss. Such loss may be caused by breakdown of machinery, false production planning, lack of effective supervision, substandard materials etc. Cost of abnormal process loss is not treated as cost of the product. In fact, the total cost of abnormal process loss is debited to Costing Profit and Loss Account.

Computation of Abnormal Loss :

$$\text{Value of Abnormal Loss} = \frac{\text{Normal Cost of Normal output}}{\text{Normal Output}} \times \text{Units of Abnormal Loss}$$

Where :

Quantity of Abnormal Loss = Normal Output - Actual Output

Normal Output = Input - Normal Loss

If actual output is less than normal output to balance represents Units of Abnormal Loss.

(3) Abnormal Process Gain : Abnormal Process Gain may be defined as unexpected gain in production under normal conditions. The process account under which abnormal gain arises is debited with abnormal gain. The cost of abnormal gain is computed on the basis of normal production.

(4) Spoilage : Normal Spoilage (i.e. which is inherent in operation) costs are included in costs either by charging the loss due to spoilage to the production order or by charging it to production overhead so that it is spread over all the products. Any value realized from the sale of spoilage is credited to production order or production overhead account as the case may be. The cost of abnormal spoilage is charged to Costing Profit and Loss Account. When spoiled work is the result of rigid specification, the cost of spoiled work is absorbed by good production while the cost of disposal is charged to production overhead.

5) Defectives : Defectives that are considered inherent in the process and are identified as normal can be recovered by using the following method.

- Charged to goods products
- Charged to general overheads
- Charged to departmental overheads

If defectives are abnormal, they are to be debited to Costing Profit and Loss Account.



CHECK YOUR PROGRESS

Q3. What are the different types of process loss?

.....

.....

.....

.....

.....



EXERCISE : 2

A product passess through three processes X, Y and Z to its manufacture. From the following details, ascertain the cost of the product at the end of each stages of production.

	Process X	**Process Y**	**Process Z**
	Rs.	Rs.	Rs.
Raw materials	25,000	30,000	20,000
Wages	15,000	20,000	10,000
Manufacturing Expenses	5,000	8,000	7,000
Output in Units	10,000	11,200	13,000
Opening Stock (units in Previous Process)	-----	7,000	5,000
Closing Stock (units in Previous Process)	-----	5,000	3,000

Solution : 2

Process X Account

Particulars	Units	Amounts Rs.	Particulars	Units	Amounts Rs.
To Raw Materials	1,000	25,000	By Process Y	10,000	45,000
To Wages		15,000	(@ Rs. 4.5 per unit transfereed		
To Manufacturing Expenses		5,000	to Process Y)		
	10,000	45,000		10,000	45,000

Process Y Account

Particulars	Units	Amounts Rs.	Particulars	Units	Amounts Rs.
To Opening Stock (@Rs. 4.5 per unit)	7,000	31,500	By Wastage By Process Z Production	800	-------
To Process X	10,000	45,000		11,200	1, 12, 000
To Raw materials		30,000	= Rs. 10 per unit		
To Wages		20,000			
To Manufacturing Expenses		8,000	By Closing Stock (@ Rs. 4.5 per unit)	5,000	22, 500
	17,000	1,34,500		17,000	1, 34, 500

Process Z Account

Particulars	Units	Amounts Rs.	Particulars	Units	Amounts Rs.
To Opening Stock (@Rs. 10 per unit)	5,000	50,000	By Wastage By Closing Stock	200 3,000	------- 30,000
To Process Y	11,200	1,12,000	(@ Rs. 10 per unit)		
To Raw Materials		20,000	By production	13,000	1,69,000
To Wages		10,000	@ Rs. 13 per unit		
To Manufacturing Expenses		7,000			
	16,200	1,99,000		16,200	1, 99, 000



9.5 LET US SUM UP

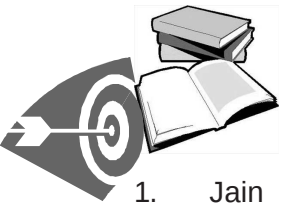
In this unit we have discussed about process costing. Process Costing is a method of costing. The application of process costing is where industries adopting costing procedure for continuous or mass production. It is employed where each similar units or production involved

in different series of process from conversion of raw materials into finished output. Thus unit cost is determined on the basis of accumulated costs of each operation or at each stage of manufacturing a product.

The application of process costing is where industries adopting costing procedure for continuous or mass production. Textiles, chemical works, cement industries, food processing industries etc.

Again, Process Losses may be defined as the loss of material occurs at different stages of manufacturing process. The following are the types of losses unavoidable during the course of processing operations such as:

- Normal Process Loss
- Abnormal Process Loss
- Abnormal Process Gain
- Spoilage
- Defectives



9.6 FURTHER READING

1. Jain P K & Khan MY(2017); *Management Accounting*,7edition Mcgraw Higher Ed, India
2. Narang K.L. & Jain S.P.(2015), *Cost Accounting*, Kalyani Publications
3. Narang K.L. & Jain S.P(2015), *Cost And Management Accounting,*
4. Lal J & Srivastava S (2013), *Cost & Management Accounting*; Mcgraw Higher Ed
5. Banerjee(2013);*Cost Accounting: Theory and Practice*; PHI Learning Pvt Ltd; New Delhi

9.7 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q1.

ADVANTAGES

1) Determination of the cost of process and unit cost is possible at short intervals.

2) Effective cost control is possible.

DISADVANTAGES

1) Computation of average cost does not give the true picture because costs are obtained on historical basis.
2) Operational weakness and inefficiencies on processes can be concealed.

Ans to Q2.

1) Normal Process Loss
2) Abnormal Process Loss
3) Abnormal Process Gain
4) Spoilage
5) Defectives



9.8 MODEL QUESTIONS

Q1. Define Job Costing.

Q2. What are the important features of Job Order Costing?

Q3. What are the advantages and disadvantages of Job Costing?

Q4. Explain briefly the objectives of Job Order Costing?

Q5. What do you understand by Batch Costing?

Q6. What are the difference between Job Costing and Batch Costing?

Q7. What is process costing? What are its Characteristics?

Q8. What are the merits and demerits of process costing?

Q9. Write short notes on:

a) Normal Process Loss

b) Abnormal Process Loss

c) Abnormal Gain.

Q10. What do you understand by Process Losses?

*** ***** ***

UNIT 10: STANDARD COSTING AND VARIANCE ANALYSIS

UNIT STRUCTURE

10.1 Learning objectives

10.2 Introduction

10.3 Meaning and concept of Standard Cost and Standard Costing

- 10.3.1 Difference between Estimated Costing and Standard Costing
- 10.3.2 Comparison between Standard Costing and Budgetary Control
- 10.3.3 Advantages and limitations of Standard Costing
- 10.3.4 Determination of Standard Costs

10.4 Meaning of Variance Analysis

- 10.4.1 Types of Variance

10.5 Cost Variance

- 10.5.1 Direct Material Cost Variance
- 10.5.2 Direct Labour Cost Variance
- 10.5.3 Overhead Variances
- 10.5.4 Classification of Overhead Variances

10.6 Sales Variances

10.7 Let Us Sum Up

10.8 Further Reading

10.9 Answers to Check Your Progress

10.10 Model Questions

10.1 LEARNING OBJECTIVES

After going through this unit, you will be able to -

- explain the meaning of Standard Cost and Standard Costing
- describe the advantages and limitations of Standard Costing
- discuss the determination of Standard Cost
- explain the concept of variance analysis and its various types.

10.2 INTRODUCTION

In the earlier unit we discussed about process costing. Now in this unit we are going to discuss the concept of Standard Costing and variance analysis.

Standard Costing is a technique which helps us to control costs and business operations. It aims at elimination of wastes and increasing efficiency in performance through setting up standards or formulating cost plans. We will also discuss the difference between estimated Costs and Standard Costs and the advantages and limitations of Standard Costing. Again, we will get a fair idea on determination of Standard Cost.

Also, at the end of this unit we will discuss the variance analysis, its various types and its classifications.

10.3 MEANING OF STANDARD COST AND STANDARD COSTING

Standard Cost : The word "Standard" means a "Yardstick" or "Bench Mark". The term "Standard Costs" refers to Pre-determined costs. Brown and Howard defined Standard Cost as a predetermined Cost which determines what each product or service should cost under given circumstances. This definition states that standard costs represent planned cost of a product.

Standard cost as defined by the "Institute of Cost and Management Accountant", London "is the Pre-determined Cost based on technical estimate for materials, labour and overhead for a selected period of time and for a prescribed set of working conditions."

Standard Costing : Standard Costing is a concept of accounting for determination of standard for each element of costs. These predetermined costs are compared with actual costs to find out the deviations known as "Variances." Identification and analysis of causes for such variances and remedial measures should be taken in order to overcome the reasons for variances.

'Chartered Institute of Management Accounts England' defines Standard

Costing as "the Preparation and use of standard costs, their comparison with actual costs and the analysis of variances to their causes and points of Incidence."

From the above definition, Standard Costing may be summarized as follows :

1) Determination of appropriate standards for each element of cost.
2) Ascertainment of information about actuals and use of Standard Costs.
3) Comparison of actual costs with Standard Costs, the differences is known as Variances.
4) Analysis of Variances to find out the causes of Variances.
5) Reporting to the responsible authority for taking remedial measures.

10.3.1 Difference between Estimated Costs and Standard Costs

Although, Pre-determination is the essence of both Standard Costing and Estimated Costing, the two differ from each other in the following respects :

Standard Costing	*Estimated Costing*
1) It is used on the basis of scientific.	1) It is used on the basis of statistical facts and figures.
2) It emphasises "What the cost should be".	2) It emphasises "What the cost will be".
3) It is used to evaluate actual performance and it serves as an effective tool of cost.	3) It is used for cost ascertainment for fixing sales price.
4) It is applied to any industry engaged in mass production	4) It is applicable to concern engaged in construction work.
5) It is a part of accounting system and standard costing variances are recorded in the books of accounts.	5) It is not a part of accounting system because it is based on statistical facts and figures.

10.3.2 Comparison between Standard Costing and Budgetary Control

Relationship : The following are certain basic principles common to both Standard Costing and Budgetary Control :

1) Determination of standards for each element of costs in advance.
2) For both of them measurement of actual performance is targeted.
3) Comparison of actual costs with standard cost to find out deviations.
4) Analysis of variances to find out the causes.
5) Give the periodic report to take corrective measures.

Differences : Though Standard Costing and Budgetary Controls aims at the maximum efficiencies and Marginal Cost, yet there are some basic differences between the two from the objectives of using the two costs.

Budgetary Control	*Standard Costing*
1) Budgets are projections of financial accounts.	1) Standard Costing is projection of cost accounts.
2) As a statement of both income and expenses, it forms part of budgetary control.	2) Standard costing is not used for the purpose of forecasting.
3) Budgets are estimated costs, they are "What the cost will be".	3) Standard Cost are the "Norms" or "What cost should be".
4) Budget can be operated with standards.	4) Standard Costing cannot be used without budgets.
5) In budgtetary control, variances are not revealed through the accounts.	5) Under standard costing variances are revealed through different accounts.

6) Budgets are prepared on the basis of historical facts and figures.	6) Standard cost are planned and prepared on the basis of technical estimates.

10.3.3 Advantages and limitations of Standard Costing

Advantages of Standard Costing :

The following are the important advantages of standard costing:

1) It guides the management to evaluate the production performance.
2) It helps the management in fixing standards.
3) Standard costing is useful in formulating production planning and price policies.
4) It guides as a measuring rod for determination of variances.
5) It facilitates eliminating inefficiencies by taking corrective measures.
6) It acts as an effective tool of cost control.
7) It helps the management in taking important decisions.
8) It facilitates the principle of “Management by Exception.”
9) Effective cost reporting system is possible.

Limitations of Standard Costing

Besides all the benefits derived from this system, it has a number of limitations which are given below :

1) Standard costing is expensive and a small concern may not meet the cost.
2) Due to lack of technical aspect, it is difficult to establish standards.
3) Standard costing cannot be applied in the case of a concern where non-standardised products are produced.
4) Fixing of responsibility is difficult. Responsibility cannot be fixed in the case of uncontrollable variances.
5) Frequent revision is required while insufficient staff is incapable of operating this system.
6) Adverse psychological effects and frequent technological changes will not be suitable for standard costing system.

10.3.4 Determination of Standard Costs

The following preliminary steps must be taken before determination of standard cost :

1) Establishment of Cost Centers.
2) Classification and Codification of Accounts.
3) Types of Standards to be applied.
   a) Ideal Standard
   b) Basic Standard
   c) Current Standard
   d) Expected Standard
   e) Normal Standard
4) Organization for Standard Costing.
5) Setting of Standards.

1) Establishment of Cost Centres : It is the first step required before setting of Standards. According to CIMA, London Cost centre is "a location, person or item of equipment for which costs may be ascertained and used for the purpose of cost control." Cost centre is necessary for the determination of standard costs for each product and comparison of actual cost with the predetermined standards to ascertain the deviations to take corrective measures.

2) Classification and Codification of Accounts : Classification of Accounts and Codification of different items of expenses and incomes help quick ascertainment and analysis of cost information.

3) Types of Standards to be Applied : Determination of the type of standard to be used is one of the important steps before setting up of standard cost. The different types of standards are given below :
   a) Ideal Standard
   b) Basic Standard
   c) Current Standard



Codification:
A set of rules or principles or laws (especially written ones)

d) Expected Standard

e) Normal Standard

a) Ideal Standard : The term "Ideal Standard" refers to the standard which can be attained under the most favorable conditions possible. In other words, ideal standard is based on high degree of efficiency. It assumes that there is no wastage, no machine breakdown, no power failure, no labour ideal time in the production process. In practice it is difficult to attain this ideal standard.

b) Basic Standard : This standard is otherwise known as Bogey Standard. Basic Standard which is established for use is unaltered over a long period of time. In other words this standard is fixed in relation to a base year and is not changed in response to changes in material costs, labour costs and other expenses as the case may be. The application of this standard has no practical importance from cost control and cost ascertainment point of view.

c) Current Standard : The term "Current Standard" refers to a "a standard established for use over a short period of time related to current conditions which reflects the performance that should be attained during the period." These standards are more suitable and realistic for control purpose.

d) Expected Standard : Expected Standard may be defined as "The standard which may be anticipated to be attained during a future specified budget period." These standards set targets which can be achieved in a normal situation. As such, it is more realistic than the Ideal Standard.

e) Normal Standard : This standard resents an average standard in past which is anticipated, can be attained over a future period of time, preferably long enough to cover one trade cycle. The usefulness of such standards is very limited for the purpose of cost control.



Anticipated:
Expected hopefully

Resent:
Wish ill



Vested: Fixed

4) Organization for Standard Costing : The success of the standard costing system depends upon the reliability of standards. Hence, the responsibility for setting standard is vested with the Standard Committee. It consists of

a) Purchase Manager
b) Production Manager
c) Personal Manager
d) Time and Motion study Engineers
e) Marketing Manager and Cost Accountant

5) Setting of Standard : The Standard Committee is responsible for setting standards for each element of costs as given below:

I. Direct Material
II. Direct Labour
III. Overheads
    a) Fixed Overheads
    b) Variable Overhead

1. Standard for Direct material Cost :

The following are the standard involved in direct materials cost:

a) Material Quantity or Usage Standard.
b) Material Price Standard.

i) Material Usage Standard : Material Usage Standard is prepared on the basis of material specifications and quality of materials required to manufacture a product. While setting of standards proper allowance should be provided for normal losses due to unavoidable occurrence of evaporation breakage etc.

ii) Material Price Standard : Material Price Standard is calculated by the Cost Accountant and the Purchase Manager for each type of materials. When this type of standard is used, it is essential to consider the important factors such as market conditions, forecasting relating to the trends of prices, discounts etc.

II. Standard for Direct Labour Cost

The following standards are established :

i) Fixation of Standard Labour Time

ii) Fixation of Standard Rate

i) Fixation of Standard labour Time : Labour Standard time is fixed and it depends upon the nature of cost unit, nature of operations performed, Time and Motion study etc. While determining the standard time, normal ideal time is allowed for fatigue and other contingencies.

ii) Fixation of Standard Rates : The standard rate fixed for each job will be determined on the basis of methods of wage payment such as Time Wage System, Piece Wage System, Differential Piece Rate System and Premium Plan etc.

III. Setting Standards for Overheads :

The following problems are involved while setting standards for over heads :

1) Determination of Standard overhead cost

2) Estimating the production level of activity to be measured in terms of common base like machine hours, units of production and labour hours.

Setting of overhead standards is divided into fixed overhead, variable overhead and semi-variable overhead. The determination of overhead rate may be calculated as follows:

$$\text{a) Standard Overhead Rate} = \frac{\text{Standard overhead for the budget period}}{\text{Standard Production for the budget period}}$$

$$\text{b) Standard Variable Overhead Rate} = \frac{\text{Standard overhead for the budget period}}{\text{Standard Production for the budget period}}$$

Standard Hour : Usually production is expressed in terms of units, dozen, kgs, pound, liters etc. When productions are of different types, all products cannot be expressed in one unit.

Under such circumstances, it is essential to have a common unit for all the products. Time factor is common to all the operation. ICMA, London, defines a Standard Time as a "hypothetical unit pre-established to represent the amount of work which should be performed in one hour at standard performance."

Standard Cost Card : After fixing the standards for direct material, direct labour and overhead cost, they are recorded in a Standard Cost Cord. This Standard cost is presented for each unit cost of a product. The total Standard Cost of manufacturing a product can be obtained by aggregating the different Standard Cost Cards of different processes. These Cost Cards are useful to the firm in production planning and pricing policies.



CHECK YOUR PROGRESS:

Q1. Define standard Costing.

.....

.....

Q2. Write any two advantages and limitations of Standard Costing.

.....

.....

.....

.....

10.4 MEANING OF VARIANCE ANALYSIS

Standard Costing guides as a measuring rod to the management for determination of "Variances". In order to evaluate the production performance. The term "Variances" may be defined as the difference between standard cost and actual cost for each element of cost incurred during a particular period. The term "Variance Analysis" may be defined as the process of analyzing variance by subdividing the total variance in such a way that management can assign responsibility for off-Standard Performance.

The variance may be favorable variance or unfavorable variance. When the actual performance is better than the Standard, it is called

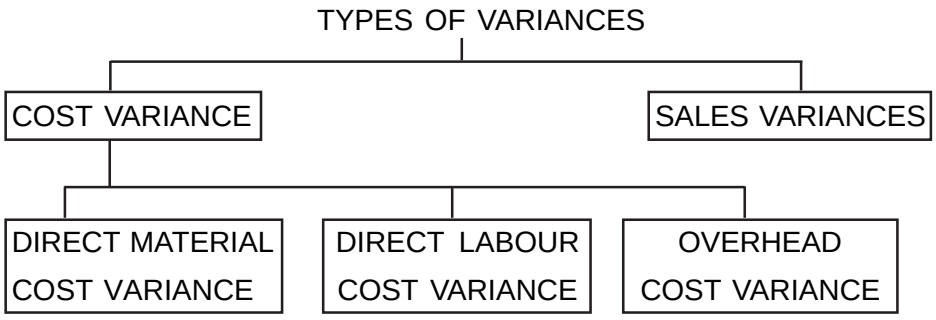
"Favorable Variance." Similarly, where actual performance is below the standard it is called a "Unfavorable Variance."

Variance analysis helps to fix the responsibility so that management can ascertain ----

a) The amount of the variance
b) The reasons for the difference between the actual performance and budgeted performance.
c) The person responsible for poor performance
d) Remedial actions to be taken.

10.4.1 Types of Variances

Variances may be broadly classified into two categories (A) Cost Variance and (B) Sales Variance.



10.5 COST VARIANCE

Total Cost variance is the difference between Standards Cost for the Actual Output and the Actual Total Cost incurred for manufacturing actual output. The total cost Variance Comprises the following :

I. Direct Material Cost Variance (DMCV)
II. Direct Labour Cost Variance (DLCV)
III. Overhead Cost Variance (OCV)

10.5.1 Direct Material Variances

Direct Material Variances are also termed as Material Cost Variances. The Material Cost Variance is the difference between the Standard cost of materials for the Actual Output and the Actual Cost of materials used for producing actual output. The Material Cost Variance is calculated as :

Material Cost Variance = Standard Cost of Actual Output – Actual Cost

(or)

$$= \left\{\begin{matrix}\text{Standard} \\ \text{Quantity}\end{matrix} \text{ X } \begin{matrix}\text{Standard} \\ \text{Price}\end{matrix}\right\} - \left\{\begin{matrix}\text{Actual} \\ \text{Quantity}\end{matrix} \text{ X } \begin{matrix}\text{Actual} \\ \text{Price}\end{matrix}\right\}$$

MCV = (SQ x SP) — (AQ x AP)

Note : If the actual costs is more than standard cost, the variance will be unfavorable or adverse variance and on the other hand, if the actual cost is less than standard cost, the variance will be favorable variance. The material cost variance is further classified into :

1) Material Price Variance
2) Material Usage Variance
3) Material Mix Variance
4) Material Yield Variance

1) Material Price Variance (MPV) : Material Price Variance is that porton of the Material Cost Variance which is due to the difference between the Standard Price specified and the Actual Price paid for purchase of materials. Material Price Variance may be calculated by

Material Price Variance

$$= \begin{matrix}\text{Actual} \\ \text{Quantity}\end{matrix} \text{ X } \left\{\begin{matrix}\text{Standard} \\ \text{Price}\end{matrix} - \begin{matrix}\text{Actual} \\ \text{Price}\end{matrix}\right\}$$

MPV = AQ (SP— AP)

Note : If actual cost of materials used is more than the standard cost the variance is adverse, it represents negative (-) symbol. And on the other hand, if the variance is favorable it is to be represented by positive (+) symbol.

2) Material Usage Variance (MUV) : Material Usage Variance is that part of Material Cost Variance which refers to the difference between the standard cost of standard quantity of material for actual output and the Standard cost of the actual

material used. Material Usage Variance is calculated as follows :

$$\text{Material Usage Variance} = \begin{matrix}\text{Standard}\\ \text{Price}\end{matrix} \times \left\{ \begin{matrix}\text{Standard}\\ \text{Quantity}\end{matrix} - \begin{matrix}\text{Actual}\\ \text{Quantity}\end{matrix} \right\}$$

MUV = SP (SQ— AQ)

Note : This Variance will be favorable when standard cost of actual material is more than the Standard Material Cost for actual output, and Vice Versa.

3) Material Mix Variance (MMV) : It is the portion of the material usage variance which is due to the difference between the Standard and the actual composition of mix. Material Mix Variance is calculated under two situations as follows :

a) When actual weight of mix is equal to standard weight to mix

b) When actual weight of mix is different from the standard mix.

a) When Actual Weight and Standard Weight of Mix are equal :

i) The formula is used to calculate the variance :

$$\text{Material Mix Variance} = \begin{matrix}\text{Standard}\\ \text{Price}\end{matrix} \times \left\{ \begin{matrix}\text{Standard}\\ \text{Quantity}\end{matrix} - \begin{matrix}\text{Actual}\\ \text{Quantity}\end{matrix} \right\}$$

MMV = SP(SQ-AQ)

ii) In case standard quantity is revised due to shortage of a particular category of materials, the formula will be changed as follows :

Material Mix Variance

MMV = SP(RSQ-AQ)

a) When Actual Weight and Standard Weight of Mix are different:

i) The formula is used to calculate the variance is :

$$\text{Material Mix Variance} = \text{Standard Cost of Revised Standard Mix} - \text{Standard Cost of Actual Mix}$$

ii) In case the Standard is revised due to the shortage of a particular category of materials, the alternative formula will be as follows:

$$\text{Material Mix Variance} = \left\{ \frac{\text{Total Weight of Actual Mix}}{\text{Total Weight of Standard Mix}} \times \text{Standard Cost of Revised Standard Mix} \right\} - \text{Standard Cost of Actual Mix}$$

4) Materials Yield Variance (MYV) : It is the portion of Material Usage Variance. This variance arises due to spoilage, low quality of materials and defective production planning etc. Materials Yield Variance may be calculated as under :

$$\text{Material Yield Variance} = \text{Standard Rate} \times \left\{ \text{Actual Yield} - \text{Standard Yield} \right\}$$

Where :

Standard Rate is calculated as follows :

$$\text{Standard Rate} = \frac{\text{Standard Cost of Standard Mix}}{\text{Net Standard Output}}$$

Verification :

The following equations may be used for verification of Material cost variances :

1) Material Cost Variance = Material Price Variance + Material Usage Variance

2) Material Usage Variance= Material Mix Variance + Material Yield Variance

3) Material Cost Variance = Material Mix Variance + Material Yield Variance



Exercise : 1

Calculate Material Cost Variance from the following information :

Standard Price of material per Kg = Rs. 4
Standard Usage of material = 800 kgs
Actual Usage of materials = 920 kgs
Actual Price of materials per kg = Rs. 3
Actual Cost of materials Rs. 2,760
Standard Cost of materials for actual production Rs. 3,200

Solution : 1

1)Material Cost Variance $= \left\{\begin{matrix}\text{Standard}\\ \text{Price}\end{matrix} \times \begin{matrix}\text{Standard}\\ \text{Quantity}\end{matrix}\right\} - \left\{\begin{matrix}\text{Actual}\\ \text{Price}\end{matrix} \times \begin{matrix}\text{Actual}\\ \text{Quantity}\end{matrix}\right\}$

= (4 x 800) — (3 x 920)

= Rs. 3,200 — Rs. 2,760 = Rs. 440 (F)

2) Material Price Variance $= \begin{matrix}\text{Actual}\\ \text{Quantity}\end{matrix} \times \left\{\begin{matrix}\text{Standard}\\ \text{Price}\end{matrix} - \begin{matrix}\text{Actual}\\ \text{Price}\end{matrix}\right\}$

= 920 x (4—3)

= 920 x 1= Rs. 920 (F)

3) Material Usage Variance $= \begin{matrix}\text{Actual}\\ \text{Quantity}\end{matrix} \times \left\{\begin{matrix}\text{Standard}\\ \text{Price}\end{matrix} - \begin{matrix}\text{Actual}\\ \text{Price}\end{matrix}\right\}$

= 4 x (800 — 920)

= 4 x 120 = Rs. 480 (A)

10.5.2 Direct Labour Variances

Labour Variances can be classified into

a) Labour Cost Variance (LCV)

b) Labour Rate Variance or Wage Rate Variance

c) Labour Efficiency Variance

d) Labour Idle Time Variance

e) Labour Mix Variance

f) Labour Revised Efficiency Variance

g) Labour Yield Variance

a) Labour Cost Variance (LCV) : Labour Cost Variance is the difference between the Standard Cost of labour allowed for the actual output achieved and the actual wages paid. It is also termed as Direct Wage Variance or Wage Variance. Labour Cost Variance is calculated as follows :

Labour Cost Variance = Standard Cost of Labour — Actual Cost of Labour

(or)

$$\text{Labour Cost Variance LCV} = \text{Standard Rate} \times \text{Standard Time for Actual Output} - \text{Actual Rate} \times \text{Actual Time}$$

Note : If actual labour cost is more than the standard labour cost, the variance represents negative and vice versa.

b) Labour Rate Variance : It is that part of labour cost variance which is due to the difference between the standard rate specified and the actual rate paid. This variances arise from the following reasons :

a) Change in wage rate.

b) Faulty recruitment.

c) Payment of overtime.

d) Employment of casual workers etc.

It is expresses as follows :

$$\text{Labour Rate Varience} = \text{Actual Time} \times \left\{ \text{Standard Rate} - \text{Actual Rate} \right\}$$

Note : If the Standard rate is higher than the actual rate, the variance will be favorable and vice Versa.

c) Labour Efficiency Variance : Labour Efficiency Variance otherwise known as Labour Time Variance. It is that portion of the Labour Cost Variance which arises due to difference between standard labour hours specified and the actual labour hours spent. The usual reasons for this variance are (a) poor supervision (b) poor working condition (c) increase in labour turnover (d) defective materials. It may be calculated as following :

$$\text{Labour effeciency Variance} = \left(\begin{matrix}\text{Standard}\\ \text{Hours}\end{matrix} - \begin{matrix}\text{Actual}\\ \text{Hours}\end{matrix} \right) \times \begin{matrix}\text{Standard}\\ \text{Rate}\end{matrix}$$

Note : If actual time taken is more than the specified standard time, the variance unfavorable and vice versa.

d) Labour Idle Time Variance : Labour Idle Time Variance arises due to abnormal situations like strike, lockout, breakdown of machinery etc. In other words, idle time occurs due to the difference between the time for which workers are paid and that which they actually expend upon production. It is calculated as follows :

Idle Time Variance = Idle Hours x Standard Rate

e) Labour Mix Variance : It is otherwise known as Gang Composition Variance. This variance arises due to the differences between the actual gang composition than the standard gang composition. Labour Mix Variance is calculated in the same way of Materials Mix Variance. This variance is calculated in two ways :

i) When Standard Labour Mix is equal to Actual Labour Mix.

ii) When Standard Labour mix is different from Actual Labour Mix.

i) When Standard and actual times of the labour mix are same: The formula for its computation may be as follows :

$$\text{Labour Mix Varience} = \left(\begin{matrix}\text{Standard Cost of}\\ \text{Standard Labour Mix}\end{matrix} - \begin{matrix}\text{Standard Cost of}\\ \text{Actual Labour Mix}\end{matrix} \right)$$

ii) When Standard and actual times of the labour mix are different : Changes in the composition of a gang may arise due to shortage of a particular grade of labour. It may be calculated as follows :

Labour Mix Variance =

$$\text{Revised Standard Time} = \frac{\text{Total Actual Time}}{\text{Total Standard Time}} \times \text{Actual Time}$$

f) Labour Yield Variance : This variance is calculated in the same way as Material Yield Variance. Labour Yield Variance arises due to the variation in labour cost on account of increase or decrease in yield or output as compared to relative standard. The formula for this purpose is as follows:

$$\text{Labour Yield Variance} = \frac{\text{Standard Labour}}{\text{Cost per unit of Output}} \times \left(\begin{matrix}\text{Standard Output} \\ \text{for Actual Time}\end{matrix} - \begin{matrix}\text{Actual} \\ \text{Output}\end{matrix}\right)$$

Note : If actual output is more than standard output time, the variance is favorable and vice versa.

Verification : Labour Cost Variance = Labour Rate Variance + Labour Efficiency Variance.



Exercise : 2

From the following particulars, calculate labour Variance :

Standard hours = 200

Standard rate for actual production = Re. 1 per hour

Actual hour = 190

Actual Rate = Rs. 1.25 per hour

Solution : 2

1) Labour Cost Variance $= \left(\begin{matrix}\text{Standard} \\ \text{Hours}\end{matrix} \times \begin{matrix}\text{Standard} \\ \text{Rate}\end{matrix}\right) - (\text{Actual hours} \times \text{Actual Rate})$

= (SH X SR) — (AH X AR)

= (200 X Re. 1)—(190 x Rs. 1.25)

= Rs. 200—Rs. 237.50 = Rs. 37.50 (A)

2) Labour Rate Variance $= \left(\begin{matrix}\text{Standard} \\ \text{Rate}\end{matrix} - \begin{matrix}\text{Actual} \\ \text{Rate}\end{matrix}\right) \times \text{Actual hours}$

= (Re. 1 — Rs.1.25) x 190

= Rs. 0.25 x 190 = Rs. 47.50 (A)

3)Labour Efficiency Variance $= \left(\begin{matrix}\text{Standard} \\ \text{Hours}\end{matrix} - \begin{matrix}\text{Actual} \\ \text{Hours}\end{matrix}\right) \times \text{Standard Rate}$

= (200 — 190) x Re. 1

= 10 x Re. 1 = Rs. 10 (F)

Verification :

Labour Cost Variance = Labour Rate Variance + Labour Efficiency Variance

Rs. 37.50 (A) = Rs. 47.50 (A) + Rs. 10 (F)

Rs. 37.50 (A) = Rs. 37.50 (A)

10.5.3 Overhead Variances

Overhead may be defined as the aggregate of indirect material cost, indirect labour cost and indirect expenses. Overhead Variances may arise due to the difference between standard cost of overhead for actual production and the actual overhead cost incurred. The Overhead Cost Variance may be calculated as follows :

$$\text{Overhead Cost Variance} = \left(\begin{matrix}\text{Standard Overhead}\\ \text{Rate Per Unit}\end{matrix} - \begin{matrix}\text{Actual Overhead}\\ \text{Cost}\end{matrix}\right) \times \text{Actual Output}$$

(or)

$$= \left(\begin{matrix}\text{Standard Hours}\\ \text{for Actual Output}\end{matrix} \times \begin{matrix}\text{Standard Overhead}\\ \text{Rate per Hour}\end{matrix}\right) - \begin{matrix}\text{Actual}\\ \text{Overhead Cost}\end{matrix}$$

Essential of Certain Terms : For the purpose of measuring various Overhead Variances, it is essential to know certain technical terms related to overheads which are given below :

a) Standard Overhead Rater per unit $= \dfrac{\text{Budgeted Overhead}}{\text{Budgeted Output}}$

b) Standard Overhead Rater per unit $= \dfrac{\text{Budgeted Overhead}}{\text{Budgeted Hours}}$

c) Standard Overhead for Actual Time $= \dfrac{\text{Budgeted Output}}{\text{Budgeted Hours}} \times \text{Actual Hours}$

d) Standard Hours for Actual Time $= \dfrac{\text{Budgeted Hours}}{\text{Budgeted Output}} \times \text{Actual Output}$

e) When Output is measured in Standard Hours

$$\text{Recorded Overheads} = \begin{matrix}\text{Standard Rate}\\ \text{Per Hour}\end{matrix} \times \begin{matrix}\text{Standard Hours of}\\ \text{Actual Output}\end{matrix}$$

When Output is measured in Units :

$$\text{Absorbed Overheads} = \begin{matrix}\text{Standard Rate}\\ \text{Per Unit}\end{matrix} \times \begin{matrix}\text{Budgeted Output}\\ \text{In Units}\end{matrix}$$

$$\text{f) Budgeted Overheads} = \begin{matrix}\text{Standard Rate}\\ \text{Per Unit}\end{matrix} \times \begin{matrix}\text{Budgeted Output}\\ \text{In Units}\end{matrix}$$

(or)

Standard Rate Per Hour x Budgeted Output

g) Actual Overheads = Actual Rate Per unit x Actual Output in units

(or)

Actual Rate Per Hour Actual Hours

h) Standard Overheads = Standard Rate Per Unit x Standard Output for Actual Time

(or)

Standard Rate Per Unit x Actual Hours

Note : The term Budgeted Overheads and Standard Overheads are not used in the same sense. It is assumed that the term Budgeted and Standard are used interchangeably. In other words, Budgeted Overheads are used for budgeted time or budgeted output and standard overheads are used for actual time or budgeted output in actual time.

10.5.4 Classification of Overhead Variance

Overhead variances can be classified as :

A. Variable Overhead Variances :

a) Variable Overhead Cost Variance

b) Variable Overhead Expenditure Variance

c) Variable Overhead Efficiency Variance

B. Fixed Overhead Variance :

a) Fixed Overhead Cost Variance

b) Fixed Overhead Expenditure Variance

c) Fixed Overhead Volume Variance

d) Fixed Overhead Capacity Variance

e) Fixed Overhead Efficiency Variance

f) Fixed Overhead Calendar Variance

A. Variable Overhead Variances :

Now, we are going to discuss the above classification in detail.

a. Variable Overhead Cost Variance : This is the difference between standard variable overhead for actual production and the actual variable overhead incurred. The formula is as follows:

$$\text{Variable Overhead Cost Variance} = \left(\begin{array}{c}\text{Standard Variable Overhead} \\ \text{For Actual Output}\end{array} - \begin{array}{c}\text{Actual Variable} \\ \text{Overheads}\end{array}\right)$$

b. Variable Overhead Expenditure Variance : It is the difference between standard variable overhead allowed for actual hours worked and the actual variable overhead incurred. This variable may be calculated as follows :

$$= \begin{array}{c}\text{Standard Variable Overhead} \\ \text{Rate Per hour}\end{array} - \begin{array}{c}\text{Actual Variable} \\ \text{Overheads Rate} \\ \text{per hour}\end{array} \times \begin{array}{c}\text{Actual} \\ \text{Time}\end{array}$$

(or)

$$= \begin{array}{c}\text{Standard Variable} \\ \text{Overheads}\end{array} - \begin{array}{c}\text{Actual Variable} \\ \text{Overheads}\end{array}$$

c. Variable Overhead Efficiency Variance : This variance arises due to the difference between variable overhead recovered from actual output produced and the standard variable overhead for actual hours worked. The formula is a follows :

Verification :

$$\begin{array}{c}\text{Variable Overhead} \\ \text{Cost Variance}\end{array} = \begin{array}{c}\text{Variable Overhead} \\ \text{Expenditure Variance}\end{array} + \begin{array}{c}\text{Variable Efficiency} \\ \text{Variance}\end{array}$$



Exercise : 3

From the following particulars, compute the Variable Overhead Variances:

	Standard	Actual
Output in Units	2,500 units	2,000 units
Labour Hours	5,000	6,000
Variable Overheads	Rs. 1,000	Rs. 1,500

Solution : 3

$$\text{Standard Variable Overhead rate per hour} = \frac{\text{Budgeted Variable Overhead}}{\text{Budgeted Hours}}$$

$$= \frac{1000}{5000} = 0.20 \text{ per hour}$$

$$\text{Standard Variable Overhead Rate per Unit of output} = \frac{\text{Budgeted Variable Overhead}}{\text{Budgeted Output}}$$

$$= \frac{1000}{2500} = 0.40 \text{ per unit}$$

Calculation of Variable Overhead Variances :

1) Variable Overhead Cost Variance = Actual Fixed Overheads – Standard Fixed Overheads for Actual Production

= 1,500 — (2,000 x 0.40)

= Rs. 1,500 — Rs. 800 = Rs. 700 (A)

2) Variable Overhead Expenditure Variance = Actual Variable Overheads — Standard Variable Overhead for Actual Hours Worked

= 1,500 — (6,000 x 0.20)

= Rs. 1,500 — Rs. 1200 = Rs. 300 (A)

3) Variable Overhead Expenditure Variance = Standard Variable Overhead for Actual Hours — Standard Variable Overhead for Actual Output

= (Rs. 6,000 x 0.20) - (2,000 x 0.40)

= Rs. 1,200 — Rs. 800 = Rs. 400 (A)

Verification :

Variable Overhead Cost Variance = Variable Overhead Expenditure Variance + Variable Overhead Efficiency Variance

Rs. 700 (A) = Rs. 300 (A) + Rs. 400 (A)

Rs. 700 (A) = Rs. 700 (A)

B. Fixed Overhead Variance

(a) Fixed Overhead Cost Variance : It is that portion of overhead cost variance which is due to over absorption or under absorption of overhead for the actual production. In other words, the variance is the difference between the standard fixed overheads allowed for the actual production and the actual fixed overheads incurred. The variance can be calculated as follows :

$$\text{Fixed Overhead Cost variance} = \text{Actual Fixed Overheads} - \text{Standard Fixed Overheads for Actual Production}$$

$$= \text{Standard Fixed Overhead Rate Per Hour} - \text{Actual Fixed Overheads} \times \text{Actual Output}$$

(b) Fixed Overhead Volume Variance : This is otherwise termed as “Budget Variance.” It is the difference between the budgeted fixed overheads and the actual fixed overheads incurred during the particular period. The formula for calculation of this Variance is

(c) Fixed Overhead Volume Variance : This Variance is the difference between the budgeted fixed overheads and the standard fixed overheads recovered on the actual production. The formula is as follows :

(d) Fixed Overhead Capacity Varialce : This is that portion of volume variance which is due to working at higher or lower capacity than the budgeted capacity. In other words, fixed overhead capacity variance arising due to a particular cause, i.e. unexpected holidays, breakdown of machinery, strikes, power failure etc. This is calculated as follows :

Fixed Overhead Expenditure Variance
Fixed Overhead Volume Variance
Efficiency Variance

Fixed Overhead Volume Variance = Standard Fixed Overhead Rate Per Hour − Budgeted Fixed Overheads

or

= Standard Fixed Overhead − Budgeted Fixed Overheads

(e) Fixed Overhead Efficiency variance : It is that portion of the Volume Variance which shows the lower or higher output arising from the efficiency or inefficiency of the workers. This is an outcome of the performance of the workers and is calculated as:

(f) Fixed Overhead Calendar variance : This is part of Capacity Variance which is due to the difference between the

actual number of working days and the budgeted working days. Calendar Variance can be calculated as follows :

$$\text{Fixed Overhead Calendar Variance} = \text{Standard Rate Per Hour / Per Day} \times \text{Excess or Deficit Hours or days worked}$$

Note : If the actual days worked are more than the budgeted working days, the variance is favorable and vice versa.



CHECK YOUR PROGRESS

Q3. Fill in the blanks with appropriate words:

(i) Variance is defined as difference between standard cost and ---------- cost.

(ii) Material mix variation is calculated when weight of mix is equal to ---------- weight of mix.

(iii) Labour cost variance = Standard cost of labour ----------.

(iv) Standard overhead rater per unit= ----------.

(v) Over absorption or under absorption of overheads for the actual production is known as ---------- variance.

10.6 SALE VARIANCES

The Variances so far analysed are related to the cost of goods sold. Quantum of profit is derived from the difference between the cost and sales revenue. Cost Variances influence the amount of profit favorably or adversely depending upon the cost from materials, labour and overheads. In addition, it is essential to analysis the difference between actual sales and the targeted sales because this difference will have a direct impact on the profit and sales. Therefore, the analysis of sales variances is important to study profit variances.

Sales Variances can be calculated by Two methods :

A. Sales value method.

B. Sales Margin or Profit method.

A. Sales Value method :

The method of computing sales variance is used to denote variances

arising due to change in sales price, sales volume or the sales value. The sales variances may be classified as follows :

a) Sales Value Variance
b) Sales Price Variance
c) Sales Volume Variance
d) Sales Mix Variance
e) Sales Quantity Variance

a) Sales Value Variance : This Variance refers to the difference between budgeted sales and actual sales. It may be calculated as follows :

Sales Value Variance = Actual Value of Sales — Budgeted Value of Sales

Note : If the actual sales is more than the budgets sales, the variance will be favourable and vice versa.

b) Sales Price Variance : This is the portion of Sales Value Variance which is due to the difference between standard price of actual quantity and actual price of the actual quantity of sales. The formula is :

Sales Price variance = Actual Quantity × (Standard Price — Actual Price)

Note : If the actual price is more than standard price the variance is favourable and vice versa.

c) Sales Volume variance : It is that part of Sales value Variance which is due to the difference between the actual quantity or volume of sales and budgeted quantity or volume of sales. The variance is, calculated as.

$$\text{Sales Volume Variance} = \left(\begin{matrix}\text{Actual Quantity} \\ \text{of Sales}\end{matrix} - \begin{matrix}\text{Budget Quantity} \\ \text{of Sales}\end{matrix}\right) \times \text{Standard Price}$$

Note : If the actual quantity sold is more than the budgeted quantity or volume of sales, the variance is favourable and vice versa.

d) Sales Mix Variance : It is that portion of Sales Volume Variance which is due to the difference between the standard proportion of

Sales and the actual composition of mix of quantities sold. In other words, it is the difference of standard value of revised mix and standard value of actual mix. It is calculated as :

$$\text{Sales Mix Variance} = \begin{matrix}\text{Standard Value} \\ \text{of Actual Mix}\end{matrix} - \begin{matrix}\text{Standard Value of} \\ \text{Revised Standard Mix}\end{matrix}$$

e) Sales Quantity Variance : It is a sub variance of Sales Volume Variance. This is the difference between the revised standard quantity of sales and budgeted sales quantity. The formula for the calculation of this variance is :

$$\begin{matrix}\text{Sales Quantity} \\ \text{Variance}\end{matrix} = \left(\begin{matrix}\text{Revised Standard} \\ \text{Sales Quantity}\end{matrix} - \begin{matrix}\text{Budget Sales} \\ \text{Quantity}\end{matrix}\right) \times \text{Standard Selling Price}$$

Note : If the Revised Standard Quantity is greater than the standard quantity, the variance is favourable and vice versa.



Exercise : 4

From the following information is given about standard and actual sales. You are required to calculate Sales Variances :

	Standard Qty. Units	Sales Price	Actual Qty. Units	Sales price
X	250	2.50	250	2.50
Y	200	3	300	3.25
Z	150	3.50	200	3.75
	600		750	

Solution : 4

1) Sales Value Variance = Actual value of Sales — Standard Value of Sales

X = (250 x 2.50) — (250 x 2.50)

= Rs. 625 — Rs. 625 = Nil

Y = (300 x 3.25) — (200 x 3)

= Rs. 975 — Rs. 600 = Rs. 375 (F)

Z = (200 x 3.75) — (150 x 3.50)

= Rs. 750 — Rs. 525 = Rs. 225 (F)

Total Sales Value Variance = Rs. 375 (F) + Rs. 225 (F) = Rs. 600 (F)

2) Sales price Variance = Actual Quantity Sold + (Actual Price—Standard Price)

X = 250 (2.50 ----- 2.50) = Nil

Y = 300 (3.25 ----- 3) = Rs. 75 (F)

Z = 200 (3.75 ----- 3.50) = Rs. 50 (F)

Total Sales Price Variance = Rs. 75 (F) + Rs. 50 (F) = Rs. 125 (F)

3) Sales Value Variance = Standard price x (Actual Quantity — Standard Quantity)

X = 2.50 (250 ----- 250) = Nil

Y = 3 (300 ---- 200) = Rs. 300 (F)

Z = 3.50 (200 ---- 150) = Rs. 175 (F)

Total Sales Price Variance = Rs. 300 (F) + Rs. 175 (F) = Rs. 475 (F)

4) Sales Mix Variance : There is a difference between standard quantity and actual quantity so the standard will be revised in proportion to actual quantity of sales :

$$X = \frac{250}{600} \times 750 = 312.50$$

$$Y = \frac{200}{600} \times 750 = 250$$

$$Z = \frac{150}{600} \times 750 = 187.50$$

Sales Mix Variance = Standard Value of Actual Mix — Standard value of Revised Standard Mix

Standard Value of Actual Mix

X	=	250 x 2.50 = 625
Y	=	200 x 3 = 600
Z	=	150 x 3.50 = 525
		Rs. 1750

Standard Value of Revised Standard Mix

X	=	312.50 x 2.50 = 781.25
Y	=	250 x 3 = 750.00
Z	=	187.50 x 3.50 = 656.25
		Rs. 2187.50

Sales Mix Variance = Rs. 1750 — Rs. 2187.50 = Rs. 437.50 (A)

B. Sales Margin or Profit Method :

Under this method of variance analysis, variances may be computed to show the effect on profit. The sales variance according to this method can be classified as follows :

1) Sales Margin Value Variance
2) Sales Margin Volume or Quantity Variance
3) Sales Margin Price Variance
4) Sales Margin Mix Variance

1) Sales Margin Value Variance : This is the difference between the actual value of sales margin and budgeted value of sales margin. It is calculated as follows :

Sales Margin Value Variance = Budgeted Profit — Actual Profit

(or)

$$= \left\{\begin{matrix}\text{Budget Sales} \\ \text{Quantity}\end{matrix} \times \begin{matrix}\text{Budgeted} \\ \text{Profit per unit}\end{matrix}\right\} - \left\{\begin{matrix}\text{Actual} \\ \text{Quantity} \\ \text{Sold}\end{matrix} \times \begin{matrix}\text{Actual} \\ \text{Profit} \\ \text{Per Unit}\end{matrix}\right\}$$

Note : If the actual profit is more than budgeted profit the variance is favourable and vice versa.

2) Sales Margin Volume Variance : It is that portion of Total Sales Margin Variance which is due to the difference between budgeted and actual quantity sold. The formula is as follows :

$$\text{Sales Margin Volume Variance} = \left\{\begin{matrix}\text{Standard} \\ \text{Quantity}\end{matrix} - \begin{matrix}\text{Actual} \\ \text{Quantity}\end{matrix}\right\} \times \text{Standard profit}$$

Note : If the actual quantity is more than standard quantity, the variance is favourable and vice versa.

3) Sales Margin Price Variance : This variance is the difference between the standard price of the quantity of the sales effected and the actual price of those sales. It is calculated as follows :

Sales Margin Price Variance = Standard Profit — Actual Profit

(or)

$$= \left(\begin{matrix}\text{Budgeted profit} \\ \text{Per Unit}\end{matrix} - \begin{matrix}\text{Actual Profit} \\ \text{Per Unit}\end{matrix}\right) \times \begin{matrix}\text{Actual} \\ \text{Quantity Sold}\end{matrix}$$

Note : If the actual Profit is greater than the standard profit the variance is favourable and vice versa.

4) Sales Margin Mix Variance : This is that portion of the Sales Margin Volume or Quantity Variance which is due to the difference between that actual and budgeted quantities of each product of which the sales mixture is composed valuing the difference of quantities at standard margin. Thus, this variance arises only where more than one product is sold. It is calculated as follows :

$$\text{Sales Margin Mix Variance} = \left(\begin{matrix}\text{Revised Standard}\\ \text{Quantity}\end{matrix} - \begin{matrix}\text{Actual}\\ \text{Quantity}\end{matrix}\right) \times \begin{matrix}\text{Standard Profit}\\ \text{Per Unit}\end{matrix}$$

Note : If the actual quantity is greater than the revised standard quantity, the variance is favourable and vice versa.

Exercise : 5



From the following details, calculate Sales Margin Variances :

Product	Budgeted		Actual	
	Quantity Units	Sales Price	Quantity Units	Sales Price
Product X	300	46	400	50
Product Y	500	28	450	26

The cost per unit of product X and Y was Rs. 45 and Rs. 20 respectively.

Solution : 5

1) Total Sales Margin Value Variance :

= Actual Profit — Budgeted Profit

$$= \left\{\begin{matrix}\text{Actual}\\ \text{Quantity}\end{matrix} \times \begin{matrix}\text{Actual Profit}\\ \text{per unit}\end{matrix}\right\} - \left\{\begin{matrix}\text{Budgeted}\\ \text{Quantity}\end{matrix} \times \begin{matrix}\text{Budgeted}\\ \text{Profit per unit}\end{matrix}\right\}$$

Actual Profit Per Unit = Actual Sales Price — Actual Cost

Product X = 50 - 45 = Rs. 5

Product Y = 26 - 20 = Rs. 6

Budgeted Profit Per Unit = Budgeted Sales Price — Actual Cost

Product X = 46 - 45 = Re. 1

Product Y = 28 - 20 = Rs. 8

Actual Profit = Actual Quantity x Actual Profit Per unit

Product X 400 x Rs.5 = Rs 2,000

Product Y 450 x Rs.6 = Rs. 2,700

Actual Profit = Rs. 4,700

Budget Profit = Budgeted Quantity x Budgeted Profit Per Unit

Product X = 300 x Re. 1 = Rs. 300

Product Y = 500 x Rs. 8 = Rs. 4,000

Budgeted Profit = Rs. 4,300

Sales Margin Value Variance = Rs. 4,700 ----- Rs 4,300

= Rs. 400 (F)

2) Sales Margin Price Variance :

= (Actual Price — Standard Price) x Actual Quantity

Product X = (50 - 46) x 400

= 4 x 400 = Rs. 1600 (F)

Product Y = (26 - 28) x 450

= 2 x 450 = Rs. 900 (A)

3) Sales Margin Volume Variance :

= (Actual Quantity — Standard Quantity) x Standard Profit Per Unit

Product X = (400 – 300) x Re. 1

= 100 x Re. 1 = Rs. 100 (F)

Product Y = (450 – 500) x Rs. 8

= 50 x Rs. 8 = Rs. 400 (A)

Sales Margin Volume Variance = Rs. 100 (F) + Rs. 400 (A)

= Rs. 300 (A)

Verification :

Total Sales margin Value Variance	=	Sales Margin Price Variance
	=	Sales Margin Volume Variance
Rs. 400 (F)	=	Rs. 700 (F) + Rs. 300 (A)
Rs. 400 (F)	=	Rs. 400 (F)



CHECK YOUR PROGRESS

Q4. What is sales variance?

.....

.....

.....

Q5. What are the methods to calculate sales variance?

.....

.....

.....



10.7 LET US SUM UP

In this unit we have discussed the following:

- An important part of standard cost accounting is a variance analysis which breaks down the variation between actual cost and standard costs into various components
- Standard cost is the Pre-determined Cost based on technical estimate for materials, labour and overhead for a selected period of time and for a prescribed set of working conditions."
- Standard costing is useful in formulating production planning and price policies. It guides as a measuring rod for determination of variances.
- The different types of standards are:
  a) Ideal Standard
  b) Basic Standard
  c) Current Standard
  d) Expected Standard

e) Normal Standard

- The term "Variances" may be defined as the difference between Standard cost and actual cost for each element of cost incurred during a particular period.
- Variances may be broadly classified into two categories (A) Cost Variance and (B) Sales Variance.
- The total cost Variance Comprises the following :
  I. Direct Material Cost Variance (DMCV)
  II. Direct Labour Cost Variance (DLCV)
  III. Overhead Cost Variance (OCV)
- Sales Variances can be calculated by Two methods :
  I. Sales value method.
  II. Sales Margin or Profit method.



10.8 FURTHER READING

1. Jain P K & Khan MY(2017); *Management Accounting*,7edition Mcgraw Higher Ed, India
2. Narang K.L. & Jain S.P.(2015), *Cost Accounting*, Kalyani Publications
3. Narang K.L. & Jain S.P(2015), *Cost And Management Accounting,*
4. Lal J & Srivastava S (2013), *Cost & Management Accounting*; Mcgraw Higher Ed
5. Banerjee(2013);*Cost Accounting: Theory and Practice*; PHI Learning Pvt Ltd; New Delhi

10.9 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q1. Standard cost as defined by the Institute of Cost and Management Accountant, London "is the Pre-determined Cost based on technical estimate for materials, labour and overhead for a selected period of time and for a prescribed set of working conditions."

Ans to Q2. Advantages: 1) It guides the management to evaluate the production performance.

2) It helps the management in fixing standards.

Limitation:

1) Standard costing is expensive and a small concern may not meet the cost.

2) Due to lack of technical aspect, it is difficult to establish standards.

Ans to Q3.

(i) Actual, (ii) Standard, (iii) Actual cost of labour, (iv) Budgeted overheads/ Budgeted output, (v) Fixed overhead.

Ans to Q4. Sales variance is the analysis of the difference between actual sales and the targeted sales.

Ans to Q5. I. Sales value method.

II. Sales Margin or Profit method.



10.10 POSSIBLE QUESTIONS

Q1. Define Standard Costing.

Q2. What do you understand by Standard Cost and Standard Costing?

Q3. What are the differences between Standard Costing and Estimated Costing?

Q4. Briefly explain and compare and contrast between Standard Costing and budgetary Control.

Q5. What are the advantages of Standard Costing?

Q6. Explain the different types of Standards.

Q7. What do you understand by variance Analysis?

Q8. Explain the different types of Material Cost Variance.

Q9. What are the important uses of Variance Analysis?

Q10. Explain the different types of Material Cost Variance.

Q11. What are the important uses of Variance Analysis?

*** ***** ***

UNIT 11: MARGINAL COSTING & COST VOLUME PROFIT ANALYSIS

UNIT STRUCTURE

11.1 Learning objectives

11.2 Introduction

11.3 Meaning and Definition of Marginal Costing

- 11.3.1 Features of Marginal Costing
- 11.3.2 Advantages of Marginal Costing
- 11.3.3 Limitations of Marginal Costing

11.4 Absorption Costing

- 11.4.1 Differences between absorption costing and marginal costing

11.5 Differential Costing

- 11.5.1 Difference between differential costing and marginal costing

11.6 Cost Volume profit Analysis

- 11.6.1 Objectives of cost volume profit analysis
- 11.6.2 Marginal cost equation
- 11.6.3 Break Even Analysis
- 11.6.4 Profit Volume Ratio (P/V Ratio)
- 11.6.5 Margin of Safety
- 11.6.6 Break Even Chart
- 11.6.7 Cash Break Even Point
- 11.6.8 Angle of Incidence

11.7 Let Us Sum Up

11.8 Further Reading

11.9 Answers to Check Your Progress

11.10 Model Questions

11.1 LEARNING OBJECTIVES

After going through this unit, you will be able to -

- explain the meaning and definition of Marginal Costing
- describe the concept of Cost Volume Profit Analysis
- discuss the various concepts like Absorption Costing, differential costing, Marginal Costing equation, Break even analysis, P/V Ratio and angle of Incidence.

11.2 INTRODUCTION

In this unit, we are going to discuss the concept of marginal costing and cost volume profit analysis.

Marginal Cost may be defined as the “cost of producing one additional unit of product”. We will discuss about it in detail in the following sections.

Again, we will get an idea about cost volume profit analysis.

Cost-volume-profit analysis employs the same basic assumptions as in breakeven analysis.

And, at the end of this unit, we will come to know about Break Even Analysis.

11.3 MEANING AND DEFINITION OF MARGINAL COSTING

The term Marginal Cost refers to the amount at any given volume of output by which the aggregate costs are charged if the volume of output is changed by one unit. Accordingly, it means that the added or additional cost of an extra unit of output.

Marginal cost may also be defined as the “cost of producing one additional unit of product.” Thus the concept marginal cost indicates wherever there is a change in the volume of output, certainly there will be some change in the total cost. It is concerned with the changes in variable costs. Fixed cost is treated as a period cost and is transferred to Profit and Loss Account.

Definition of Marginal Costing : Marginal Costing may be defined as "the ascertainment by differentiating between fixed cost and variable cost, of marginal cost and of the effect on profit of changes in volume or type of output." With marginal costing procedure costs are separated into fixed and variable cost.

According to J. Batty, marginal costing is "a technique of cost accounting pays special attention to the behavior of costs with changes in the volume of output." This definition lays emphasis on the ascertainment of marginal costs and also the effect of changes in volume or type of output on the company's profit.

11.3.1 Features of marginal costing

1) All elements of costs are classified into fixed and variable costs.
2) Marginal costing is a technique of cost control and decision making.
3) Variable costs are charged as the cost of production.
4) Valuation of stock of work in progress and finished goods is done on the basis of variable costs.
5) Profit is calculated by deducting the fixed cost from the contribution, i.e., excess of selling price over marginal cost of sales.
6) Profitability of various levels of activity is determined by cost volume profit analysis.

11.3.2 Advantages of Marginal Costing

The following are the important decision making areas where marginal costing technique is used :

1) Pricing decisions in special circumstances :
   a) Pricing in periods of recession;
   b) Use of differential selling prices.
2) Acceptance of offer and submission of tenders.
3) Make or buy decisions.

4) Shutdown or continue decision or alternative use of production facilities.
5) Retain or replace a machine.
6) Decisions as to whether to sell in the export market or in the home market.
7) Change Vs status quo.
8) Whether to expand or contract.
9) Product mix decisions like for example :
   a) Selection of optimal product mix;
   b) Product substitution
   c) Product discontinuance.
10) Break-Even Analysis.

11.3.3 Limitations of Marginal Costing

The following are some of the limitations of Marginal Costing.

1) It segregation of all costs into fixed and variable costs, is difficult.
2) Marginal Costing technique cannot be suitable for all type of industries. For example, it is difficult to apply in ship-building contract industries etc.
3) The elimination of fixed overhead, leads to difficulty in determination of selling price.
4) It assumes that the fixed cost are controllable, but in the long run all costs are variable.
5) Marginal Costing does not provide any standard for the evaluation of performance which is provided by standard costing and budgetary control.
6) With the development of advanced technology fixed expenses are proportionately increased. Therefore, the exclusion of fixed costs is less effective.
7) Under marginal costing elimination of fixed costs results in the under valuation of stock of work in progress and finished goods. It will reflect in true profit.

8) Marginal Costing focuses its attention on sales aspect. Accordingly, contribution and profits are determined on the basis of sales volume. It does not consider other functional aspects.
9) Under Marginal Costing semi variable and semi fixed costs cannot be segregated accurately.

11.4 ABSORPTION COSTING

Absorption costing is also termed as Full Costing or Total Costing or Conventional Costing. It is a technique of cost ascertainment. Under this method both fixed and variable costs are charged to product or process or operation. Accordingly, the cost of the product is determined after considering both fixed and variable costs.

11.4.1 Difference between Absorption Costing and Marginal Costing

The following are the important differences between Absorption Costing and Marginal Costing:

1) Under Absorption Costing all fixed and variable costs are recovered from production while under marginal Costing only variable costs are charged to production.
2) Under absorption Costing valuation of stock of work in progress and finished goods is done on the basis of total costs of both fixed cost and variable cost. While in Marginal Costing valuation of stock of work in progress and finished goods at total variable cost only.
3) Absorption Costing focuses its attention on long-term decision making while under Marginal Costing provides guidance for short-term decision making.
4) Absorption Costing lays emphasis on production, operation or process while Marginal Costing focuses on selling and pricing aspects.

11.5 DIFFERENTIAL COSTING

Differential Costing is also termed as Relevant Costing or Incremental Analysis. Differential Costing is a technique useful for cost control and decision making.

According to ICMA London differential costing "is a technique based on preparation of adhoc information in which only cost and income differences between two alternatives/ courses of actions are taken into consideration."

11.5.1 Difference between Marginal Costing and Differential Costing :

The following are the differences between Marginal Costing and Differential Costing:

1) Differential Costing can be made in the case of both absorption costing as well as Marginal Costing.
2) While Marginal Costing excludes the entire fixed cost, some of the fixed costs may be taken into account as being relevant for the purpose of Differential Cost Analysis.
3) Marginal Costing may be embodied in the accounting system whereas Differential Cost are worked separately as analysis statements.
4) In Marginal Costing, margin of contribution and contribution ratios are the main yardstick for the performance evaluation and for decision making. In Differential Cost Analysis, differential costs are compared with the incremental or detrimental revenues as the case may be.



CHECK YOUR PROGRESS

Q1. Define marginal Costing.

.....

.....

.....

.....

Q2. Write two limitations of marginal Costing.

.....

.....

.....

.....

11.6 COST VOLUME PROFIT ANALYSIS

Cost Volume Profit Analysis (C V P) is a systematic method of examining the relationship between changes in the volume of output and changes in total sales revenue, expenses (costs) and net profit. In other words, it is the analysis of the relationship existing amongst costs, sales revenues, output and the resultant profit.

To know the cost, volume and profit relationship, a study of the following is essential :

1) Marginal Cost Formula
2) Break-Even Analysis
3) Profit Volume Ratio (or) P/V Ratio
4) Profit Graph
5) Key Factors and
6) Sales Mix

11.6.1 Objectives of Cost Volume Profit Analysis

The following are the important objectives of cost volume profit analysis:

1) Cost volume is a powerful tool for decision making.
2) It makes use of the principles of Marginal Costing.
3) It enables the management to establish what will happen to the financial results if a specified level of activity of volume fluctuates.
4) It helps in the determination of break-even point and the level of output required to earn a desired profit.
5) The P/V ratio serves as a measure of efficiency of each product factory sales area etc. and thus helps the management to choose a most profitable line of business.

6) It helps us to forecast the level of sales required to maintain a given amount of profit at different levels of prices.

11.6.2 Marginal Cost Equation

The Following are the main important equations of Marginal Cost:

Sales = Variable Cost + Fixed Expenses ± Profit / Loss

(or)

Sales — Variable Cost = Fixed Cost ± Profit or Loss

(or)

Sales — Variable Cost = Contribution

Contribution = Fixed Cost + Profit

The above equation brings the fact that in order to earn profit the contribution must be more than fixed expenses. To avoid any loss, the contribution must be equal to fixed cost.

Contribution : The term Contribution refers to the difference between Sales and Marginal Cost of Sales. It is also termed as "Gross Margin." Contribution enables to meet fixed costs and profit. Thus, contribution will first covered fixed cost and then the balance amount is added to Net profit. Contribution can be represented as :

Contribution = Sales — Marginal Cost

Contribution = Sales — Variable Cost

Contribution = Fixed Expenses + Profit

Contribution = Fixed Expenses = Profit

Sales — Variable Cost = Fixed Cost + Profit

C = S — V.C

C = F.C + P

S — V.C = F.C + P

C — F. C = P

Where : C = Contribution

S = Sales

F = Fixed Cost

P = Profit

V = Variable Cost



Exercise : 1

From the following information calculate the amount of profit using marginal cost technique :

Fixed cost Rs. 3,00,000

Variable cost per unit Rs. 5

Selling price per unit Rs. 10

Output level 1, 00,000 units

Solution : 1

Contribution	=	Selling Price — Marginal Cost
	=	(1,00,000 x 10) — (1,00,000 x 5)
	=	10,00,000 — 5, 00,000 = 5,00,000
Contribution	=	Fixed Cost + Profit
Rs. 5,00,000	=	3, 00,000 + Profit
Profit	=	Contribution — Fixed Cost
Profit	=	Rs. 5,00,000 — Rs. 3,00,000
	=	Rs. 2,00,000

11.6.3 Break-Even Analysis :

Break-Even Analysis is also called Cost Volume Profit Analysis. The term Break-Even Analysis is used to measure inter-relationship between costs, volume and profit at various level of activity. A concern is said to beat break even when its total sales are equal to its total costs. It is a point of no profits no loss. This is a point where contribution is equal to fixed cost. In other words, the break-even point where income is equal to expenditure (or) total sales equal to total cost.

The break even point can be calculated by the following formula:

1) Break-Even Point in Units = $\dfrac{\text{Total Fixed Cost}}{\text{Contribution per unit}}$

$$\text{(or) B E P (in units)} = \frac{F}{C}$$

$$\text{2) Break-Even Point in Units} = \frac{\text{Total Fixed Cost}}{\text{Selling Price Per unit} - \text{Variable Cost Per Unit}}$$

Break-Even Point in Sales Volume

$$\text{1) } \textit{Break - Even Sales} = \frac{\text{Fixed Cost x Sales}}{\text{Sales} - \text{Variable Cost}}$$

or

$$= \frac{F \times S}{S - V}$$

$$\text{2) } \textit{Break - Even Sales} = \frac{\text{Fixed Cost}}{1 - \frac{\text{Variable Cost}}{\text{Sales}}}$$

or

$$= \frac{F}{1 - \frac{V}{S}}$$

$$\text{3) Break-Even Sales} = \frac{\text{Fixed Cost}}{\text{P/V Ratio}}$$

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



Exercise : 2

From the following particulars find out break-even point:

Fixed Expenses Rs. 1,00,000

Selling price Per Unit Rs. 20

Variable cost per unit Rs. 15

Solution : 2

$$\text{Break-Even Point in Units} = \frac{\text{Fixed Cost}}{\text{Contribution per unit}}$$

Contribution per unit = Selling Price per unit — Variable Cost per unit

= Rs. 20 ---- Rs. 15 = Rs. 5

$$\text{B E P (in units)} = \frac{\text{Rs. 1,00,000}}{5}$$

= 20,000 units

B E P in Sales = 20,000 x Rs. 20 = Rs. 4,00,000

11.6.4 Profit Volume Ratio (P/V Ratio)

Profit Volume Ratio is also called as Contribution Sales Ratio (or) Marginal Income Ratio (or) Variable Profit Ratio. It is used to measure the relationship of contribution, the relative profitability of different products, processes or departments.

The following formula for calculating the P/V ratio is given below :

1) $\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}}$ (or) $\frac{\text{C}}{\text{S}} \times 100$

2) $\text{P/V Ratio} = \frac{\text{Sales—Variable Cost}}{\text{Sales}} \times 100$ (or) $\frac{\text{S — V}}{\text{S}} \times 100$

$$3)\quad \text{P/V Ratio} = \frac{\text{Fixed Cost + Profit}}{\text{Sales}} \times 100 \text{ (or)} \frac{\text{F + P}}{\text{S}} \times 100$$

When we find out the P/V Ratio, Break-Even Point can be calculated by the following formula :

$$b)\ \text{B E P (Sales volume)} = \frac{\text{Fixed Cost}}{\text{P / V Ratio}}$$

b) Fixed Cost = B E P x P / V Ratio

c) Sales required in units to maintain a desired profit :

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

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

$$\text{(or)} \quad = \frac{\text{Required Contribution}}{\text{New Contribution per unit}}$$

d) Contribution = Sales x P/V Ratio

e) Variable Cost = Sales (1 - P / V Ratio)



Exercise : 3

From the following information calculate :

1) P/V Ratio

2) Break-Even Point

3) If the selling price is reduced to Rs. 80, calculate New Break-Even Point :

Total Sales	Rs. 5,00,000
Selling price per unit	Rs. 100
Variable cost per unit	Rs. 60
Fixed cost	Rs. 1,20,000

Solution : 3

$$\text{1) P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100$$

Contribution = Sales ---- Variable Cost

Total Sales = Rs. 5,00,000

Selling price per unit = Rs. 100

$$\text{Sales in units} = \frac{5,00,000}{100} = 5000 \text{ units}$$

Contribution = Rs. 5,00,000 — (5000 x 60)

= Rs. 5,00,000 — Rs. 3,00,000 = Rs. 2,00,000

$$\text{P/V Ratio} = \frac{\text{Rs. } 2,00,000}{\text{Rs. } 5,00,000} \times 100 = 40\%$$

$$\text{2) Break-Even Point in Sales} = \frac{\text{Fixed Cost}}{\text{P/V Ratio}}$$

$$= \frac{\text{Rs. } 1,20,000}{40\%} = \frac{1,20,000}{\frac{40}{100}}$$

$$= \frac{1,20,000}{40} \times 100$$

= Rs. 3,00,000

3) If the Selling price is reduced to Rs. 80

$$\text{Sales} = \frac{5,00,000}{100} \times 80$$

= Rs. 4,00,000

$$\text{Break-Even Point (in units)} = \frac{\text{Fixed Cost}}{\text{Contribution per unit}}$$

or

$$= \frac{\text{Fixed Cost}}{\text{Salling Price — Variable Cost}}$$

$$= \frac{\text{Rs. } 1,20,000}{80 - 50} = \frac{1,20,000}{30} = 4,000 \text{ units}$$

Break Even Point is Sales= 4,000 units x Rs. 80

= Rs. 3,20,000

Exercise : 4



Sales Rs. 2,00,000

Profit Rs. 20,000

Variable Cost 60%

You are required to calculate :

1) P/V Ratio

2) Fixed Cost

3) Sales volume to earn a profit of Rs. 50,000

Solution : 4

Sales = Rs. 2,00,000

Variable Cost = 60%

$$\text{Variable Cost} = \frac{60}{100} \times 2,00,000$$

= Rs. 1,20,000

$$\text{1) P/V Ratio} = \frac{\text{Sales — Variable Cost}}{\text{Sales}} \times 100$$

$$= \frac{2,00,000 - 1,20,000}{2,00,000} \times 100$$

$$= \frac{80,000}{2,00,000} \times 100 = 40\%$$

2) Contribution = Fixed Cost + Profit

or

Contribution = Sales — Variable Cost

= Rs. 2,00,000 — Rs. 1,20,000 = Rs. 80,000

Contribution = Fixed Cost + Profit

80,000 = Fixed Cost — Rs. 20,000

Fixed Cost = Rs. 80,000 — Rs. 20,000 = Rs. 60,000

3) Sales volume to earn a profit of Rs. 50,000

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

$$= \frac{\text{Rs. 60,000 + Rs. 50,000}}{40\%}$$

$$= \frac{\text{Rs. 1,10,000}}{40} \times 100$$

= Rs. 2,75,000

11.6.5 Margin of Safety

The term Margin of Safety refers to the excess of actual Sales over the break-even sales. It is known as the Margin of Safety. Margin of Safety can also be expressed as a percentage of Sales. Margin of safety can be improved by :

a) Increasing the selling price

b) Reducing the variable cost

c) Selecting a product mix of larger P/V ratio items

d) Reducing fixed costs

e) Increasing the output

Margin of Safety can be calculated by the following formula:

1) Margin of Safety = Total Sales — Break-Even Sales

2) $$\text{Margin of Safety} = \frac{\text{Profit}}{\text{P / V Ratio}}$$

3) $$\text{Margin of Safety} = \frac{\text{Profit}}{\text{Contribution}} \times \text{Sales}$$

4) Profit = Margin of Safety x P / V ratio

5) Margin of Safety expressed as percentage :

$$\text{Margin of Safety} = \frac{\text{Margin of Safety}}{\text{Total Sales}} \times 100$$

(or)

$$= \frac{\text{Actual Sales — Break-Even-Sales}}{\text{Total Sales}} \times 100$$



Exercise : 5

From the following particulars, calculate Margin of Safety :

Fixed Cost	Rs.	1,00,000
Variable Cost	Rs.	1,50,000
Total Sales	Rs.	3,00,000

Solution : 5

1) $$\text{Margin of Safety} = \frac{\text{Profit}}{\text{P / V Ratio}}$$

= Actual Sales — Break-Even-Sales

2) $$\text{P /V Ratio} = \frac{\text{Sales — Variable Cost}}{\text{Sales}} \times 100$$

$$= \frac{3,00,000 - 1,50,000}{3,00,000} \times 100 = \frac{1,50,000}{3,00,000} \times 100$$

= 50%

P / V Ratio = 50%

$$\text{Break-Even-Sales} = \frac{\text{Fixed Cost}}{\text{P/ V Ratio}} = \frac{\text{Rs.1,00,000}}{50\%}$$

$$= \frac{1,00,000}{50} \times 100 = \text{Rs. } 2,00,000$$

Margin of Safety = Actual Sales — Break-Even Sales

= Rs. 3,00,000 — Rs. 2,00,000 = Rs. 1,00,000

Alternatively :

Contribution = Sales — Variable Cost

= Rs. 3,00,000 — 1, 50,000 = Rs. 1,50,000

Profit = Contribution — Fixed Cost

= Rs. 1, 50,000 — 1,00,000 = Rs. 50,000

$$\text{Margin of Safety} = \frac{\text{Profit}}{\text{P/V Ratio}} = \frac{50,000}{50\%}$$

$$= \frac{50,000}{50} \times 100 = \text{Rs. } 1,00,000$$

Margin of Safety expressed in percentage of Sales :

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

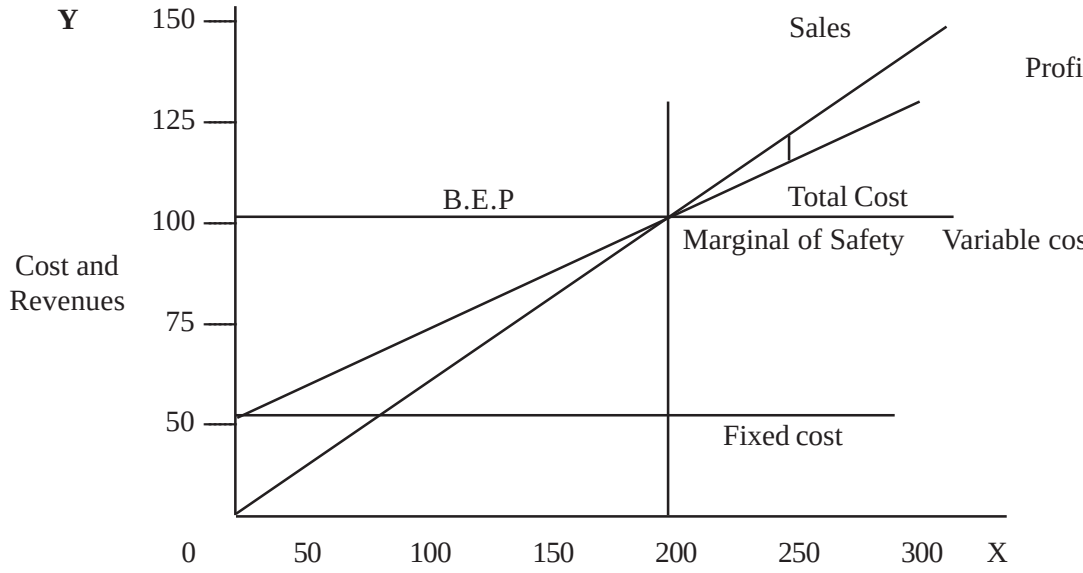
$$= \frac{\text{Rs. } 1,00,000}{\text{Rs. } 3,00,000} \times 100$$

= 33.33 %

11.6.6 Break-Even Chart

A break-even chart is a graphical presentation which indicates the relationship between cost, sales and profit. The chart depicts fixed costs, variable cost, break-even point, profit or loss, margin of safety and the angle of incidence. Such a chart not only indicates break-even point but also shows the estimated cost and estimated profit or loss at various level of activity. Break-even point is an important stage in the break-even chart which represents no profit no loss.

The following Break-Even Chart can explain more above the inter relationship between the costs, volume and profit :



From the above break-even chart, we can understand the following points :

1) Cost and sales revenue are represented on vertical axis, i.e., Y-axis.
2) Volume of production or output in units are plotted on horizontal axis, i.e. X-axis.
3) Fixed cost line is drawn parallel to X-axis.
4) Variable costs are drawn above the fixed cost line at different level of activity. The variable cost line is joined to fixed cost line at zero level of activity.

5) The sales line is plotted from the zero level, it represents sales revenue.
6) The point of intersection of total cost line and sales line is called the break even point which means no profit no loss.
7) The margin of safety is the distance between the break-even point and total output produced.
8) The area below the break-even point represents the loss area as the total sales and less than the total cost.
9) The area above the break-even point represents profit area as the total sales more than the cost.
10) The sales line intersects the total cost line represents the angle of incidence. The large angle of incidence indicates a high rate of profit and vice versa.

11.6.7 Cash Break-Even Point

In cash break-even chart, only cash fixed costs are considered. Non-cash items like depreciation etc. are excluded from the fixed costs for computation of break-even point. Cash Break-Even Chart depicts the level of output or sales revenue will be equal to total cash outflow. It is computed as under :

$$\text{Cash Break-Even Point} = \frac{\text{Cash Fixed Costs}}{\text{Contribution per unit}}$$



Exercise : 6

From the following information calculate the Cash Break-Even Point :

Selling price per unit	Rs.	60
Variable cost per unit	Rs.	40
Fixed cost	Rs.	2,00,000
Depreciation included in fixed cost	Rs.	50,00

Solution : 5

Cash Fixed Cost = Rs. 2,00,000 — Rs. 50,000 = Rs. 1,50,000

Contribution / Unit = 60 — 40 = Rs. 20 / unit

$$\text{Cash Break Even point in units} = \frac{\text{Cash Fixed Cost}}{\text{Contribution per unit}}$$

$$= \frac{1,50,000}{20} = 7,500 \text{ units}$$

Advantage of Break-Even Chart

1) It enables to determine the profit or loss at different levels of activities.
2) It is useful to measure the relationship between cost volume and profit.
3) It helps to determine the break-even units i.e. output and sales volume.
4) It helps to measure the profitability of various products.
5) It facilitates most profitable product mix to be adopted.
6) It assists future planning and forecasting.
7) It enables to determine total cost, fixed cost and variable cost at different levels of activity.
8) This chart is very useful for effective cost control.

Limitations of Break-Even Chart

1) It is based on number of assumptions which may not hold good.
2) Break-even charts are rarely of value in a multi-product situation.
3) A break-even chart does not take into consideration semi variable cost, valuation of opening stock and closing stock.
4) Determination of selling price is based on many factors which will affect the constant selling price.
5) Capital employed, Government policy, Market environment etc. are the important aspects for managerial decisions. These aspects are not considered in break-even chart.

11.6.8 Angle of Incidence

The angle formed by the sales line and the total cost line at the break-even point is known as Angle of Incidence. The angle of incidence is used to measure the profit earning capacity of a firm. A large angle of incidence indicates a high rate of profit and on the other hand a small angle of incidence means that a low rate of profit.

Relationship between Angle of incidence, Break-Even Sales and Margin of Safety Sales :

1) When the Break-even sales are very low, with large angle of incidence, it indicates that the firm is enjoying business stability and in that case margin of safety sales will also be high.
2) When the break-even sales are low, but not very low with moderate angle of incidence, in that case though the business is stable, the profit earning rate is not very high as in the earlier case.
3) Contrary to the above when the break-even sales are high, the angle of incidence will be narrow with much lower margin of safety sales.



CHECK YOUR PROGRESS

Q3. State true or false for the following statements:

(i) Cost volume analysis makes use of the principles of Marginal Costing.

(ii) Sales + Variable Cost = Contribution

(iii) Break-Even Analysis is also called Cost Volume Profit Analysis.

(iv) Cash Break-Even Point = $\frac{\text{Contribution per unit}}{\text{Cash Fixed Costs}}$



11.7 LET US SUM UP

In this unit we have discussed the Following concepts:

- Marginal costing is the cost of producing one additional unit of product. It is a technique of cost control and decision making.
- Absorption costing is a technique of cost ascertainment.
- Differential costing "is a technique based on preparation of ad hoc information in which only cost and income differences between two alternatives/ courses of actions are taken into consideration."
- Cost Volume Profit Analysis (C V P) is the analysis of the relationship existing amongst costs, sales revenues, output and the resultant profit.
- The Contribution refers to the difference between Sales and Marginal Cost of Sales.
- Break-Even Analysis is also called Cost Volume Profit Analysis. The term Break-Even Analysis is used to measure inter-relationship between costs, volume and profit at various level of activity. It is a point of no profits no loss.
- Profit Volume Ratio is also called as Contribution Sales Ratio (or) Marginal Income Ratio (or) Variable Profit Ratio. It is used to measure the relationship of contribution, the relative profitability of different products, processes or departments.
- The term Margin of Safety refers to the excess of actual sales over the break-even sales.
- The angle formed by the sales line and the total cost line at the break-even point is known as Angle of Incidence.



11.8 FURTHER READINGS

1. Jain P K & Khan MY(2017); *Management Accounting*,7edition Mcgraw Higher Ed, India

2. Narang K.L. & Jain S.P.(2015), *Cost Accounting*, Kalyani Publications
3. Narang K.L. & Jain S.P(2015), *Cost And Management Accounting,*
4. Lal J & Srivastava S (2013), *Cost & Management Accounting*; Mcgraw Higher Ed
5. Banerjee(2013);*Cost Accounting: Theory and Practice*; PHI Learning Pvt Ltd; New Delhi

11.9 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q1. Marginal Costing may be defined as "the ascertainment by differentiating between fixed cost and variable cost, of marginal cost and of the effect on profit of changes in volume or type of output."

Ans to Q2. 1) It may be very difficult to segregation of all costs into fixed and variable costs.

2) Marginal Costing technique cannot be suitable for all type of industries. For example, it is difficult to apply in ship-building contract industries etc.

Ans to Q3.

(i) True,
(ii) False,
(iii) True,
(iv) False



11.10 MODEL QUESTIONS

Q1. What do you understand by marginal Costing ?

Q2. Define Marginal Costing Briefly explain the features of marginal costing ?

Q3. What are the differences between Absorption costing and marginal Costing ?

Q4. What are the important decision making areas of Marginal costing?

Q5. Briefly explain the advantages and limitations of Marginal Costing?

Q6. What do you understand by Cost Volume Profit Analysis?

Q7. Briefly explain the objectives of cost volume profit analysis.

Q8. Explain Marginal cost equation.

Q9. What do you understand by Break-Even Analysis?

Q10. Write short notes on :

a) Profit volume ratio

b) Margin of Safety

c) Break-Even chart

d) Angle of incidence

Q11. From the following particulars, you are required to find out

(a) Contribution

(b) Break-even point in units

(c) Margin of Safety and

(d) Profit

Total Fixed cost	Rs. 4,500
Total variable cost	Rs. 7,500
Total Sales	Rs. 15,000
Units sold	5,000 units

Also calculate the volume of sales to earn profit of Rs. 6,000

[**Ans.** (a) Contribution Rs. 7,500

(b) Break-even point in units s. 3,000 units

(c) Margin of Safety Rs. 6,000

(d) Profit Rs. 3,000]

*** ***** ***

UNIT 12: BUDGETARY CONTROL

UNIT STRUCTURE

12.1 Learning objectives

12.2 Introduction

12.3 Basic Concepts Of Budget

- 12.3.1 Definition of Budget
- 12.3.2 Essentials of Budget
- 12.3.3 Comparison between Forecast and Budget
- 12.3.4 Difference between Forecast and Budget

12.4 Budgetary Control

- 12.4.1 Objectives of budgetary control
- 12.4.2 Scopes and techniques of budgetary control
- 12.4.3 Requisites for effective budgetary control
- 12.4.4 Organization of budgetary control
- 12.4.5 Advantages of budgetary control
- 12.4.6 Limitations of budgetary control

12.5 Types Of Budget

- 12.5.1 Classification on the Basis of Time
- 12.5.2 Classification on the Basis of Function
- 12.5.3 Classification on the Basis of Capacity

12.6 Let Us Sum Up

12.7 Further Reading

12.8 Answers to Check Your Progress

12.9 Model Questions

12.1 LEARNING OBJECTIVES

After going through this unit, you will be able to -

- define Budget
- analyse the concept Budgetary Control
- explain different Types of Budget

12.2 INTRODUCTION

In this unit we are going to discuss about budgetary control. Budgeting has come to be accepted as an efficient method of short-term planning and control. It is employed, no doubt, in large business houses, but even the small businesses are using it at least in some informal manner. Through the budget, a business wants to know clearly as to what it proposes to do during an accounting period or a part thereof. The technique of budgeting is an important application of Management Accounting. Probably the greatest aid to good management that has ever been devised is the use of budgets and budgetary control. It is a versatile tool and has helped the managers to cope with many problems including inflation.

12.3 BASIC CONCEPTS OF BUDGET

12.3.1 Definition of budget

The Chartered Institute of Management Accountants, England, defines a 'budget' in the following manner:

"A financial and/ or quantitative statement, prepared and approved prior to define period of time, of the policy to be persued during that period for the purpose of attaining a given objective."

According to Brown and Howard of Management Accountant " A budget is a predetermined statement of managerial policy during the given period which provides a standard for comparison with the results actually achieved."

12.3.2 Essential of a Budget

An analysis of the above said definitions reveal the following essentials of a budget :

1) It is prepared for a definite future period.
2) It is a statement prepared prior to a defined period of time.
3) The Budget is a monetary and / or quantitative statement of policy.

4) The Budget is a predetermined statement and its purpose is to attain a given objective.

A budget, therefore, is to be taken as a document which is closely related to both the managerial and accounting functions of an organization.

12.3.3 Comparison between forecast and budget

Forecast is mainly concerned with an assessment of the probable future events. Budget is a planned result that an enterprise aims to attain. Forecasting precedes preparation of a budget as it is an important part of the budgeting process. It is said that the budgetary process is more a test of forecasting skill than anything else. A budget is both a mechanism for profit planning and technique of operating cost control. In order to establish a budget it is essential to forecast various important variables like sales, selling prices, availability of materials, prices of materials, wage rates etc.

12.3.4 Difference between Forecast and Budget

Both budget and forecasts refer to the anticipated actions and events. But still there are wide differences between budget and forecasts as given below:

Forecasts	*Budgets*
1) Forecasts is mainly concerned with anticipated or probable events	1) Budget is related to planned events
2) Forecasts may cover for longer period or years	2) Budget is planned or prepared for a shorter period
3) Forecast is only a tentative estimate	3) Budget is a target fixed for a period
4) Forecast results in planning	4) Result of planning is budgeting

5) The function of forecast ends with the forecast of likely events	5) The process of budget starts where forecast end and converts it into a budget
6) Forecast usually covers a specific business function	6) Budget is prepared for the business as a whole
7) Forecasting does not act as a tool of controlling measurement.	7) Purpose of budget is not merely a planning device but also a controlling tool.

12.4 BUDGETARY CONTROL

Budgetary Control is the process of establishment of budgets relating to various activities and comparing the budgeted figures with the actual performance for arriving at deviations, if any. Accordingly, there cannot be budgetary control without budgets. Budgetary Control is a system which uses budgets as a means of planning and controlling.

According to I. C. M. A, England, Budgetary control is defined by terminology as the establishment of budget relating to the responsibilities of executives to the requirements of a policy and the continuous comparison of actual with the budgeted results, either to secure by individual actions the objectives of that policy or to provide a basis for its revision.

Brown and Howard define budgetary control as “a system of controlling costs which includes the preparation of budgets, coordinating the department and establishing responsibilities, comparing actual performance with the budgeted and acting upon results to achieve maximum profitability.”

The above definitions reveal the following essentials of budgetary control:

1) Establishment of objectives for each function and section of the organization.
2) Comparison of actual performance with budget.
3) Ascertainment of the causes for such deviations of the actual from the budgeted performance.

4) Taking suitable corrective action from different available alternatives to achieve the desired objectives.

12.4.1 Objectives of budgetary Control

Budgetary Control is planned to assist the management for policy formulation, planning controlling and co-ordinating the general objectives of budgetary control and it can be stated in the following ways:

1) Planning: A budget is a plan of action. Budgeting ensures a detailed plan of action for a business over a period of time.

2) Co-ordination: Budgetary control co-ordinates the various activities of the entity or organization and secure co-operation of all concerned towards the common goal.

3) Control : Control is necessary to ensure that plans and objectives are being achieved. Control follows planning and co-ordination. No control in performance is possible without predetermined standards. Thus, budgetary control makes control possible by continuous measures against predetermined targets. If there is any variation between the budgeted performance and the actual performance, the same is subject to analysis and corrective action.

12.4.2 Scope and Techniques of Budgetary Control

Scope of Budgetary Control

1) Budgets are prepared for different functions of business such as production, sales etc. Actual results are compared with the budgets and control is exercised.
2) Budgets have a wide range of coverage of the entire organization. Each operation or process is divided into number or elements.
3) Budgetary control is concerned with the origin of expenditure at functional levels.
4) Budget is the projection of financial accounts.

Techniques of budgetary control

1) Budgetary control is exercised by putting budgets and actuals side by side. Variances are not normally revealed in the accounts.
2) Budgetary control system can be operated in parts. For example: Advertisement Budgets, Research and Development Budgets, etc.
3) Budgetary control of expenses is broad in nature.

12.4.3 Requisites for Effective Budgetary Control

The following are the requisites for effective budgetary control :

1) Clear cut objectives and goals should be well defined.
2) The ultimate objective of realising maximum benefits should always be kept uppermost.
3) There should be a budget manual which contains all details regarding plan and procedures for its execution. It should also specify the time table for budget preparation for approval details about responsibility, cost centers etc.
4) Budget committee should be set up for budget preparation and efficient execution of the plan.
5) A budget should always be related to a specified time period.
6) Support of top management is necessary in order to get the full support and co-operation of the system of budgetary control.
7) To make budgetary control successful, there should be a proper delegation of authority and responsibility.
8) Adequate accounting system is essential to make the budgeting successful.
9) The employees should be properly educated about the benefits of the budgeting system.
10) The budgeting should not cost more to operate than it is worth.
11) Key factor or limiting factor, if any, should be considered before the preparation of the budget.

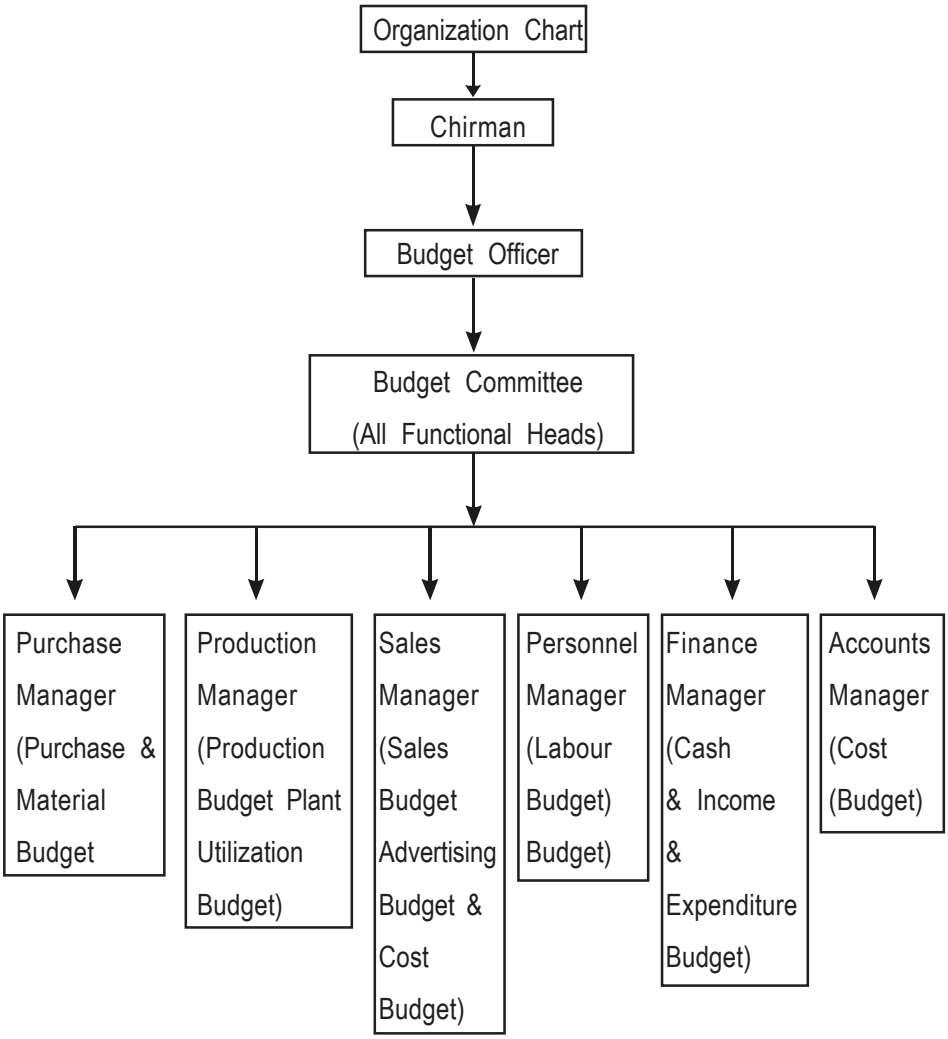
12) For budgetary control to be effective, proper periodic reporting system should be introduced.

12.4.4 Organization for Budgetary Control

In order to introduce budgetary control system, the following are essential to be considered for a sound and efficient organization. The important aspects to be considered are :

1. Organisation Chart
2. Budget Centre
3. Budget Officer
4. Budget Committee
5. Budget Manual
6. Budget Period
7. Key Factor

1) Organisation Chart : For the purpose of effective budgetary control, it is imperative on the part of each entity to have definite “plan of organization.” This plan of organization is embodied in the organization chart. The organization chart explains clearly the position of each executive’s authority and responsibility of the firm. All the functional heads are entrusted with the responsibility of ensuring proper implementation of their respective department budget. An organization chart for budgetary control is given showing clearly the type of budgets to be prepared by the functional heads.



Convener:
The member of a group whose duty is to convene meetings

From the above chart we can observe that the chairman of the company is in the overall in charge of the functions of the Budgeted Committee. A Budget officer is the convener of the budget committee, who helps in co-ordination. The purchase manager, Production Manager, Sales manager, Personnel Manager, Finance Manager and Account Manager are made responsible for preparing their budgets.

(2) Budget Centre : A Budget Centre is defined by the terminology as "a section of the organization of an undertaking defined for the purpose of budgetary control." For effective budgetary control budget centre or departments should be established for each of which budget will be set with the help of the head of the department concerned.

(3) Budget Officer: The Budget Officer is usually some senior member of the accounting staff who controls the budgetary process. He does not prepare the budget himself, but facilitates and co-ordinates the budgeting activity. He assists the individual departmental heads and the budget committee, and ensures that their decisions are communicated to the appropriate people.

(4) Budget Committee: The Budget Committee consists of the Managing director, the Production Manager, Sales Manager and Accountant. The main objectives of this committee are to agree on all departmental budgets, normal standard hours and allocations. In small concerns, the Budget Officer may co-ordinate the work for preparation and implementation of budgets. In a large-scale concern a budget committee is setup for the preparation of budget and execution of budgetary control.

(5) Budget Manual : A Budget Manual has been defined as "a document which set out the responsibilities of persons engaged in the routine of and the forms and records required for budgetary control." It contains all details regarding the plan and procedures for its execution. It also specifies the time table for budget preparation to approval, details about responsibility, cost centers, constitution and organization of budget committee, duties and responsibilities of budget officer.

(6) Budget Period : A budget is always related to specified time period. The budget period is the length of time for which a budget is prepared and employed. The period may depend upon the type of budget. There is no specific period as such. However, for the sake of convenience, the budget period may be fixed depending upon the following factors.

a) Types of Business
b) Types of Budget
c) Nature of the demand of the product
d) Length of trade cycle
e) Economic factors
f) Availability of accounting period
g) Availability of finance
h) Control operation.

(7) Key Factor : Key Factor is also called as "Limiting Factor" or Governing Factor. While preparing the budget it is necessary to consider the key factor for successful budgetary control. The influence of the Key Factor which dominates the business operations in order to ensure that the functional budgets are reasonably capable of fulfillment. The key factors include.

1) Raw materials may be in short supply.
2) Non-availability of skilled labours.
3) Government restrictions.
4) Limited sales due to insufficient sales promotion.
5) Shortage of power.
6) Underutilization of plant capacity.
7) Shortage of efficient executive.
8) Management policies regarding lack of capital.
9) Insufficient research into new product development.
10) Insufficiency due to shortage of space.

12.4.5 Advantages of Budgetary Control

The advantages of budgetary control may be summarized as follows:

1) It facilitates reduction of cost.
2) Budgetary Control guides the management in planning and formulation of policies.
3) Budgetary control facilities effective co-ordination of activities of the various departments and functions by setting their limits and goals.
4) It ensures maximization of profits through cost control and optimum utilization of resources.
5) It evaluates for the continuous review of performance of different budget centers.
6) It helps the management for efficient and economic production control.
7) It facilitates corrective actions, whenever, there are inefficiencies and weakness in actual performance in comparison with the budget.
8) It guides management in research and development.
9) It ensures economy in working.

10) It helps to adopt the principles of standard costing.

12.4.6 Limitations of Budgetary control

Budgetary Control is an effective tool for management control. However, it has certain important limitations which are identified below:

1) The budget plan is based on estimates and forecasting. Forecasting cannot be considered to be an exact science. If the budget plans are made on the basis of inaccurate forecasts then the budget programme may not be accurate and ineffective.
2) For reasons of uncertainty about the future, and changing circumstances which may develop later on, budget may prove short or excess of actual requirements.
3) Effective implementation of budgetary control depends upon willingness, co-operation and understanding among people responsible for execution. Lack of co-operation also leads to inefficient performance.
4) The system does not substitute for management. It is more like a management tool.
5) Budgeting may be a *cumbersome* and time consuming process.



Cumbersome:
Difficult to handle or use specially because of size or weight.

CHECK YOUR PROGRESS

Q1. Fill in the blanks with appropriate words:

(i) It is a statement prepared prior to a defined ..... period of-----.

(ii) ---------are prepared for different functions of business such as production, sales etc.

(iii) Budgetary control is concerned with the origin of ---------- at functional levels.

(iv) ----------should be set up for budget preparation and efficient execution of the plan.

(v) The Budget Committee consists of the Managing director, the Production Manager, Sales Manager and---------.

Q2. Write any two differences between forecast and budget.

.....

.....

12.5 TYPES OF BUDGETS

As budgets serve different purpose, different types of budgets have been developed. The following are the different classification of budgets developed on the basis of time, functions, and flexibility or capacity.

(A) Classification on the basis of Time :

1. Long-Term Budgets
2. Short-Term Budgets
3. Current Budgets

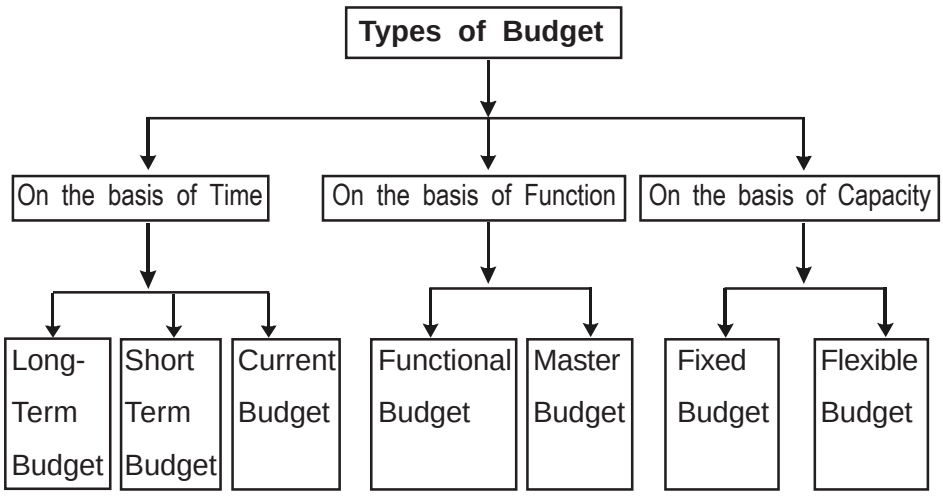
(B) Classification according to Functions :

1. Functional or Subsidiary Budgets
2. Master Budgets

(C) Classification on the basis of capacity :

1. Fixed Budgets
2. Flexible Budgets

The following chart can explain this more :



12.5.1 Classification on the Basis of Time

1. **Long-Term Budgets :** Long-term budgets are prepared for a longer period that varies between five to ten years. It is usually developed by the top level management. These budgets summaries the general plan of operations and its expected consequences. Long-Term Budgets are prepared

for important activities like composition of its capital expenditure, new product development and research, long-term finance etc.

2. **Short-Term Budgets :** These budgets are usually prepared for a period of one year. Sometimes they may be prepared for even a shorter period as for quarterly or half yearly. The scope of budgeting activity may vary considerably among different organizations.
3. **Current Budgets :** Current budgets are prepared for the current operations of the business. The planning period of a budget is generally for months or weeks. As per ICMA London, "current budget is a budget which is established for use over a short period of time and related to current conditions."

12.5.2 Classification on the Basis of Function

1. **Functional Budget :** The functional budget is one which relates to any of the functions of an organization. The number of functional budgets depends upon the size and nature of business. The following are the commonly used functional budgets:
   1) Sales Budget
   2) Purchase Budget
   3) Production Budget
   4) Selling and Distribution Cost Budget
   5) Labour Cost budget
   6) Cash Budget
   7) Capital Expenditure Budget
2. **Master budget :** The master Budget is a summary budget. This budget encompasses all the functional activities into one harmonious unit. The ICMA England defines a Master Budget as the "summary budget incorporating its functional budgets, which is finally approved, adopted and employed". When the functional budgets have been completed, the

budget committee will prepare a master Budget for the target of the concern. Accordingly, a budget is prepared incorporating the summaries of all functional budgets. It comprises budgeted profit and loss account, budgeted balance sheet, budgeted production, sales and costs. The ICMA, England, defines a Master Budget as "the summary budget incorporating its functional budgets, which are finally approved, adopted and employed." The master Budget represents the activities of a business during a profit plan. This budget is also helpful in co-ordinating the activities of various functional departments.

Exercise : 1



Pushpack & Co. a glass manufacturing company requires you to calculate and present the budget for the next year from the following information:

Toughened Glass	Rs. 2,00,000
Bent Toughened Glass	Rs. 3,00,000
Direct Material Cost	60% of Sales
Direct Wages	10 workers @ Rs. 100 per month
Indirect Labour	
Work Manager	Rs.300 Per month
Foreman	Rs.200 Per month
Stores and Spares	2% on Sales
Depreciation on Machinery	Rs. 6,000
Light and Power	Rs. 2,000
Repairs and maintenance	Rs. 4,000
Other Sundries	10% on direct Wages

Administration Selling and Distribution expenses Rs. 7,000 per year.

Solution : 1

Master Budget for the year ending .....

Particulars	Amount	Amount
Sales (as per Sales Budget) :		
Toughened glass		2,00,000
Bent Toughened glass		3,00,000
		5,00,000
Less : Cost of Production :		
(as per cost of Production Budget)		
Direct Materials	3,00,000	
Direct Wages	12,000	
Prime Cost	3, 12,000	
Add : Factory Overhead :		
Variable :		
Stores and Spares Rs. 10,000		
Light and Power Rs. 2,000		
Repairs and Maintained Rs. 4,000	16, 000	
Fixed :		
Work Manager's Salary Rs. 3,600		
Foremen Salary Rs. 2,400		
Depreciation Rs. 6,000		
Sundries Rs. 1,200	13, 200	3, 41, 200
Work's cost		3, 41, 200
Gross Profit		1, 58, 800
Less : Administration Selling & Distribution Overheads		7,000
Net Profit		1, 51, 800

12.5.3 Classification on the basis of Capacity

1. **Fixed Budget :** A fixed budget is designed to remain unchanged irrespective of the level of activity actually attained.

A budget drawn for a particular level of activity is called fixed budget. According to ICWA London "fixed budget is a budget which is designed to remain unchanged irrespective of the level of activity actually attained." Fixed budget is usually prepared before the beginning of the financial year. This type of budget is not going to highlight the cost variances due to the difference in the levels of activity. Fixed Budgets are suitable under static conditions.

2. **Flexible Budget :** A flexible budget is a budget which is designed to change in accordance with the various levels of activity actually attained. The flexible budget which is also called Variable Budget or Sliding Scale Budget, takes both fixed, variable and Semi fixed manufacturing costs into account.

Flexible Budget is also called variable or sliding Scale budget. "It takes both the fixed and manufacturing costs into account. Flexible budget is the opposite of static budget showing the expected cost at a single level of activity. According to ICMA, England defined Flexible Budget is a budget which is designed to change in accordance with the level of activity actually attained."

According to the principles that guide the preparation of the flexible budget a series of fixed budgets are drawn for different levels of activity. A flexible budget often shows the budgeted expenses against each item of cost corresponding to the different levels of activity. This budget has come into the use for solving the problems caused by the application of the fixed budget.

Advantages of Flexible Budget

1) In flexible budget, all possible volume of output or level of activity can be covered.

2) Overhead costs are analysed into fixed variable and semi-variable costs.
3) Expenditure can be forecasted at different levels of activity.
4) It facilitates at all times related factor, it can be compared, which are essential for intelligent decision making.
5) A flexible budget can be prepared with standard costing or without depending upon what the Company opts for.
6) Flexible budget facilitates ascertainment of costs at different levels of activity, price fixation, placing tenders and Quotations.
7) It helps in assessing the performance of all departmental heads as the same can be judged by terms of the level of activity attained by the business.

Distinction Between Fixed Budget and Flexible Budget

Fixed Budget	***Flexible Budget***
1) It does not change with the volume of activity	1) It changes in accordance with the activity level.
2) All costs are related to one level of activity only	2) Costs are analyed by behaviour and variable costs are allowed as per activity attained.
3) If budget and actual activity levels vary, ascertainment of costs is not possible	3) Flexible budgeting helps in fixation of selling price at different levels of activity
4) It has a limited application for cost control	4) It has more application and can be used as a tool for effective cost control
5) It is rigid budget and drawn on the assumption that conditions would remain constant.	5) It is designed to change according to changed conditions.
6) Comparison of actual and budgeted performance	6) Comparisons are realistic according to the change in

cannot be done correctly because the volume of Production differs.	the level of activity.
7) Costs are not classified according to their variability i.e. fixed variable and semi-variable.	7) Costs are classified according to the nature of their variability.



Exercise : 2

The expenses budgeted for production of 10,000 units in a factory are furnished below :

	Per unit Rs.
Materials	70
Labour	25
Variable factory overheads	20
Fixed factory overheads (Rs. 1,00,000)	10
Variable expenses (Direct)	5
Selling expenses (10% Fixed)	13
Distribution expenses (20% Fixed)	7
Administrative expenses (Rs. 50,000)	5

Total cost of sale per unit	155

You are required to prepare a budget for the production of 8,000 units.

Solution : 2

Flexible Budget

Particulars	Output 10,000 units		Output 8,000 units	
	Per unit	Amount	Per unit	Amount
Variable Expenses :				
Material cost	70	7,00,000	70	5,60,000
Labour cost	25	2,50,000	25	2,00,000
Direct expenses				
(Variable)	5	50,000	5	40,000
Prime cost	100	10,00,000	100	80,00,000
Add : Factory overheads :				
Variable Overheads	20	2,00,000	20	1,60,000
Fixed Overheads	10	1,00,000	12.50	1,00,000
Works cost	130	13,00,000	132.50	10,60,000
Add : Administrative expenses				
(Assumed as Fixed)	5	50,000	6.25	50,000
Cost of production	135	13,50,000	138.75	11,10,000
Add : Selling Expenses				
Fixed - 10% of Rs 13	1.30	13,000	1.63	13,000
Variable - 90% of Rs 13	11.70	1,17,000	11.70	93,600
Add : Distribution Expenses :				
Fixed - 20% of Rs. 7	1.40	14,000	1.75	14,000
Variable - 80 % of Rs. 7	5.60	56,000	5.60	44,800
Total Cost of Sales	155	15,50,000	159.43	12,75,400



CHECK YOUR PROGRESS

Q3. Explain current budget.

.....

.....

.....

Q4. Explain Fixed Budget

.....

.....

.....

.....



12.6 LET US SUM UP

In this unit we have discussed the Following :

- Forecasting precedes preparation of a budget as it is an important part of the budgeting process.
- Budgetary Control is a system which uses budgets as a means of planning and controlling.
- Long-Term Budgets : Long-term budgets are prepared for a longer period varies between five to ten years.
- Short-Term Budgets : These budgets are usually prepared for a period of one year.
- Current Budgets : Current budgets are prepared for the current operations of the business.
- Functional Budget : The functional budget is one which relates to any of the functions of an organization.
- Master budget : The master Budget is a summary budget.
- Fixed Budget : A fixed budget is designed to remain unchanged irrespective of the level of activity actually attained.
- Flexible Budget : A flexible budget is a budget which is designed to change in accordance with the various level of activity actually attained.



12.7 FURTHER READING

1. Management Accounting: Khan & Jain
2. Cost Accounting : Hongren
3. Cost & Management Accounting: Jain & Narang
4. Cost Accounting: B. Banerjee

12.8 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q1: (i) Time, (ii) Budgets, (iii) expenditure, (iv) Budget committee, (v) Accountant

Ans to Q2: (1) Forecasts is mainly concerned with anticipated or probable events. Budget is related to planned events.

2) Forecasts may cover for longer period or years. Budget is planned or prepared for a shorter period.

Ans to Q3: Current budget is a budget which is established for use over a short period of time and related to current conditions.

Ans to Q4: A fixed budget is designed to remain unchanged irrespective of the level of activity actually attained.



12.9 MODEL QUESTIONS

Q1. What do you mean by a budget ?

Q2. What are the essentials of a budget ?

Q3. What are the differences between budgets and forecasts ?

Q4. What do you understand by budgetary control ?
Explain briefly the characteristics of a good budget ?

Q5. What are the objectives of Budgetary Control ?

Q6. What are the advantages of Budgetary Control ?

Q7. What are the limitations of Budgetary Control ?

*** ***** ***

UNIT 13: CASH FLOW STATEMENT

UNIT STRUCTURE

13.1 Learning Objectives

13.2 Introduction

13.3 Cash Flow Statement

- 13.3.1 Meaning
- 13.3.2 Uses of Cash Flow Statement
- 13.3.3 Difference between Fund Flow and Cash Flow Statement
- 13.3.4 Limitations of Cash Flows Statement
- 13.3.5 Preparation of Cash Flow Statement

13.4 Sources and Application of Cash

13.5 Cash from Operations

13.6 External Sources and Application of Cash

13.7 Let Us Sum Up

13.8 Further Reading

13.9 Answers to Check Your Progress

13.10 Model Questions

13.1 LEARNING OBJECTIVES

After going through this unit, you will be able to

- explain Classification of Cash Flow
- describe sources and Application of Cash
- explain Cash from Operations
- describe Preparation of Cash Flow.

13.2 INTRODUCTION

In this unit, we are going to discuss Cash Flow Statement. In financial accounting, a cash flow statement or statement of cash flows is a financial statement that shows how changes in balance sheet and income accounts affect cash and cash equivalents, and breaks the

analysis down to operating, investing, and financing activities. As an analytical tool, the statement of cash flows is useful in determining the short-term viability of a company, particularly its ability to pay bills.

13.3 CASH FLOW STATEMENT

The cash flow statement is intended to

1. provide information on a firm's liquidity and solvency and its ability to change cash flows in future circumstances
2. provide additional information for evaluating changes in assets, liabilities and equity
3. improve the comparability of different firms' operating performance by eliminating the effects of different accounting methods
4. indicate the amount, timing and probability of future cash flows

The cash flow statement has been adopted as a standard financial statement because it eliminates allocations, which might be derived from different accounting methods, such as various time frames for depreciating fixed assets.

13.3.1 Meaning

Cash Flow is the life blood of a business which plays a vital role in an entire economic life. As discussed in the previous unit the word ‘fund’ is used in a narrower sense refers to ‘cash’. When cash is used as ‘fund’, the analysis relates to movement of cash. Cash flows refer to the actual movement of cash into and out of an organization. In other words, the movement of cash inclusive of inflow of cash and out flow of cash. When the cash flows into the organization, it represents ‘Inflow of Cash.’ Similarly when the cash flows out of the business concern, it called as “Cash Outflow.”

In order to ensure cash flows are adequate to meet current liabilities such as tax payments, wages, amounts due to trade creditors, it is essential to prepare a statement of changes in the financial position of a firm on cash basis is called as “Cash Flow

Statement." This statement depicting movement of cash position from one period to another.

13.3.2 Uses of Cash Flow Statement

Cash Flow Statement is a useful tool to the management for taking important financial decision making. The following are the uses of this statement :

1) This Statement is the most useful to the management to prepare dividend and retention policies.
2) It guides the management to evaluate the changes in cash position.
3) It presents in brief to the management about the performance of operational, financial and investment nativities for effective decision.
4) It helps to know how the movement of cash took place and the factors which caused the changes in cash flows.
5) It guides the management in order to take decision about short-term obligations.
6) It also presents the details about the sources of cash and applications of cash during the particular period.

Nativity:
The event of being born

13.3.3 Difference between Fund Flow Statement and cash Flow Statement

Fund Flow Statement and Cash Flow Statement are the two useful tools of financial analysis and interpretations of financial statements. But at the same time both the statements differ from each other in the following manner :

1) Fund Flow Statement helps to measure the causes of changes in working capital whereas cash flow statement focuses on the causes for the movement of cash during a particular period.
2) Fund flow statement is prepared on the basis of Fund or all financial resources while cash flow statement is based on cash basis of accounting.

3) Cash Flow Statement guides to the management for short-term financial planning while Fund flow analysis helps to the management for intermediate and long-term financial planning.
4) Statement of changes in Working capital is required for the preparation of Fund flow statement while for cash flow Statement no such statement is required.

13.3.4 Limitations of Cash Flow Statement

1) Cash Flow Statement has limited scope as it compares with Fund Flow statements. Because it discloses inflows and outflows of cash alone. It does not reveal the overall financial position of the concern.
2) Cash Flow Statement cannot provide a comprehensive picture of a financial position because non-cash items of expenses and incomes are excluded.
3) The balance as disclosed by the cash flow statement may not be treated as actual liquid position of a concern since it cannot be easily influenced by postponing purchases and other payments.

13.3.5 Preparation of Cash Flow Statement

Cash Flow Statement is prepared like Fund Flow Statement. Preparation of this statement is based on the movement of cash, may be an actual inflow of cash or outflow of cash, Profit and Loss Account and other relevant information. While preparing a cash flow statement, it starts with an opening balance of cash in hand and cash at bank, all the sources of cash are added to an opening balance minus applications of cash is reconciled with the closing balance of cash. The balance represents cash and bank balances at the end of accounting period.



CHECK YOUR PROGRESS

Q1. Fill in the blanks with appropriate words:

(i) Fund flow statement is prepared on the basis of ----------, while cash flow statement is based on -------- basis of accounting.

(ii) Cash flow guides the management in order to take decision about ----------term obligations.

(iii) Cash Flow Statement has ----------scope as it compares with Fund Flow statements.

Q2. Write any two differences between cash flow and fund flow statement.

.....

.....

.....

.....

13.4 SOURCES AND APPLICATIONS OF CASH

Sources of Cash (Inflow of Cash)

The following are the main sources of cash such as :

1) Cash From Operations or Trading Profit.
2) Sale of Fixed Assets for Cash.
3) Sale of Investments for Cash.
4) Raising Long-Term Loans from banks and Financial Institutions.
5) Issue of Shares and Debentures for Cash.

Application of Cash (Outflow of Cash)

Application of cash can be involved in the following forms :

1) Cash Lost in Operations or Trading Losses.
2) Redemption of Shares and Debentures by Cash.
3) Purchase of Fixed Assets.
4) Repayment of Long Term Loans.

Computation of Cash Flow Statement

A Comprehensive Cash Flow Statement is ascertained in two stages:

1) Cash From Operations i.e., internal sources of cash calculated by preparing combined statements of adjusted profit and loss account.
2) External Sources and Applications of cash, i.e.Flow of Cash involves in non-current items ascertained by the Statement of Sources and Applications of Cash.

Sources of Cash (Inflow of Cash)	*Applications of Cash (Outflow of Cash)*
Cash From Operations	Cash Lost in Operations
Sale of Fixed Assets	Purchase of Fixed assets
Sale of Investments	Purchase of Investment
Issue of Shares	Redemption of Preference Shares
Issue of Debentures	Redemption of Debentures
Raising Long-Term Loans	
Increase in any Liabilities	Decrease in any Liability
Decrease in any Assets	Decrease in any Assets

13.5 CASH FROM OPERATIONS

Cash from operations is the main source of inflow of cash. The Net profit or Net Loss is the net effect of business transactions shown by the profit and loss account. In order to find out the actual movement of cash from trading operations, it is essential to ascertaining cash from operations. It can be calculated under the following situations :

a) When all Transactions are Cash Transactions.
b) When all Transactions are not Cash Transactions.

a) When all Transactions are Cash Transactions : It assumes that where all the expenses and losses, incomes and gains are paid or received in cash during the particular period. The Net profit or Net Loss shown by the profit and loss account is taken as the amount of cash from operations. Thus, Net Profit or Net Loss is equal to cash from operations. When Net Profit is made by a firm, it represents Cash Inflow or Cash Profit From Operations. Similarly the Net Loss shown by the profit and loss account refers to cash Outflow from Operations.

b) When all Transactions are not cash Transactions : In actual practice, in business, transactions are made either on cash basis or credit basis. For example, goods purchased or sold on cash as well as on credit, Certain expenses are always outstanding and some of the incomes are not immediately realized under such circumstances, the net profit made by a firm cannot generate equivalent amount of cash. Therefore, the charging of non-fund or non-cash items such as outstanding expenses, incomes received in advance, prepaid expensed and outstanding income etc. to profit and loss account should be readjusted. In such circumstances the actual cash from operations can be calculated by preparing adjusted profit and loss account.

Calculation of Cash from Operations

Cash from Operations can be calculated by either of the following methods :

A) Cash From Operations calculated with the help of Adjusted Profit and Loss account. Under this method, all non-fund or non-operations items should be readjusted to cash profit from operations as given below :

Cash from Operations

(Adjusted Profit and Loss Account)

Particulars	Rs.	Particulars	Rs.
To Depreciation on Fixed Assets		By balance b/d	
To Transfer to General Reserve		(Opening balance of P & L A/c)	
To Loss on Sale of Fixed Assets		By Profit on Sale of fixed Assets	
To Increase in Outstanding Expenses		By Profit on Sale of Investments	
To Decrease in Prepaid Expenses		By Decrease in Outstanding Expenses	
To Preliminary Expenses written off		By Increase in Prepaid Expenses	
To Balance c/d		By Cash From Operations	
(Closing Balance of P & L A/c)		(Balancing figure)	

B) Cash From Operations can also be calculated on the basis of current assets and current liabilities. Under this method, the amount of changes in the various items of current assets and current liabilities other than cash and bank balances should be adjusted with the help of Adjusted Profit and Loss Account. It may be noted that, as compared to above this method may increase or decrease in items of creditors, stocks, debtors, bills receivable and bills payable are not adjusted while calculating cash profit from operations and they may be directly taken as Sources (inflow) of Cash or Application (outflow) of Cash. This method is generally adopted in practice.

While applying this method, the following general principles may be taken for measuring cash from operations :

Increase in Current Assets	---------->	Decreases in Cash
Decrease in Current Assets	---------->	Increase in Cash
Increase in Current Liability	---------->	Increase in Cash
Decrease in Current Liability	---------->	Decrease in Cash

Specimen Form

The specimen form for computation of cash from operations is given below :

Calculation of Cash from Operations :

(Combining Current Assets & Current Liabilities & Non-Cash & Non-Operating Items)

Particulars	*Rs.*	*Rs.*
Net Profit		
(Closing Balance of Profit & Loss A/c)		***
Add:		
Depreciation on Fixed Assets	***	
Transfer to General Reserve		
Loss on Sale of Fixed Assets		
Loss in Sale of Investments		
Goodwill Written off		
Increase in Outstanding Expenses		
Decrease in Prepaid Expenses		
Decrease in Current Assets		
(Other than Cash and Bank)		
Increase in Current Liabilities	***	***
Preliminary Expenses Written off	***	
Less :		
Profit on Sale of Fixed Assets		
Profit on Sale of Investments		
Decrease in Outstanding Expenses		
Increase in Prepaid Expenses		
Increase in Current Assets		
(Other than Cash and Bank)		
Increase in Current Liabilities		
Opening Balance of Profit & Loss A/c	***	
Cash From Operations		***



Exercise : 1

From the following Balance Sheet of ABC Ltd. you are required to calculate Cash From Operations :

Particulars	*2002* *Rs.*	*2003* *Rs.*
Capital and Liabilities		
Share Capital	20,000	20,000
Profit made during the year	14,100	17,300
Provision for Depreciation	1,000	1,400
Long-Term Loans	2,000	3,000
Trade Creditors	6,450	5,300
Outstanding Expenses	850	150
	44,400	47,150
Assets :		
Plant and Machinery	28,500	30,000
Stocks	9,800	11,300
Trade Debtors	3,950	2,850
Cash Balances	2,150	3,000
	44,400	47,150

Solution : 1

Particulars	*2002* *Rs.*	*2003* *Rs.*
Profit made during the		
(Closing Balance of P & L A/c)		17,300
Add :		
Provision for Depreciation	400	
Decrease in Debtors	1,100	1,500
		18,800
Less :		
Decrease in Creditors	1,150	
Decrease in Outstanding Expenses	700	
Increase in Stock	1,500	
Net Profit (Opening Balance of P & L A/c)	14,100	17,450
Cash From Operations		1,350

13.6 EXTERNAL SOURCES AND APPLICATIONS OF CASH

External Sources of Cash

The following are the external sources of cash such as :

1) **Fresh Issue of Shares :** Cash is received by issue of fresh shares to the public, after deducting necessary expenses and discount on issue of shares will be treated as sources of cash.
2) **Issue of Debentures :** The Net cash is received by the issue of debentures is source of cash.
3) **Raising Long Term Borrowings :** Long term loans received from banks and financial institutions refer to inflow of cash.
4) **Sale of Fixed Assets and Investments :** Net cash received from the sale of permanent assets and investments are treated as sources of cash.

Applications of Cash

Applications of cash or cash outflows or uses of cash may take any of the following forms :

1) **Redemption of Shares and Debentures :** When redeemable preference shares and debentures are redeemed by paid in cash, it refers to as application or outflow of cash.
2) **Purchase of Fixed Assets :** Cash used for purchase of plant and machinery, land and building, furniture and fixtures etc., or renewals and replacement of fixed assets are to be treated as outflow of cash.
3) **Payment of Long-Term Loans :** The repayment or discharge of long-term loans received from banks and financial institutions results in outflow of cash.

Specimen Form of Cash Flow of Statement

Cash Flow Statement is prepared in any one of the following two ways:

1) Account Form.
2) Report Form.

1) Account Form :

Cash Flow Statement

Particulars	*Rs.*	*Particulars*	*Rs.*
Opening Balance :		Cash Lost in Operations	
Cash		Redemption of Preference Shares	
Bank		Redemption of Debentures	
Fesh Issue of Shares		Repayment of Long-Term Loans	
Issue of Debentures		Purchase of Fixed Assets	
Raising Long-Term Loans		Purchase of Investments	
Sale of Fixed Assets		Tax Paid	
Sale of Investments		Dividend Paid	
Dividends Received		Closing Balance :	
Cash From Operations		Cash	
		Bank	
	***		***

2) Report Form :

Cash Flow Statement

Particulars	*Rs.*	*Rs.*
Opening Balance :		
Cash		***
Bank		***
Add : Sources of Cash :		
Fresh Issue of Shares		
Issue of Debentures		
Long-Term Loans from Bank and		
Financial Institutions		
Sale of Fixed Assets		
Sale of Investments		
Dividends Received	***	
Cash From Operations		***
		***

Total Inflow of Cash (A)		
Less : Applications of Cash :		
Redemption of Preference Shares		
Redemption of Debentures		
Repayment of Long-Term Loans		
Purchase of Fixed Assets		
Payment of Dividends		
Payment of Tax		
Cash Lost of in Operations	***	***
Total Outflow of Cash (B)		***
Closing Balance of Cash and Bank		***



Exercise : 2

From the following Balance sheets of ABC Ltd. you are required to prepare a Cash Flow Statement

Balance Sheet

Liabilities	*2002* *Rs.*	*2003* *Rs.*	*Assets*	*2002* *Rs.*	*2003* *Rs.*
Share Capital	20,000	30,000	Fixed Assets	20,000	20,000
Profit & Loss A/c	10,000	16,000	Good Will	10,000	8,000
General Reserve	6,000	8,000	Stock	10,000	16,000
Debenture	10,000	12,000	Trade Debtors	10,000	16,000
Trade Creditors	6,000	8,000	Bills Receivable	2,000	4,000
Outstanding Expenses	2,000	3,000	Bank Balance	2,000	3,000
	54,000	77,000		54,000	77,000

Solution : 2

Calculation of Cash Flow Operations

Particulars	*Rs.*	*Rs.*
Net Profit during the year		
(Closing Balance of Profit & Loss A/c)		16,000
Add :		
General Reserve (6000 - 8000)	2,000	
Good Will Written off (10,000 - 8000)	2,000	
Increase in Outstanding Expenses	1,000	
Increase in Trade Creditors	2,000	7,000
		23,000
Less :		
Increase in Stock (10,000 - 16,000)	6,000	
Increase in Debtors (10000 - 16000)	6,000	
Increase in Bills Receivable	2,000	
Opening Balance of P & L A/c	10,000	24,000
		1,000

Cash Flow Statement

Sources of Cash	*Rs.*	*Applications of Cash*	*Rs.*
Opening Balance :		Purchase of Fixed Assets	
Cash at Bank	2,000	Cash lost in Operations	10,000
Add :		Closing Balance :	
Issue of Shares	10,000	Cash at Bank	3,000
Issue of Debenture	2,000		
	14,000		14,000



13.7 LET US SUM UP

In this unit we have discussed about cash flow statement. Cash flows refer to the actual movement of cash into and out of an organisation. In order to ensure that cash flows are adequate to meet the current liabilities such as tax payment, wages, amounts due to trade creditors, it is essential to prepare a statement of changes in the financial position of a firm. Cash flow statement is most useful in the preparation of dividend and retention policies.



13.8 FURTHER READING

1. Jain P K & Khan MY(2017); *Management Accounting*,7edition Mcgraw Higher Ed, India
2. Narang K.L. & Jain S.P.(2015), *Cost Accounting*, Kalyani Publications
3. Narang K.L. & Jain S.P(2015), *Cost And Management Accounting,*
4. Lal J & Srivastava S (2013), *Cost & Management Accounting*; Mcgraw Higher Ed
5. Banerjee(2013);*Cost Accounting: Theory and Practice*; PHI Learning Pvt Ltd; New Delhi

13.9 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q1. (i) fund, cash, (ii) short, (iii) limited

Ans to Q2. (i) Fund Flow Statement helps to measure the causes of changes in working capital whereas cash flow statement focuses on the causes for the movement of cash during a particular period.

(ii) Fund flow statement is prepared on the basis of Fund or all financial resources while cash flow statement is based on cash basis of accounting.



13.10 MODEL QUESTIONS

Q1. What is meant by Cash Flow Statement ?

Q2. Explain briefly the uses of Cash Flow Statement ?

Q3. What are the limitations of Cash Flow Statement ?

Q4. Explain the procedure for preparing a Cash flow Statement.

Q5. What are the components of Sources and Applications of Cash?

Particular Problems

Particulars	*2002 Rs.*	*2003 Rs.*
Capital and Liabilities		
Equity Share capital	2,30,000	2,30,000
General Reserve	60,000	60,000
Profit and Loss Account	16,000	23,000
Debenture	90,000	70,000
Bills Payable	1,03,000	96,000
Outstanding Salary	13,000	12,000
Depreciation Fund	40,000	44,000
	5,52,000	5,35,000
Assets :		
Cash Balance	90,000	90,000
Trade Debtors	67,000	43,000
Bills Receivable	1,10,000	74,000
Stock	82,000	1,06,000
Prepaid Expenses	1,000	2,000
Land & Building	1,50,000	1,50,000
Machinery	52,000	70,000
	5,52,000	5,35,000

Additional Information

1) Now machinery for Rs. 30,000 was purchased but old machinery costing Rs. 6,000 was sold for Rs. 4,000; accumulated depreciation was Rs. 6,000.
2) Rs. 20,000 8% Debenture were redeemed by purchase from open market @ Rs. 96 for a debenture of Rs. 100.
3) Rs. 36,000 investments were sold at book value.
4) 10% dividend was paid in cash.

   [**Ans.** Cash Form Operations Rs. 54,200; Cash Flow Statement Rs. 2,08,200]

*** ***** ***

UNIT 14: RECONCILIATION OF COST

UNIT STRUCTURE

14.1 Learning objectives

14.2 Introduction

14.3 Reconciliation of Cost and Financial Account

14.4 Importance of Reconciliation

14.5 Method of Reconciliation

14.6 Let Us Sum Up

14.7 Further Reading

14.8 Answers to Check Your Progress

14.9 Model Questions

14.1 LEARNING OBJECTIVES

After going through this unit, you will be able to

- explain Cost Control Accounts
- describe Reconciliation of cost and Financial Account
- explain different methods of Reconciliation.

14.2 INTRODUCTION

In this unit we will discuss reconciliation of Cost and financial Accounts. Reconciliation of cost and financial accounts briefly means tallying the profit or loss revealed by both sets of accounts. Then we will discuss importance of reconciliation and different methods of reconciliation.

14.5 RECONCILIATION OF COST AND FINANCIAL ACCOUNT

In business concern where Non-integrated Accounting system is followed, cost and financial accounts are maintained separately, the difference between the ends results of these two are required to be reconciled. Reconciliation of cost and financial accounts mean tallying

the profit or loss revealed by both set of accounts. The chief aim is to find out the reasons for the difference between the results shown by Cost Accounts and Financial Accounts.

Reasons for the Difference

The various reasons which create difference between cost and financial profit or loss shown by the two set of books may be listed under the following heads:

1) Items shown only in Financial Accounts
2) Items shown only in Cost Accounts
3) Absorption of Overheads
4) Methods of Stock valuation
5) Abnormal Loss and Gains

1) Items shown only in Financial accounts: Some items of income and expenses which are included only in financial accounts but are not shown in cost accounts and vice versa. The following items are shown in financial accounts but not in cost accounts:

(A) Income:

1) Profit on sale of fixed assets
2) Interest received on investment
3) Dividend received on investment
4) Rent, brokerage and commission received
5) Premium on issue of shares
6) Transfer fees received.

(B) Expenditure:

1) Loss on sale of fixed assets, e.g. Plant and Machinery, Building etc.
2) Interest Paid
3) Discount paid
4) Dividend Paid
5) Losses due to scrapping of plant and machinery
6) Penalties and fines
7) Expenses of shares transfer fees

8) Parliamentary expenses written off

9) Damages payable at law.

2) Items shown only in Cost Accounts : There are some items which are recorded only in Cost Accounts but are not included in financial accounts, national interest on capital, notional rent of premises owned, salary to proprietor etc. are not recorded in financial account because the amount is not actually spent or paid. These expenses reduced the profit in cost account while in financial account it may be the reverse effect.

3) Absorption of Overheads: In financial accounts actual amount of expenses paid are recorded while in cost accounts overheads are charged at predetermined rates. If overhead charged are not equal to the amount of overhead incurred the under or over absorption of overhead leads to difference in profits of two accounts.

4) Methods of Stock valuation: The term stock to opening or closing stock of raw materials, work in progress and finished goods. In financial accounts stocks are valued at cost price or market price whichever is lower. In cost Account, stock of raw materials can be valued on the basis of FIFO, LIFO and Simple Average method etc., and work in progress may be valued at Prime Cost or Work Cost. Finished stocks are generally valued on the basis of cost of production. Thus, the adaptation of different method of valuation of stock leads to difference in profits of two sets of accounts.

5) Abnormal Losses and Gains: Different items of abnormal wastages, losses or gains which are included in financial accounts but are not recorded in cost accounts. Thus, the figures of abnormal losses and gains may affect the results in financial accounts alone.

14.4 IMPORTANCE OF RECONCILIATION

Reconciliation of cost and financial account is necessary for the following reasons:

1) To ensure arithmetical accuracy of both set of accounts for effective cost ascertainment and cost control.

2) To identify the reasons for different results in two sets of accounts.
3) To evaluate the reasons for variations for effective internal control.
4) To enable the smooth co-operation and co-ordination between the activities of cost and financial accounting departments.
5) To ensure the standardization of policies relating to stock valuation, depreciation and absorption of overheads.



CHECK YOUR PROGRESS

Q1. Fill in the blanks with appropriate words:

(i) Reconciliation of cost and financial accounts mean ----------the profit or loss revealed by both set of accounts.

(ii) Interest paid is a component of----------.

(iii) Reconciliation of cost and financial account is necessary to identify the reasons for ----------in two sets of accounts.

14.5 METHOD OF RECONCILIATION

For reconciling the profit or loss a Reconciliation Statement or Memorandum or reconciliation Account is prepared.

The following steps have to be taken for preparation of Reconciliation Statement :

1) Ascertain the extent of difference between the profit or loss disclosed by two set of book of accounts.
2) Take the base profit or loss as per any set of books (either cost or financial) of accounts as the starting point.
3) Prepare a statement by making suitable adjustment of items either added or subtracted included in one set of accounts but not in the other set.
4) In other words, balances as per cost account has been taken as the starting point, and then balance as per financial account is to be adjusted according to the transaction recorded in the financial accounts and vice versa.

The following table will help to prepare the reconciliation of cost and financial accounts:

Treatment of causes for Differences

		Suitable Adjustments	
S. No.	Reasons for Differences	Base is Costing Profit or Financial Loss (+) or (—)	Base is Financial Profit of Costing Loss (+) or (—)
1.	Over absorption of overhead in cost Account	Add (+)	Less (—)
2.	Over valuation of closing stock in Financial Account	Add (+)	Less (—)
3.	Over valuation of opening stock in Cost Account	Add (+)	Less (—)
4.	Excess provision for depreciation of building Plant & machinery etc. charged in Cost Account	Add (+)	Less (—)
5.	Items of expenses charged in Cost Account but not in Financial Accounts (Example Notional interest on capital, Notional rent on Premises)	Add (+)	Less (—)
6.	Items of income recorded in Financial Account but not in Cost Account	Add (+)	Less (—)
7.	Under absorption of overhead in Financial Account	Less (—)	Add (+)
8.	Over valuation of opening stock in Financial Account	Less (—)	Add (+)
9.	Over valuation of closing stock in Cost Account	Less (—)	Add (+)

10.	Item of income tax, dividend paid, preliminary expenses written off, goodwill written off, under writing Commission and debenture discount written off and any appropriation of profit included in Financial Account only.	Less (—)	Add (+)

Types of Problems

You are required to prepare a reconciliation of cost and financial account from the following situations:

1) When profit or loss of financial and cost account are given

2) When profit or loss of financial account is given

3) When profit or loss of cost account is given

4) When profit and loss account and additional information are given.



Exercise : 1

The financial books of a company show a net profit of Rs. 1, 27, 560 for the year ending 31st Dec. 2003. The Cost Account shows a net profit of Rs. 1,33, 520 for the same corresponding period. The following facts are brought to light :

	Rs.
Factory overhead under recovered in costing A/c	11,400
Administration overhead over recovered in costing A/c	8,500
Depreciation charged in financial accounts	7,320
Depreciation recovered in cost A/c	7,900
Interest received but not included in cost A/c	900
Income Tax debited in financial A/c	1,200
Bank interest credit financial A/c	460
Stores adjustment credit in financial A/c	840

Rent charged in financial A/c	1,720
Dividend paid recorded in financial A/c	2,400
Loss of obsolescence charged in financial A/c	520

Solution : 1

Reconciliation Statement

Particulars	*Rs.*	*Rs.*
Profit as per Cost Accounts		1,33,520
Add :		
Administration overhead over recovered in Cost Account	8,500	
Depreciation over recovered in Cost Account (7900 — 7320)	580	
Interest received but not included in Cost Account	900	
Bank interest credited in Financial A/c	460	
Store adjustments credited in Financial A/c	840	11,280
		1,44,800
Less :		
Factory overhead under recovered in Cost A/c	11,400	
Income Tax received but not included in Cost A/c	1,200	
Rent charged in Financial A/c	1,720	
Divident paid charged in Financial A/c	2,400	
Loss of obsolence charged in Financial A/c	520	17,240
Profit as per Financial Accounts		1,27,560



CHECK YOUR PROGRESS

Q2. What is the first step for preparation of Reconciliation Statement?

.....

.....

.....

.....



14.6 LET US SUM UP

In this unit we have discussed reconciliation of cost and financial accounts. Reconciliation of cost and financial accounts mean tallying the profit or loss revealed by both set of accounts. Reconciliation of cost and financial account is necessary to ensure arithmetical accuracy of both sets of accounts for effective cost ascertainment and cost control.



14.7 FURTHER READING

1. Jain P K & Khan MY(2017); *Management Accounting*,7edition Mcgraw Higher Ed, India
2. Narang K.L. & Jain S.P.(2015), *Cost Accounting*, Kalyani Publications
3. Narang K.L. & Jain S.P(2015), *Cost And Management Accounting,*
4. Lal J & Srivastava S (2013), *Cost & Management Accounting*; Mcgraw Higher Ed
5. Banerjee(2013);*Cost Accounting: Theory and Practice*; PHI Learning Pvt Ltd; New Delhi

14.8 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q1. (i) Tallying, (ii) expenditure, (iii) different results

Ans to Q2. Ascertain the extent of difference between the profit or loss disclosed by two set of book of accounts.



14.9 MODEL QUESTIONS

Q1. What do you understand by Reconciliation of Cost and Financial Accounts?

Q2. Briefly explain the reasons for the difference between profit and loss as per cost accounts and financial accounts.

Q3. What are the important Reconciliation Statements?

Q4. Explain briefly the methods of preparation of reconciliation statement of cost and financial profit.

Q5. List out the different items of income and expended which are included in financial account but ignore in cost account.

*** ***** ***



REFERENCES (FOR ALL UNITS)

1. Banerjee(2013);*Cost Accounting: Theory and Practice*; PHI Learning Pvt Ltd; New Delhi
2. Lal J & Srivastava S (2013), *Cost & Management Accounting*; Mcgraw Higher Ed
3. Jain P K & Khan MY(2017); *Management Accounting*,7edition Mcgraw Higher Ed, India
4. Narang K.L. & Jain S.P.(2015), *Cost Accounting*, Kalyani Publications
5. Narang K.L. & Jain S.P(2015), *Cost And Management Accounting,*