MBA-1.3

Accounting For Management

Uttar Pradesh Rajarshi Tandon
Open University

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Introduction Accounting Standards and Concepts

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TESLA-016

UNIT-1 ACCOUNTING AND ITS FUNCTIONS

Structure

1.1 INTRODUCTION

Accounting is a language by which economic actions are translated and communicated to those who have interest about such economic activities and results thereof. Accounting is a discipline that systematically records all economic activities performed by a person and gives results thereof that is why accounting is also called the language of business. Accounting has been defined in various ways. According to one commonly accepted definition, "Accounting is the art of recording, classifying and summarising in a significant manner and in terms of money, transactions and events which are, atleast of financial character and interpreting the results thereof." Another definition which is less restrictive interprets accounting as "The process of identifying, measuring and communicating economic information to permit informed judgments and decisions by the users of information"

1.2 OBJECTIVES

After Studying this unit you would be able to understand the :

- Scope, nature and role of accounting;

- Activities of an accountant;
- Roles of accounting personnel and the accounting function in an organization.
- Organisation for accounting and finance.

1.3 SCOPE OF ACCOUNTING

According to R.J. Bull the scope of accounting can be presented in the following points: The collection and creation of data is the area which provides raw material for accounting. The data collected is 'historic in the sense that it refers to events which have already taken place. Accounting is largely concerned with what had happened but these days it is making attempt to predict and plan for future also.

After carefully scrutinizing the historic data, it is recorded in accordance with generally accepted accounting theory. A large number of transactions have to be entered in the books of original entry (journals) and ledgers in accordance with the classification scheme already decided upon. The recording and processing of information usually accounts for a substantial part of total accounting work.

Activity of accounting may be called recordative.* The processing method employed for recording may be manual, mechanical or electronic. Computers are also used widely in modern business for doing this job.

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* *Scope of Accounting by R.J. Bull, Accounting in Business, Butterworths, London, 1969, p.2.*

The Evaluation & Date is regarded as the most important activity in accounting these days. Evaluation of data includes controlling the activities of business with the help of budgets and standard costs (budgetary control), evaluating the performance of business, analysing the flow of funds, and analysing the accounting information for decision making purposes by choosing among alternative courses of action.

The **Analysis and Interpretation** work of accounting may be for internal or external uses and may range from snap answers to elaborate reports produced by extensive research. Capital project analysis, financial forecasts, budgetary projections and analysis for reorganisation, takeover or merger often lead to research-based reports.

The evaluation & date can also be known as the **auditive** work which focuses on verification of transactions as entered in the books of account and authentication of financial statements. This work is done by public professional accountants.

The Reporting & Data comprises of two parts-external and internal. External reporting refers to the communication of financial information (viz., earnings, financial and funds position) about the business to outside parties, e.g., shareholders, government agencies and regulatory bodies of the government. Internal reporting is concerned with the communication of results of financial analysis and evaluation to management for decision-making purposes.

The basic purpose of accounting is to make possible the periodic **matching** of costs (efforts) and revenues (accomplishments). This concept is the nucleus of accounting theory.+

1.4 EMERGING ROLE OF ACCOUNTING

With the change of time and socio-economic conditions the emerging role of accounting has also changed and enlarged. The evaluation of accounting can be mentioned in four phases.

Stewardship Accounting

In ancient and medival times, wealthy people employ 'stewards' to manage their estate. These stewards rendered statement of their stewardship to their employees periodically. This denotes the root of financial reporting nowadays the orderly recording of business transactions, commonly known as 'book-keeping". The accounting concepts and procedures, in use today for systematic recording of business transactions have their origin in the practices employed by merchants in Italy during the 15th century. The Italian method which specifically known as 'double entry system' was later adopted by other European countries during the 19th century. Stewardship accounting, in a sense, is associated with the need of business owners to keep records of their transactions, the property and tools they owned, debts they owed, and the debts others owed them.

Financial Accounting

With the emergence of Joint stock company and the development of large-scale business the financial accounting emerged. This form of business organisation permits a limit to the liability of their members to the nominal value of their shares. This means that the liability of a shareholder for the financial debts of the company is limited to the amount he had agreed to pay on the shares he bought. He is not liable to make any further contribution in the event of the company's failure or liquidation. As a matter of fact, the law governing the operations (or functioning) of a company in any country gives a legal form to the doctrine of stewardship which requires that information be disclosed to the shareholders in the form of annual income statement and balance sheet.

Basically, the statement of profit and loss made during the year of the report; and the balance sheet indicates the assets held by the firm and the monetary claims against the firm. The general unwillingness of the company directors to disclose more than the minimum information required by law and the growing public awareness have forced the governments in various countries of the world to extend the disclosure (of information) requirements.

The importance attached to financial accounting statements can be traced to the need of the society to mobilise the savings and channel them into profitable investments. Investors, whether they are large or small, must be provided with reliable and sufficient information in order to be able to make efficient investment decisions. This is the most significant social purpose of financial accounting.

Cost Accounting

The industrial and commercial revolution in Great Britain presented a challenge to the development of accounting as a tool of industrial management. Costing techniques were developed as guides to management actions. The increasing awareness on the part of entrepreneurs and industrial managers for using scientific principles of management in the wake of scientific management movement led to the development of cost accounting. Cost accounting is concerned with the application of costing principles, methods and techniques for ascertaining the costs with a view of controlling them and assessing the profitability and efficiency of the enterprise.

Management Accounting

The Management Accounting, i.e. the practice of using accounting information as a direct aid to management is a phenomenon of the 20th century, particularly the last 30-40 years. The genesis of modern management with its emphasis on detailed information for decision-making provides a tremendous impetus to the development of management accounting.

The Management accounting is concerned with the preparation and presentation of accounting and controlling information in a form which assists management in the formulation of policies and in decision-making on various matters connected with routine or non-routine operations of business enterprise. It is through the techniques, of management accounting that the managers are supplied with information which they, need for achieving objectives for which they are accountable. Management accounting has thus shifted the focus of accounting from recording and analysing financial transactions to using information for decisions affecting the future.

Social Responsibility Accounting

Social Responsibility Accounting owes the birth to social awareness noticeable since last four decades in the development of accounting. Social responsibility accounting widens the scope of accounting by considering the social effects of business decisions, in addition to the economic effects. Several social scientists, statesmen and social workers all over the world have been drawing the attention of their governments and the people in their countries to the dangers posed to environment and ecology by the uncontrolled industrial growth. The role of business in society is increasingly coming under greater scrutiny. There is a growing feeling that the concepts of growth and profit as measured in traditional balance sheets and income statements are too narrow to reflect the social responsibility aspects of a business.

Human Resource Accounting

In the year 1964 first attempt was made to include figures on human capital in the balance sheet, which later came to be known as Human Resource Accounting. However there had been a great socio-economic shift in the 1990's with the emergence of "Knowledge Economy", a distinctive shift towards recognition of human and intellectual capital in contrast to physical capital. Human Resource Accounting is a branch of accounting which seeks to report and emphasis the importance of human resources (knowledgeable, trained, loyal and committed employees) in a company's earning process and total assets. It is concerned with "the process of identifying and measuring data about human resources and communicating this information to interested parties". In simple words it involves accounting for investment in people and replacement costs as well as accounting for the economic values of people to an organisation. Generally the methods used for valuing and accounting of human resources are either based on costs or on economic value of human resources.

Inflation Accounting

The Inflation Accounting is concerned with the adjustment in the value of assets (current and fixed) and of profit in the light of changes in the price level. In a way, it is concerned with the overcoming of limitations that arise in financial statements on account of the cost assumption (that is recording of the assets at their historical or original cost) and the assumption of stable monetary unit It thus aims at correcting the distortions in the reported results caused by price level changes. Generally, rising prices during inflation have the distorting influence of overstating the profit. Various approaches have been suggested to deal with this problem.

Check Yours Progress

Q.1. What is Stewardship Accounting?

Q.2. Define Human Resource Accounting.

1.5 ACCOUNTING AS AN INFORMATION SYSTEM

The accounting involves a series of activities linked with each other, beginning with the collecting, recording, analysing and evaluating the data, and finally communicating information to its users. Information has no meaning unless it is linked with a certain purpose.

Accounting as a social science can be viewed as an information system since it has all the features of a system. It has its inputs (raw data), processes (men and equipment), and outputs (reports and information). If we consider accounting as an information system, then we are in a position to make some important observations.

Several groups of people who have a stake in a business organization are managers, shareholders, creditors, employees, customers, etc. Additionally, the community at large has economic and social interest in the activities of such organisations. This interest is expressed at the national level by the concern of government in various aspects of the firms' activities, such as their economic well-being, their contribution to welfare, their part in the growth of the national product, to mention only a few examples.

Investors and Shareholders

Shareholders and other investors have invested their wealth in a business enterprise; they are interested in knowing periodically about the profitability of the enterprise, the soundness of their investment and the growth prospects of the enterprise.

Suppliers and Creditors

The Creditors and suppliers may be short-term or long-term lenders. Short-term creditors include suppliers of materials, goods or services. They are normally known as trade creditors. Long-term creditors are those who have lent money for a long period, usually in the form of secured loans. The main concern of the creditors is focused on the creditworthiness of the firms and its ability to meet its financial obligations. They are therefore concerned with the liquidity of the firms, its profitability and financial soundness.

Workers and Employees

The view that business organisations exist to maximise the return to shareholders has been undergoing change as a result of social changes. A broader view is taken today of economic and social role of management. The importance of harmonious industrial relations between management and employees cannot be overemphasized. The employees have a stake in the outcomes of several managerial decisions is recognised.

Government

In a mixed economy it is considered to be the responsibility of the Government to direct the operation of the economic system in such a manner that it subserves the common good. Controls and regulations on the operations of private sector enterprises are the hallmark of mixed economy. Several government agencies collect information about various aspects of the activities of business organisations. Much of this information is a direct output of the accounting system, for example, levels of outputs, profits, investments, costs, and taxes, etc. All this information is very important in evolving policies for managing the economy.

Owner and Management

Organisations may or may not exist for the sole purpose of profit. However, informational needs of the managers of both kinds of organisations are almost the same, because the managerial process i.e., planning, organising and controlling is the same. All these functions have one thing in common and it is that they are all concerned with making decisions which have their own specific information requirements.

Public and Consumers

Consumers organisations, media, welfare organisations and public at large are also interested in condensed accounting information in order to appraise the efficiency and social role of the enterprises in different sectors of the economy, that is, what levels of profits and outputs are being achieved, in what way the social responsibility is being discharged and in what manner the growth is being planned by the enterprises in accordance with the national priorities etc.

1.6 ROLE AND ACTIVITIES OF AN ACCOUNTANT

Now we will discuss what the activities of an accountant are. In order to answer this question, the following points are important:

(i) An accountant is one who is engaged in accounts-keeping.

(ii) An accountant is a functionary who aids control.

(iii) An accountant keeps the conscience of an organisation.

(iv) An accountant is a professional whose primary duties are concerned with information management for internal and external use.

(v) An accountant is a fiscal adviser.

(vi) An accountant produces an income statement and a balance sheet for an accounting period and maintains all supporting evidence and classified facts that lead to the final accounting statements.

(vii) An accountant verifies, authenticates, and certifies the accounts of an entity.

1.7 ACCOUNTING PERSONNEL

All over world there is hardly any organisation which does not have an accountant. His role is all pervasive and he is involved in a wide range of activities, particularly in a large and complex organisation. The exact duties of an accountant might differ in different organisations. However, a broad spectrum of responsibilities can be identified.

The accounting personnel can be broadly divided into two categories, those who are in public practice and those who are in private employment. The accountants in public practice offer their services for conducting financial and or cost audit. As such, they are known as auditors. The auditor examines the books of account and reports on the balance sheet and profit and loss account of the company as to whether they give a true and fair view of the state of affairs of the company and its profit respectively. The auditor in a company is appointed by the shareholders to whom he reports. Public accountants are generally members of professional bodies like the Institute of Chartered Accountants of India or the Institute of Cost and Works Accountants of India.

The employed Accountants in various business or non-business organizations have to perform a variety of accounting and management control functions. Accountants at higher levels generally belong to professional accounting bodies but those who are at lower levels need not be so. Accounting chiefs in different organisations, depending upon their nature of work, are variously designated as finance officers or internal **auditors** or chief accounts officers, etc. The term 'controller' as the head of the accounting and finance function is not very popular in India but of late it has been catching up.

Internal Auditor: An audit employee of the organisation in contrast to an external auditor who is paid a fee for his services does not get any extra remuneration for his services. The internal auditor is responsible for performing monitoring activities and other services, including designing and operating the system of internal control, auditing the data reported to the directors of the company, and assisting external auditors.

A continuous verification of entries appearing in the books of account with the original vouchers and proper accounting of asset is included in internal audit. Further, it attempts to ensure that the policies and procedures regarding financial matters are being complied with. Internal auditing is also concerned with administering the system of internal check so that mistakes, unintentional or intentional, are prevented from taking place.

Controller: Controller- the other name for Chief Accountant- is usually the head of the whole area of accounting, including internal audit. He is overall in - charge of all the activities comprising financial accounting, cost accounting, management accounting, tax accounting etc. He exercises authority both for accounting within the organisation and for external reporting. The external reports include reports to government revenue collecting and regulatory bodies, such as Company Law Board and Income Tax Department.

Treasurer: The person who is the custodian and manager of all the cash and near-cash resources of the firm. The treasurer handles credit reviews and sets policy for collecting receivables (debtors of the firm to whom the firm has sold goods or services) He also handles relationships with banks and other lending or financial institutions.

Finance Officer: In business, finance is like the life blood. Procuring financial resources and their judicious utilization are the two important activities of financial management. Financial management includes three major decisions: investment decision, financing decision and dividend decision. Investment decision is perhaps the most important decision because it involves allocation of resources. It is concerned with future which being uncertain involves risk. How the firm is allocating its scarce resources and is planning growth will largely determine its value in the market place. Financing decision is concerned with determining the optimum financing mix or capital structure. It examines the various methods by which a firm obtains short-term and long -term finances through various alternative sources. Dividend decisions are related with allocation of net profits into dividend and retained earnings.

1.8 NATURE OF ACCOUNTING FUNCTION

Basically accounting is a service function. The chief of accounting department holds a staff position except within his own department where he exerts authority. This is in contradiction to the roles played by production or marketing executives who hold line authority. The role of the accountant is advisory in character. He works through the authority of the chief executive. The accounts and or finance department(s) do not exercise direct authority over line departments. In decentralised structure with a number of units and divisions, the accounting executive however exercise what is known as the functional authority over all the accounting staff deployed in different segments.

The role of the accountant is of two facets. For the top managers he works as a 'score-keeper' and for middle and lower level managers he acts as 'helper'. The watchdog role is usually performed through 'score-keeping' task of accounting and reporting to all levels of management. The 'helper' role is usually performed through the task of directing manager’s attention to problems. Mutual understanding and rapport between the accountant and the manager, in the tasks of attention-directing and problem-solving can be enhanced if accountant and his staff frequently interact with the line managers and guide them in matters concerned with preparation of budgets and control documents with which they might not be conversant. This will instill confidence among line managers regarding the reliability of reports.

1.9 ORGANISATION FOR ACCOUNTING AND FINANCE

You will note that the person at the helm of affairs the Director (Finance) who is a member of the Board of Directors. Reporting to him may be by one or more general managers. If there is only one General Manager, he may be designated as General Manager (Finance), or General Manager (Finance and Accounts), or Controller or Financial Controller. In a large company four or five Deputy General Managers incharge of different areas like systems and data processing, accounts, finance, internal auditing may report to him. Following the American pattern, a tendency has recently been observed among large companies, especially in the private sector, to designate General Manager (Finance) as President (Finance, or Finance and Accounts) and a Deputy General Manager as Vice-president. Each of these Deputy General Managers is assisted by a number of senior managers who look after different components of similar activities, e.g., financial accounting, tax planning and administration, management auditing, etc.

1.10 SUMMARY

The accounting is the language of business. Accounting is essential for all types of economic activities. It is an important service activity in business and is concerned with collecting, recording, evaluating and communicating the results of past events. The history of accounting development reflects its changing role in response to the changing business and social needs. With the emergence of management accounting, the focus of accountant has been shifting from mere recording of transactions to that of aiding the management in decisions.

Now a days accounting can be perceived as an information system which has its inputs, processing methods and outputs. The usefulness of accounting lies in its capacity to provide information to various stakeholders in business so that they could arrive at the correct decisions.

The top accounting personnel are designated with various nomenclatures. The practice in this regard differs in different companies. The organisational setting for accounting and finance function may also vary in different organisations, depending upon their peculiarities, nature and size of business, technology and structural form. At the helm of affairs is usually the Director of Accounts and Finance who is a member of the Board of Directors. He is assisted by a General Manager who in turn is helped by Deputy General Managers incharge of various sub-functions like, accounts, finance, internal audit, and data processing, etc. Each of the sub-functions is further sub-divided into activities which are the responsibility of a senior manager.

1.11 KEY WORDS

Accounting: Accounting is the process of identifying, measuring and communicating economic information.

Accountant: Accountant is a professional who is responsible for the processing of financial data for score-keeping, attention-directing and problem-solving purposes.

Controller: Controller of the management accountant is a staff-functionary who uses accounting information for management planning and control.

Auditive work of an accountant comprises authentication of accounting statements.

Store-keeping: Store keeping is the process of data accumulation or record-keeping which enables interested parties (internal and external) to ascertain how the organisation is performing.

Information system: It is a system, sometimes formal and sometimes informal, for collecting, processing, and communicating data at the most relevant time to all levels of management. The data flowing through the system is helpful to managers for decision-making in the areas of planning and control, or is otherwise needed for financial reporting required under the laws. An essential requirement of information system is feedback, i.e. communicating the results of performance to operating managers for needed modifications.

External reporting is the production of financial statements for the use by external interest groups like, shareholders and government.

1.12 SELF ASSESSMENT QUESTIONS /EXERCISE

1. "Accounting is the language of Business " Elaborate it.

2. "Financial Accounting is an extension of Stewardship Accounting". Comment.

3. What new developments in Accounting have taken place over the past 20-25 years? Examine the main factors which have effected such developments.

4. State the group of persons having an interest in a business organisation and examine the nature of their information needs.

5. Discuss the role of accountants in modern business organisations.

6. How can accounting reports, prepared on a historical basis after the close of a period, be useful to managers in directing the activities of a business?

7. Distinguish management accounting from financial accounting.

8. How does the accountant help in the planning and control process of a large commercial organisation?

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UNIT-2 ACCOUNTING CONCEPTS

Structure

2.1 INTRODUCTION

With the increase in the size and complexity of business it has become quite imperative that certain rules should be followed in accounting. You find that these rules are of more value to you if they are standardised. When you are driving your vehicle, you keep to the left. You are in fact following a standard traffic rule. Without the drivers of vehicles adhering to this rule, there would be much chaos on the road. A similar principle applies to accounting which has evolved over a period of several hundred years, and during this time certain rules and conventions have come to be accepted as useful. If you want to understand and use accounting reports-the end-product of an accounting system-you must be familiar with the rules and conventions behind these reports.

2.2 OBJECTIVES

After studying this unit you would be able to understand the:

- Concept of Accounting Assumption.
- Concept of Accounting Principles and their Limitations.
- Concept of Accounting Concepts.
- Concept of Accounting Conventions.

2.3 ACCOUNTING ASSUMPTIONS

The rules and conventions of accounting are commonly referred to as the conceptual framework of accounting. As with any discipline or body of knowledge, some underlying theoretical structure is required if a logical and useful set of practices and procedures are to be developed for reaching the goals of the profession and for expanding knowledge in that field. Such a body of principles is needed to help answer new questions that arise. No profession can thrive in the absence of a theoretical framework. According to Hendriksen (1977), accounting theory may be defined as logical reasoning in the form of a set of broad principles that (i) provide a general frame of reference by which accounting practice can be evaluated, and (ii) guide the development of new practices and procedures. Accounting theory may also be used to explain existing practices to obtain a better understanding of them. But the most important goal of accounting theory should be to provide a coherent set of logical principles that form the general frame of reference for the evaluation and development of sound accounting practices.

Fundamental accounting assumptions

The Indian accounting standard AS 1 Disclosure of Accounting Policies talks about three fundamental accounting assumptions ---- going concern, consistency and accrual.

A. Going Concern

The enterprise is normally viewed as a going concern that is, as continuing in operation for the foreseeable future. It is assumed that the enterprise has neither the intention nor the necessity of liquidation or of curtailing materially the scale of the operations.

While preparing financial statements, management shall make an assessment of an entity's ability to continue as a going concern. An entity shall prepare financial statements on a going concern basis unless management either intends to liquidate the entity or to cease trading, or has no realistic alternative but to do so. The management may be aware of material uncertainties that create doubt on the ability of the entity's continuance as going concern. While pursuing going concern basis, it is necessary to disclose those uncertainties.

B. Consistency

It is assumed that accounting policies are consistent from one period to another.

Whereas IAS 1 Presentation of Financial Statements (which is part of IFRSs) talks about Consistency of presentation, Presentation and classification of items of financial statement should be maintained from one period to another. The change in presentation and classification is made when there is a significant change in the nature of the entity's operations. The change can also be made when required by a standard or an interpretation. This is to facilitate comparison of financial information over the accounting periods.

Example ABC Ltd. is a listed company. Its share price as on 31.03.2007 was Rs. 400 and as on 30.11.2008 was Rs. 600, whereas as on 31.03.2008 it was nosedived to Rs. 270 because of general market downturn. Should the going concern status of the company be reviewed?

C. Accrual

Revenues and costs are accrued, that is, recognised as they are earned or incurred (and not as money is received or paid) and recorded in the financial statements of the periods to which they relate.

Example X Ltd. is preparing income statement for the year 2008. The company collected ` 300 million during the year on account of sales of goods of which Rs. 100 million for sales during 2007. Out of sales of 2008, amount yet to be collected is ` 90 million. What amount of sales should the company recognise as income of 2008?

Solution : Sales for 2008.

(i)	Collection against sales of 2008	Rs. 200 million
(ii)	Amount outstanding	Rs. 90 million
	Total	**Rs. 290 million**

2.4 ACCOUNTING PRINCIPLES, ITS IMPORTANCE AND LIMITATIONS

Definition and Explanation

Accounting is the language of business. Affairs of a business should be understood by others as well as by those who own or manage it through accounting information which has to be suitably recorded, classified, summarized and presented.

In order to make this language to convey the same meaning to all people, it is necessary that it should be based on certain uniform scientifically laid down standards. These standards are termed as *accounting principles*. Accounting principles may be defined as those rules of action or conduct which are adopted by the accountants universally while recording accounting transactions. In the absence of common principles there will be *a chaotic* situation and every accountant will have his own principles. Not only the utility of accounts will be less but these will not be comparable even in the same business. Therefore, it becomes essential that common principles should be followed for measuring business revenues and expenses.

The word 'principles' is used to mean a "general law or rule adopted or professed as a guide to action, a settled ground or basis of conduct or practice". You will note that this definition describes a principle as a general law or rule that is to be used as a **guide to action.** This implies that accounting principles do not prescribe exactly how each detailed event occurring in business should be recorded. Consequently, there are several matters in accounting practice that may differ from one company to another.

Accounting principles are man-made. They are accepted because they are believed to be useful. The general acceptance of an accounting principle (or for that matter any principle) usually depends on how well it meets the three criteria of **relevance, objectivity,** and **feasibility.** A principle is relevant to the extent that it results in meaningful or useful information to those who need to know about a certain business. A principle is objective to the management that the information is not influenced by the personal bias or judgement of those who furnished it. Objectivity connotes reliability or trustworthiness which also means that the correctness of the information reported can be verified. A principle is feasible to the extent that it can be implemented without undue complexity or cost.

Essential Features of Accounting Principles

Accounting principles are accepted if they satisfy the following norms:

A. Usefulness

A principle will be relevant only if it satisfies the needs of those who use it. The accounting principles should be able to provide useful information to its users otherwise it will not serve the purpose.

B. Objectivity

A principle will be said to be objective if it is based on facts and figures. There should not be a scope for personal bias. If the principles can be influenced by the personal bias of users, it will not be objective and its usefulness will be limited.

C. Feasibility

The accounting principle should be practicable. The principles should be easy to use otherwise their utility will be limited.

Importance of Accounting Principles

All over the world, accountants follow certain accounting principles and these principles along make them generally acceptable. If accountants start maintaining accounts without following the accounting principles, users would lose confidence in accounting records. These principle provide right direction for maintaining accounting records and these principles make accounting procedures universally acceptable. This brings about uniformity in accounting at international level. Often, a comparative study of accounts of various companies is needed and for that propose, if accounts are prepared on the basis of generally accepted principles, there would be no problem.

In case of a company, where the owners or shareholders generally, do not actively participate in the management of the company owned by them, it becomes quite necessary that accounts are maintained correctly based on accounting principles. In case, these principles are not followed, they would not be able to get correct picture of either, the operation of the company or its financial position.

Thus, uniformity in the procedure for maintaining accounting records helps in understanding them and the users of accounting records in many ways.

Limitations of Accounting Principles:

Inspite of the significance of accounting principles as mentioned earlier, they are not free from limitations. Some of their important limitations may be mentioned briefly as follows:

These principles cannot be verified through experiments or investigations. We have not yet been able to prepare the list of these principles. They are still evolving. We find disagreements among the accountants about these principles. Various business concerns, in practice, follow different principles in the similar situations. These principles do not take into account non-monetary facts, howsoever, important they may be. It has been stated that principles would generally suggest universality and a degree of permanence which cannot exist in a human-service institution such as accounting. Accounting principles are often affected by the various environmental factors, professional bodies, and framework of accounting theory; one is confronted with a series of problem arising from differences in terminology. A number of words and terms have been used by different writers to express and explain the same idea or notion. Thus, confusion abounds in the literature insofar as the theoretical framework is concerned. The various terms used for describing the basic ideas are: concepts, postulates, propositions, basic assumptions, underlying principles, fundamentals, conventions, doctrines, rules, etc. Although each of these terms is capable of precise definition, general usage by the profession of accounting has served to give them loose and overlapping meanings. The same idea has been described by one author as a concept and by another as a convention. To take another instance, the idea implied in Conservatism has been labeled by one author as a (modifying) convention, by another as a principle and yet by another as a doctrine. The wide diversity in terminology to express the basic framework can only serve to confuse the learner.

Without falling into the trap of this terminological maze, we are explaining below some widely recognised ideas and we call all of these concepts. We do feel, however, that some of these ideas have a better claim to be called 'concepts', while the rest should be called 'conventions'. Fundamental accounting concepts are broad general assumptions with underline the periodic financial accounts of business enterprises. The reason why some of these ideas should be called concepts is that they are basic assumptions and have a direct bearing on the quality of financial accounting information. The alteration of any of the basic concepts (or postulates) would change the entire nature of financial accounting.

Check Your Progress A

Q. 1. What are the essential features of accounting principles?

Q.2. State three fundamental accounting assumptions.

2.5 ACCOUNTING CONCEPTS

The following are the important accounting concepts:

1. Business Entity Concept

2. Going Concern Concept.
3. Money Measurement Concept
4. Cost Concept
5. Dual Aspect Concept
6. Accounting Period Concept
7. Matching Concept
8. Realisation / Realization Concepts

The explanation of these concepts is as follows:

2.5.1. BUSINESS ENTITY CONCEPT

In accounting, business is treated as separate entity from its owners. Accounts are prepared to give information about the business and not about those who own it; a distinction is made between business transaction and personal transactions. Without such a distinction, the affairs of the business will be mixed up with the private affairs of the proprietor and the true picture of the firm will not be available. The 'Business' and 'owner' are taken as two separate entities. The accountant is interested to record transactions relating to business only. The private transactions of the owner will be recorded separately and will have no bearing on the business transactions. All the transactions of the business are recorded in the books of the business from the point of view of the business as an entity and even the proprietor is treated as a creditor to the extent of his capital.

The concept of separate entity is applicable to all forms of business organizations. For example, in case of a sole proprietorship business or partnership business, though the sole proprietor or partners are not considered as separate entities in the eyes of law, but for accounting purposes they will be considered as separate entities. In case of Joint stock company, the business has a separate legal entity than the shareholders. The coming and going shareholders do not affect the entity of the business. Thus, the distinction between owner and the business unit has helped accounting in reporting profitability more objectively and fairly. It has also led to the development of ‘responsibility accounting' which enables us to find out the profitability of even the different sub-units of the main business.

2.5.2. GOING CONCERN CONCEPT

According to **going concern concept** it is assumed that the business will exist for a long time to come. Transactions are recorded in the books keeping in view the going concern aspect of the business unit. A firm is said to be going concern when there is neither the intention nor necessity to wind up its affairs. In other words, it should continue to operate at its present scale in the future. On account of this concept the fixed assets are shown in the balance sheet at a diminishing balance method i.e., going concern value. There is no need to show assets at market value because these have been purchased for use in future and earn revenues and not for sale purpose. If the business is not to continue then market value will have significance. Since business is to continue, fixed assets will be shown at cost less depreciation basis. It is due to this concept that the fixed assets are depreciated on the basis of their expected life than on the basis of market value. The concept also necessitates distinction between expenditure that will render benefit over a long period and that whose benefit will be exhausted quickly, say within one year. The going concern concept also implies that existing liabilities will be paid at maturity.

2.5.3. MONEY MEASUREMENT CONCEPT

Accounting records only those transactions which can be expressed in terms of money. Transactions or events which cannot be expressed in money do not find place in the books of accounts though they may rather useful for the business. For example, if a business has got a team of dedicated and trusted employees, it is definitely an asset to the business, but since their monetary measurement is not possible, they are not shown in the books of' business. It should be remembered that money enables various things of diverse nature to be added up together and dealt with. The use of a building and the use of clerical service can be aggregated only through money values and not otherwise.

2.5.4. COST CONCEPT

This concept is closely related to the going concern concept. According to this concept, an asset is ordinarily recorded in the books at the price at which it was acquired i.e., at its cost price. This cost serves the basis for the accounting of this asset during' the subsequent period. The 'cost' should not be confused with 'value'. It must be remembered that as the real worth of the assets changes from time to time, it does not mean that the value of such an asset is wrongly recorded in the books. The book values of the assets as recorded do not reflect their real value. They do not signify that values noted therein are the values for which they can be sold. Though the assets are recorded in the books at cost, in course of time, they are reduced in value on account of depreciation charges. The idea that the transactions should be recorded at cost rather than at a subjective or arbitrary value is known as cost concept. With the passage of time, the market value of fixed assets like land and buildings vary greatly from their cost. These changes in the value are generally ignored by the accountants and they continue to value them in the balance sheet at historical cost. The principle of valuing the fixed assets at cost and not at market value is the underlying principle in cost concept. According to them the current values alone will fairly represent the cost to the entity. The cost principle is based on the principle of objectivity. There is no room for personal assessment in showing the figures in accounting records. If subjectivity is followed in records the same assets will be valued at different figures by different individual. Everybody will have his own views about various assets. The cost concept is helpful in making truthful records. The records become more reliable and comparable.

2.5.5 DUAL ASPECT CONCEPT

This is the basic concept of accounting. Modern accounting system is based on dual aspect concept. Dual concept may be stated as "for every debit, there is a credit". Every transaction should have two sided effect to the extent of same amount. For example, if A starts a business with a capital of Rs. 10,000, then there are two aspects of the transaction. On the one hand the business has assets of Rs. 10.000 while on the other hand the business has to pay to the proprietor a sum of Rs.10,000 which is taken as proprietor's capital. This expression can be shown in the form of following equation:

Capital (Equities)	=	Costs (Assets)
10,000	=	10,000

The term 'assets' denotes the resources owned by a business while the term 'equities' denotes the claims of various parties against the assets. Equities are of two types. They are owners equity and outsiders equity**.** Owner's equity (or capital) is the claim of the owner's against the assets of the business while outsiders' equity (liabilities) is the claim of outside parties against the assets of the business. Since all assets of the business are claimed by someone (either owners or outsiders), the total of assets will be equal to total of liabilities. Thus:

	Equities	=	Assets		
OR	Liabilities	+	Capital	=	Assets

Suppose if the business borrows Rs.5000 from a bank, dual aspect of this transaction will be

Capital + Liabilities	=	Assets
10,000 +5,000	=	15,000

Thus the accounting Equation states that at any point of time the assets of any entity must be equal (in monetary terms) to the total of owner's equity and outsider's liabilities. As a mater of' fact the entire system of double entry accounting is based on this concept.

2.5.6. ACCOUNTING PERIOD CONCEPT

TESLA-016

According to this concept, the life of the business is divided into appropriate segments for studying the results shown by the business after each segment. Since the life of the business is considered to be indefinite (according to going concern concept) the measurement of income and studying financial position of the business according to the above concept, after a very long period would not be helpful in taking proper corrective steps at the appropriate time. It is, therefore, absolutely necessary that after each segment or time interval the businessman must stop and see, how things are going on. In accounting such a segment or time interval is called accounting period. It is usually of a year.

At the end of each accounting period an income statement/profit & loss Account and a Balance Sheet are prepared. The income statement discloses the profit or loss made by the business during the accounting period while Balance Sheet discloses the financial position of the business as on the last day of the accounting Period. While preparing these statements a proper distinction has to he made between capital and mid revenue expenditure.

2.5.7. MATCHING CONCEPT

The aim of business is to earn profit. In order to ascertain the profit, the costs (expenses) are matched to revenue. The difference between income from sales and costs of producing the goods will be the profit. When business is taken as a going concern then it becomes necessary to evaluate the performance periodically.

A correct statement of income requires a distinction between past, present and future expenditures. A distinction between capital and revenue expenditure is also necessary. The revenues and costs of same period are matched. In other words, income made by the business during a period can be measured only when the revenue earned during a period is compared with the expenditure incurred for earning that revenue. The question when the payment was received or made is irrelevant.

2.5.8. REALISATION CONCEPT

This concept emphasizes that profit should be considered only when realised. The question is at what stage profit should be deemed to have accrued? Whether at the time of receiving the order or at the time of execution of the order or at the time of receiving the cash? For answering this question the accounting is in conformity with the law and recognises the principle of law i.e., the revenue is earned only when the goods are transferred. It means that profit is deemed to have accrued when property or goods passes to buyer, viz., when sales are made.

Check Your Progress B

Q.1. A Co. collected ` 80 lakhs during 2014 on account of sales of goods. Out of that ` 20 lakhs were received for sales made during 2013. At the end of 2014, ` 10 lakhs is yet to be received for sales made during 2014. What amount of sales should be recognized as income of 2014?

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Q.2. State the accounting equation.

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Q.3. What is money measurement concept?

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2.6 ACCOUNTING CONVENTIONS

The term "conventions" includes those customs or traditions which guide the accountants while preparing the accounting statements. The following are the important accounting conventions.

1. Convention of Disclosure
2. Convention of Materiality
3. Convention of Consistency
4. Convention of Conservatism

2.6.1 Convention of Disclosure:

The disclosure of all significant information is one of the important accounting conventions. It implies that accounts should be prepared in such a way that all material information is clearly disclosed to the reader. The term disclosure does not imply that all information that any one could desire is to be included in accounting statements. The term only implies that there is a sufficient disclosure of information which is of material in trust to proprietors, present and potential creditors and investors. The idea behind this convention is that anybody who wants to study the financial statements should not be misled. He should be able to make a free judgment. The disclosures can be in the way of foot notes within the body of financial statements, in the minutes of meeting of directors etc.

2.6.2. CONVENTION OF MATERIALITY

It refers to the relative importance of an item or event. According to this convention only those events or items should be recorded which have a significant bearing and insignificant things should be ignored. This is because otherwise accounting will be unnecessarily over burden with minute details. There is no formula in making a distinction between material and immaterial events. It is a matter of judgment and it is left to the accountant for taking a decision. It should be noted that an item material for one concern may be immaterial for another. Similarly, an item material in one year may not be material in the next year.

2.6.3. CONVENTION OF CONSISTENCY

This convention means that accounting practices should remain unchanged from one period to another. For example, if stock is valued at "cost or market price whichever is less;" this principle should be followed year after year. Similarly, if depreciation is charged on fixed assets according to diminishing balance method, it should be done year after year. This is necessary for the purpose of comparison. However, consistency does not mean inflexibility. It does not forbid introduction of improved accounting techniques. If a change becomes necessary, the change and its effect should be stated clearly.

2.6.4. CONVENTION OF CONSERVATISM

This convention means a caution approach or policy of "play safe". This convention ensures that uncertainties and risks inherent in business transactions should be given a proper consideration. If there is a possibility of loss, it should be taken into account at the earliest. On the other hand, a prospect of' profit should be ignored up to the time it does not materialise. On account of this reason, the accountants follow the rule 'anticipate no profit but provide for all possible losses'. On account of this convention, the inventory is valued 'at cost or market price whichever is less.' The effect of the above is that in case market prices has gone down then provide for the 'anticipated loss' but if the market price has gone up then ignore the 'anticipated profits.' Similarly a provision is made for possible and doubtful debt out of current year's profits.

Critics point out that conservatism to an excess degree will result in the creation of secrets reserves. This will be quite contrary to the doctrine of disclosure.

2.7 SUMMARY

Accounting as a field of study in its developmental process has evolved a theoretical framework consisting of principles or concepts over period of time. These concepts enjoy a wide measure of support of the accounting profession; that is why they are known as Generally Accepted Accounting Principles (GAAP). Several concepts and their implications for business and information users were discussed in this unit. In accounting various concepts, assumptions, principles, conventions and doctrines are used.

Since the accounting principles are broad guidelines for general application, they permit a wide variety of methods and practices. The lack of uniformity in accounting practice makes it difficult to compare the financial reports of different companies. Moreover, the multiplicity of accounting practices makes it possible for management to conceal economic realities by selecting those alternative presentations of financial result which allow earnings to be manipulated. The financial statements prepared under such conditions, therefore, may have limited usefulness for several users of information. This problem has been recognised all over the world and various professional bodies are engaged in the task of standardising accounting practices. There is a movement towards consensus building even at the international level. Such professional bodies, in fact, first look at the practices used by practising accountants. They then try to obtain a refinement of those practices by a process of consensus. It is in this manner that the theory of accounting is built In India also, some headway has been made by establishing thirty two standards for accounting practice. Conventions include those customs or traditions which guide the accountants while preparing accounting statements.

2.8 KEY WORDS

Consistency *concept* envisages that accounting information *should* be prepared on a consistent basis form period of period, and within periods there should be consistent treatment of similar items.

Conservatism concept forbids the inclusion of unrealised gains but advocates provision for possible losses.

Entity concept separates the business from owner(s), from the standpoint of accounting.

Going concern concept refers to the expectation that the organisation will have indefinite life. This assumption has an important bearing on how the assets are to valued.

Materiality concept emphasizes that events of relatively small importance need not be given a detailed or theoretically correct treatment. They may be ignored for separate recording.

Money measurement concept ignores intangibles like employee loyalty and customer satisfaction as they cannot be expressed in money terms. It also assumes records on the basis of a stable monetary unit.

2.9 ANSWERS TO CHECK YOUR PROGRESS

A.

1. Usefulness, objectivity, feasibility;
2. Going Concern, Consistency, accrual

B.

1. ` 70 lakhs
2. Capital + liabilities = Assets

2.10 SELF-ASSESSMENT QUESTIONS/ EXERCISE

1. Examine the role of accounting concepts in the preparation of financial statements.
2. Is it possible to give a true or a fair view of a company's position using accounting information'?
3. Do you find any of the accounting concepts conflicting with each other? Give examples.

2.11 FURTHER READINGS

Maheshwari, S.N. and S.K. Maheshwari, 2000. *Financial Accounting*, Vikas Publishing House: New Delhi.

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Study Materials MS-04 Block-1, IGNOU, New Delhi.

UNIT-3 ACCOUNTING STANDARDS

Structure

3.1 INTRODUCTION

Under the global business scenario, the residents of the business community are badly in need of a common accounting language that should be spoken by all of them across the globe. A financial reporting system of global standard is a pre-requisite for attracting foreign as well as present and prospective investors at home alike that should be achieved through harmonization of accounting standards.

Accounting Standards are the policy documents (authoritative statements of best accounting practice) issued by recognized expert accountancy bodies relating to various aspects of measurement, treatment and disclosure of accounting transactions and events.

Generally Accepted Accounting Principles (GAAP) are stated to be norms of accounting policies and practices by way of codes or guidelines to direct as to how the items, which go to make up the financial statements should be dealt with in accounts and presented in the annual accounts.

The aim of setting standards is to bring about uniformity in financial reporting and to ensure consistency and comparability in the data published by enterprises.

3.2 OBJECTIVES

After studying this unit you would be able to understand:

- The concept of accounting standards
- The need of Accounting Standard

- The attempts made towards standardisation
- And a brief description of Indian Accounting Standards, their objective and procedures.

3.3 NEED OF ACCOUNTING STANDARDS

Accounting standards are used as one of the main compulsory regulatory mechanisms for preparation of general purpose financial reports and subsequent audit of the same, in almost all countries of the world. Accounting standards are concerned with the system of measurement and disclosure rules for preparation and presentation of financial statements. They appear with a set of authoritative statements of how particular types of transactions, events and other costs should appear. Basically the information and data contained in published financial statements is of particular importance to external users, such as shareholders and investors. Without such information they would not be able to take right decisions about their investments. Like in several other countries, Parliament in India has specified in the Companies Act the type and minimum level of information which companies should disclose in financial statements. It is the responsibility of the accounting profession to ensure that the required information is properly presented. It is evident that there should not be too much discretion to companies and their accountants to present financial information the way they like. In other words, the information contained in financial statements should conform to carefully considered standards. Public confidence in accounting information contained in financial statements will grow if they are satisfied as to the logic, consistency and fairness of the figures shown therein. For instance, a company could incur a loss and still pay dividends by manipulating the loss into a profit. In the long run this course may have a disastrous effect on the company and its investors. Just to appreciate the function of accounting standards by relating them to the basic purpose of financial statements which is the communication of information affecting the allocation of resources. Ideally, such information should make it possible for investors to evaluate the investment opportunities offered by different firms and allocate scarce resource to the most efficient ones. In theory, this process should result in the capital distribution of resources within the economy and should maximise the potential benefit to society. Unless there are reasonably appropriate standards, neither the purpose of the individual investor nor that of the nation as a whole can be served. The purpose is likely to be served if the accounting methods used by different firms for presenting information to investors allow correct comparisons to be made. For example, they should not permit a company to report profits which result simply from a change in accounting methods rather than from increase in efficiency. If companies were free to choose their accounting methods in this way, the consequences might be that deliberate distortions are introduced, leading eventually to misapplication of resources in the economy. The relatively less efficient companies will be able to report fictitious profits, and as a result scarce capital of society will be diverted away from the more efficient companies which have adopted more strict and consistent accounting methods.

Generally Accepted Accounting Principles are usually developed by professional accounting bodies like American Institute of Certified Public Accountants (AICPA) and Institute of Chartered Accountants of India (ICAI). In developing such principles, however, the accounting profession has to reflect the realities of social, economic, legal and political environment in which it operates. Besides academic research, regulatory and tax laws of the government e.g., Companies Act, 2013, Income Tax Act, 1961 etc., in a large measure, influence the formulation of acceptable accounting principles. Stock exchanges and other regulatory agencies like Controller of Capital Issues (CCI) have laid down rules for disclosure and extent of accounting information. The environment in which business operates, undergoes constant changes as a result of changes in economic and financial policies of the government and changes in the structure of business, continued evaluation of the relevance of generally accepted accounting principles is required. In this sense, the principles of accounting are not ever-lasting truths. You will appreciate that it is the development of relevant accounting principles in tune with the present day needs of the society that would make it possible for the business enterprises to develop financial statements which would be acceptable and of value to the end users.

Check Your Progress

Q.1. What is accounting standard?

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Q.2. What is the purpose behind accounting standard?

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3.4 GROWTH TOWARDS STANDARDISATION IN UK, USA & INDIA

The Institute of Chartered Accountants in England and Wales began making recommendations since 1942, the real progress started with the establishment of Accounting Statements Committee (ASC) by the Institute in 1969 in the wake of public criticism of financial reporting methods which permitted diverse practices. As a result of diversity in practices some big investors had suffered heavy losses on their investments in well known companies. The main objective of ASC has been to narrow areas of difference and variety in accounting practices. The procedure used for standardisation is initiated by the issue of an "Exposure Draft" on a specific topic for discussion by accountants and the public at large. Comments made on exposure draft are taken into consideration when drawing up a formal statement of the accounting methods for dealing with that specific topic. The statement is known as a Statement of Standard Accounting Practice (SSAP). Once the statement of standard accounting practice is adopted by the accounting profession (the fact that a statement has been issued by the Institute in itself signifies the acceptance by the profession), any material departure by any company from the standard practice in presenting its financial reports is to be disclosed in that report. So far, nineteen statements of standard accounting practice, in addition to some exposure drafts under consideration, have been issued by the ASC.

Basically the need for evolving standards in the USA was felt with the establishment of Securities Exchange Commission (SEC) in 1933. The SEC is the Government agency to regulate and control the issuance of and dealings in securities of the companies. A research-oriented organisation called the Accounting Principles Boards (APB) was formed in 1957 to spell out the fundamental accounting postulates. The Financial Accounting Standards Board (FASB) was formed in 1973. The FASB pronounces statement from time to time articulating the generally accepted accounting principles. The constant support given by SEC to FASB pronouncements has given considerable credibility to its accounting policy statement. The FASB till 1985 has issued five statement of concepts and eighty-eight statements of financial accounting standards.

Accounting Standards at International Level: In view of the growth of international trade and multinational enterprises, the need for standardization at international level was felt. An international Congress of Accountants was organised in Sydney, Australia in 1972 to ensure the desired level of uniformity in accounting practices. Keeping this in view, International Accounting Standards Committee (IASC) was formed and was entrusted with the responsibility of formulating international standards. All the member countries of IASC resolved to conform to the standards developed by IASC or at least to disclose variations from recommended standards. After its formation in 1973, the IASC has issued 40 international accounting statement to date. Another professional body, the International Federation of accountants (IFAC) was established in 1978.

3.5 ACCOUNTING STANDARDS IN INDIA

Efforts are made to harmonise varying accounting policies and practices currently in use in India, the Institute of Chartered Accountants of India (ICAI) formed the Accounting Standards Board (ASB) in April 1977 which includes representatives from industry and government. In line with the procedure followed in other countries, the preliminary drafts prepared by the study groups and approved by ASB are circulated amongst various external agencies, including the representative bodies of trade, commerce and industry. So far, thirty two standards have been issued by ASB, a brief description of which is provided.

Accounting standards are recommendatory in nature in the initial years. They are recommended for use by companies listed on a recognised Stock Exchange and other large commercial, industrial and business enterprises in the public and private sectors. To understand better way you read all or at least some of these standards in order to get a feel of what these standards are all about. What policies and procedures of accounting these standards aim to standardise and why? Do not worry if you are unable to understand some of the ideas or expressions contained in the standards. You may like to come back to these standards after you have been through all the blocks of this course.

List of Indian Accounting Standards

Institute of Chartered Accountants of India (ICAI) has so far issued thirty two standards framework for the Preparation and Presentation of Financial Statements:

(AS 1) Disclosure of Accounting Policies

(AS 2) Valuation of Inventories

(AS 3) Cash Flow Statements

(AS 4) Contingencies and Events Occurring after the Balance Sheet Date

(AS 5) Net Profit or Loss for the period, Prior Period and Extraordinary Items and Changes in Accounting Policies.

(AS 6) Depreciation Accounting

(AS 7) Accounting for Construction Contracts

(AS 8) Accounting for Research and Development

(AS 9) Revenue Recognition

(AS 10) Accounting for Fixed Assets

(AS 11) Accounting for the Effects and Changes in Foreign Exchange Rates

(AS 12) Accounting for Government Grants

(AS 13) Accounting for Investments

(AS 14) Accounting for Amalgamations

(AS 15) Accounting for Retirement Benefits in the Financial Statement of Employers

(AS 16) Borrowing Costs

(AS 17) Segment Reporting

(AS 19) Leases

(AS 20) Earnings Per Share

(AS 21) Consolidated Financial Statements

(AS 22) Accounting for Taxes on Income

(AS 23) Accounting for Investments in Associates in Consolidated Financial Statements

(AS 24) Discontinuing Operations

(AS 25) Interim Financial Reporting

(AS 26) Intangible Assets

(AS 27) Financial Reporting of Interests in Joint Ventures

(AS 28) Impairment of Assets.

(AS 29) Provisions, Contingent Liabilities and Contingent Assets.

(AS 30) Financial Instruments : Recognition and Measurement

(AS 31) Financial Instruments : Presentations

(AS 32) Financial Instruments : Disclosures.

3.6 SUMMARY

Accounting Standards are the policy documents (authoritative statements of best accounting practice) issued by recognized expert accountancy bodies relating to various aspects of measurement, treatment and disclosure of accounting transactions and events.

As relate to the codification of Generally Accepted Accounting Principles (GAAP). These are stated to be norms of accounting policies and practices by way of codes or guidelines to direct as to how the items, which go to make up the financial statements should be dealt with in accounts and presented in the annual accounts.

The aim of setting standards is to bring about uniformity in financial reporting and to ensure consistency and comparability in the data published by enterprises.

Efforts are made to harmonise varying accounting policies and practices currently in use in India, the Institute of Chartered Accountants of India (ICAI) formed the Accounting Standards Board (ASB) in April 1977 which includes representatives from industry and government. In line with the procedure followed in other countries, the preliminary drafts prepared by the study groups and approved by ASB are circulated amongst various external agencies, including the representative bodies of trade, commerce and industry. So far, thirty two standards have been issued by ASB.

3.7 KEY WORDS

ASB	-	Accounting Standard Board formed in April, 1977
ICAI	-	Institute of Chartered Accountants of India.
GAAP	-	Generally Accepted Accounting Principles.
AICPA	-	American Institute of Certified Public Accountants
SSAP	-	Statement of Standard Accounting Practices.
APB	-	Accounting Principle Boards.
FASB	-	Financial Accounting Standards Board.
ASC	-	Accounting Statements Committee.
IASC	-	International Accounting Standards Committee
IFAC	-	International Federation of Accountants.
AS	-	Accounting Standards.

3.8 SELF ASSESSMENT QUESTIONS

1. What is accounting standards? Explain the purpose of accounting standards in corporate reporting.

2. Explain the attempts made towards standardisation in U.K. & U.S.A.

3. Give a brief description of Accounting Standards adopted in India.

4. Write short notes on (i) GAAP (ii) Need of Accounting standards.

5. Give a complete list of accounting standards as provided by ICAI.

3.9 FURTHER READINGS

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Study Materials MS-04 Block-1, IGNOU, New Delhi.

UNIT-4 ACCOUNTING INFORMATION AND ITS APPLICATIONS

Structure

4.1 INTRODUCTION

All Business enterprises have some common activities. One common activity is the raising of financial resources. These resources can be raised from: Investors, lenders and business own generated profits. Accounting is developed as a system for reporting information to the owners including shareholders and other investors of the business. In this process, accounting has developed into two distinct directions-one dealing with information processing for external uses and the other dealing with information processing for internal (or managerial) uses. The first one is known as financial accounting and the second as managerial accounting. But when we talk about accounting information, we generally look at it in a broader sense to encompass information processing for both internal and external uses. Now we will discuss some illustrative uses of accounting information's.

4.2 OBJECTIVES

After Studying this unit you would be able to understand the:

- Nature of accounting information;
- Major purposes of accounting information;

- Role of information in the control process;
- Uses of earnings information; and
- Uses of information contained in balance sheet.

4.3 PURPOSES OF ACCOUNTING INFORMATION

The accounting information is useful for (1) scorekeeping, (2) attention-directing, and (3) problem-solving. If we ask a question: What precise information should the accountant provide for these purposes? Certainly, the type of informations needed may vary from organisation to organisation. The specific information needs in the actual decision-making process at different organisational levels influence the scope of an accounting information system. Therefore accounting should be viewed as an information system. It helps users in taking better decisions by providing relevant, timely and cost effective information on the financial and operational parameters.

Score-keeping : Basically the score keeping function is one of the primary purposes of accounting information. It deals with the financial health of the enterprise. It tells us : How are we doing ? Good, bad, or indifferent? Though it appears to be a simple question, a moment's reflection will show that it is not that simple. The score-keeping has two aspects; one is that of keeping record of actual data on performance- a constant process of measurement and valuation. The other aspect is concerned with putting the data in relation to predetermined standards. In order to answer the question whether the performance is good, bad or indifferent we have to conduct a constant process of comparison against some norms, standards or benchmarks.

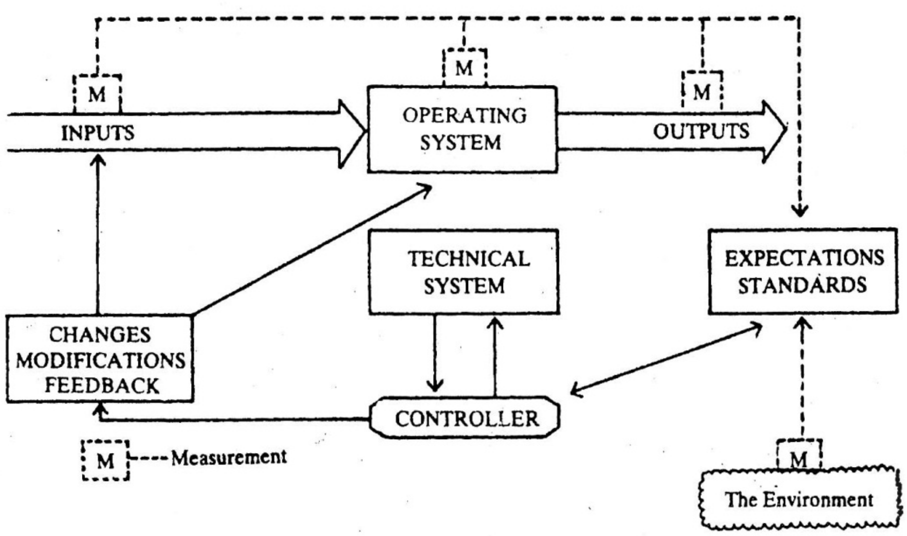
Attention directing : The attention directing is the process of giving a signal to the user about the need to take a decision. As such the accounting information supplied arouses the user's attention to take a decision. In the hands of a decision-maker it is an attention-directing information. This would enable him to immediately focus his attention on the deviations or variances from the budgets or the plans. Mostly the formal report comes in the form of annual reports. An annual report is the score card of activities for an accounting period. If properly analysed, this report can be helpful in understanding the problems of overall nature faced by the enterprise. It can also help the shareholders in assessing the actual performance of the company vis-a-vis their expectations.

Problem-solving : Accounting information also performs the problem-solving function. It involves provision of such information which enables the manager to find solutions to the problems. There are many problems which accounting information could highlight and provide for their possible solutions, such as make or buy decision with respect to component, parts or products, continue or drop decisions with respect to product lines leasing or acquisition decisions with respect to assets etc.

4.4 ACCOUNTING AND CONTROL IN ORGANISATION

Now we will discuss the financial and management accounting simultaneously as both these branches of accounting, are concerned with providing information about the same business.

The major task of the management is to control the operations of the organisation. Accounting is closely connected with control system in an organisation. To understand this, let us have a look at the control system in an organisation. The organisation is a system of inter-related parts and is linked with the environment. It derives its inputs from the environment and transforms them with the help of the operating system into outputs which it delivers to the environment. To control organisation system, we have first to measure inputs, operations and outputs. The measurements obtain often have to be evaluated against standards. This information has to be supplied to the concerned managers so that they could take appropriate actions from future point of view.



Structure of Control in an Organisation.

The final accounts or financial statements of a business comprise balance sheet and profit and loss account. Sometimes they also include the fund flow statement. The balance sheet and profit and loss account provide valuable information linking the profit to investment or assets used in business.

As business often operates in an environment of uncertainty, estimation of 'normal' profit is not easy. By making the best use of accounting information of the past in relation to the expectations of future, we try to make integrated financial plan for an organisation.

The accountant and managers obtain such information which enables them to diagnose the situation and to identify and define the problem at hand. We take problem in a hypothetical setting. Suppose you are managing a firm which sells three products P_1, P_2, P_3. You are confronted with a problem that the profit of your firm is decreasing. Now falling profit may be due to many reasons. The first thing that you would like to do is to identify the problem more precisely before you set about solving it, Some of the possible hypotheses are: which of the three products is losing money? Are all of them losing money? If all of them are losing money, are they losing money to the same extent? Is the firm losing money due to increasing cost or decreasing prices? Many such questions would enable you in diagnosing the problem more accurately. In general, such questions enable a manager to specify the causes of the problem.

Check Your Progress

Q.1. State the purposes of accounting information.

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Q.2. What is the use of accounting information in controlling?

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4.5 PROFIT AND CASH BALANCE DISTINGUISHED

Now the question is how do we evaluate the results of a firm ? The answers could be many depending on what your interests are. But there is no difference of opinion regarding two important aspects.

1. What is the worth of the business?
2. How much does it earn?

The answers of these two inquiries usually become the basis for several decisions of the management and their action plans. The initiatives, the management takes in connection with improving the profitability of the enterprise and its worth will, in a large measure, be a reflection of managerial effectiveness.

Example

Ram decided to start a small casting shop. He undertakes job orders for castings. He hired a shop floor, bought the necessary equipment and hired a few workers. Ram thought he had very successful operation during the first year, because he was engaged throughout the year.

He tried to prepare his accounts, his collection from customers was Rs. 48,000 and he had borrowed Rs. 60,000 from the bank. He had spent Rs 144,000 for running the business. He had run down his savings substantially (solution-1) see below. Ram discussed the situation with account expert. He worked out operating results for the period (solutions-2).

Section-1

Ram Enterprises

Summary of Cash transactions

Figures in Rs.

Receipts		**Payments**	
Receipts from bank loan	60,000	Wages to employees	24,000
Collections from customers	48,000	Materials purchased	72,000
		Payment of installment for equipment purchased	10,000
		Electricity charges	2,000
		Withdrawals for personal use	30,000
		Other payments for expenses	6,000
	108,000		142,000
Excess payments over receipts	Rs. 36,000		

Ram's account expert with the help of solution-2 could convince that the situation is not very bad. He gathered several other information, as given below:

1. He made sales of Rs. 72,000 (at selling price), one-third of it (Rs. 24,000) is yet to be collected. In other words, on an average 4 month's sales remain uncollected.
2. Even though he purchased materials worth Rs. 72,000 he consumed only one-half of it for production and sales. In other words, materials sufficient for one year's consumption remain in inventory.
3. Cash generation during the year was Rs. 108,000 whereas the need for payments amounted to Rs. 144,000.

Solution-2

Ram Enterprises

Operating Summary

Figures in Rs.

Collections from sales			48,000
Sales yet to be collected			24,000
			72,000
Less:			
Cost of Sales:			
Purchases of materials paid	72,000		
Inventory at close	36,000	36,000	
Wages		24,000	
Electricity		2,000	
Other expenses		6,000	
Total expenses			68,000
Net Profit			4,000

Solution-2 is based on the additional information presented above and shows that Ram has made a profit of Rs. 4,000 on sales of Rs. 72,000. You will appreciate that there is a fundamental difference in approach and utility of information contained in the two solutions. While solution-1 looks at the problem purely from the viewpoint of increases and decreases in cash. Solution-2 summarises all the revenues and expenses which belong to the period of one year irrespective of whether or not all the revenues have been received in cash and whether or not all the expenses have been paid in cash. In fact, in doing so we are making practical use of Accrual Concept (discussed in the preceding unit) and principles of revenue recognition. You may note that cash balance is not synonymous with net profit earned by the business. A business firm might have earned a profit and still be short of cash and vice-versa. In this particular example you have seen that the business has earned a profit of Rs. 4,000 but without cash balance showing any surplus. In fact, payments, as shown in solution-1 have far exceeded in receipts. The excess of payments over receipts amounted to Rs. 36,000 and this deficit was financed through the personal savings of Ram. Since payments can never be more than receipts, the deficit must have been made good through Ram's personal sources. This subject will be further expanded in Unit dealing with funds flow and cash flow analysis.

4.6 USES OF EARNINGS INFORMATION

Now we will discuss the uses of earnings information which is useful for (i) measuring accomplishment, (ii) deciding how much could be withdrawn from the business without impairing its current level of operations, (iii) identifying the problems, and (iv) determining a market value for the enterprise.

Accomplishments : In any business firm profit is an important indicator of the accomplishment of business. Other things remaining the same, higher the profits greater is the accomplishment. Accomplishment of Ram's enterprise can be summarised as follows:

It has earned a net profit of Rs. 4,000 during the year [see solution-2.]

At the same time, it should be seen from solution-1 that there is a severe cash constraint. Understandably, it was the start up situation which might have been responsible for the cash constraint.

The profit earned in the very first year of operations shows that the business could be viable. But will have' to predict several aspects such as whether sales can increase, whether costs remain the same, whether the earnings rate remains the same, and so on. At the same time, he will have to ensure better management of his cash resources.

Appropriation Decision : Very often an important question with which owners of a business are confronted is: How much money can be withdrawn without impairing its current level of operations'? This question in fact is concerned with appropriation decision. A prudent management would not only like to maintain the capital or the present capability of the enterprise intact but would also plan for future growth. The maximum amount that the owners can withdraw from business for their personal expenses should be limited to the amount of earnings which remain after making good all the resources that have been used (or consumed) in the process of generating those earnings. In other words, it is the net profit after charging depreciation and all other losses incurred in the course of business operations that is available to the owners for withdrawal, provided the business has no tax liability. Thus, the remainder is the amount which is available for withdrawal without impairing its current level of operations. However, if business has any plan for future growth, the amount available for withdrawal by or distribution among owners shall be further reduced by a portion of profit (or cash) needed for future growth depending upon the judgement of the management. In this context, the withdrawal by Ram of Rs. 30,000 against a profit of Rs4,000 cannot be defended.

Problem Identification Using Earnings Data: One can identify several problem areas from the earnings data. This is best done by computing ratios i.e., by examining the relationship of one item of earnings statement with another item. This will be taken up in details in a subsequent unit. At this stage it may only be stated that the lower earnings may be on accounts of excessive cost of inputs, excessive expenditure on overheads or low margin of profit on sales or excessive piling of inventories or other unanticipated losses. In so far as Ram's enterprise is concerned, we can identify two problems even from the very limited data that we have regarding his business. They are:

1) The inventory acquisition was not in tune with production and sales. This has led to large amount of accumulated inventory to the tune of one year's consumption.

2) Credit granted to customers, shown by credit sales, amounts to four months, sales. This shows either grant of credit on liberal terms or slow collection of receivables.

However, an analysis of operating summary along with cash summary will show that the business is facing a cash crisis since the present cash needs and cash availability are not in tune with each other.

Determining the market value of a Firm: Earlier in the beginning we have viewed the business as a distinct operating entity. The economic value of the firm is determined by the size and reliability of the stream of earnings (cash flows) produced by the business. Let us attempt the valuation of hypothetical firm. India Kitchen appliances which was incorporated as a company in 2008 by four young Engineers to market a simple but revolutionary cooking gas lighter invented by one of its founders. In order to conserve its limited capital the company opened its business in rented premises with Rs. 1,60,000 worth of equipment used mainly for research and development work. Arrangements were made with an established manufacturer to make the gas lighter on order under rigid supervision of one of the members of the young team. Because the gas lighter was able to meet a long felt need, the company reported a modest profit in its very first year of operations.

All four-man team was remarkably well balanced combining talents in engineering research, marketing and management. In the next two years they developed three more appliances that were well received in the market. By 2013 the turnover had grown to about Rs.2 crore and net profit amounted to Rs. 28Lakhs. At this point the total investment (or equity) of the owners amounted to Rs.64 lakhs. Annual earnings, therefore, represented an after tax rate of return of approximately 44 per cent of the equity. The high return could be attributed to using the facilities of other manufacturers rather than building their own, the patents that the company registered and the scientific and managerial skill the team possessed.

In the meanwhile an interesting development then took place. A large manufacturer in the household goods sector wanted to acquire the company and offered the owners a very attractive price. The four owners wanted to consider the offer (and make a decision) but asked for a few weeks time to make up their mind.

The owners knew that they had established a solid position in the industry and had no doubt that they would be able to maintain this position. They, however, felt that the potential for further growth was limited . They drew very good salaries which they would continue to enjoy even if they were to sell the business.

Just to work out how much equity in the India Kitchen Appliances was worth to them so that they could take a decision on the price offered, the four men started by forecasting the company's future profits or cash flows(we shall assume here that the figures of profits and cash flows are the same). They believed that the net profit would continue to be around Rs.28 lakhs each year for the next 10 years. Further, if they did not sell out in 2014, they could sell their interest in business (that is their equity) 10 years later for about Rs 100 lakhs. In accordance with these estimates the anticipated net earnings from continued ownership would be as follows:

Year	Earnings
1 to 10	28 Lakhs a year
10	100 Lakhs

We know that money has time value. You attach more value to an amount to be received now than the one to be received, say, a year or two later. Rs. 28 lakhs of profit to be received in the second year will be of lesser value to you than Rs. 28 lakhs to be received in the first year. Similarly Rs. 28 lakhs to be received in the third year will be of lesser value to you than Rs.28 lakhs to be received in the second year, and so on. In other words, the value of amounts to be received in future will progressively decline as time passes by. The process of reducing the future earnings to present values is known as discounting, but for this purpose a discounting rate is required. The discounting rate is nothing but the return which the owners desire to earn on their investment. The desired rate of return in a way is a rate of return which satisfies the owners of investment.

In this case the owners thought that the rate of 15 per cent after taxes was a satisfactory return on investment for the type of business they were engaged in. The question before them was how much the anticipated earnings were worth presently at this rate. At 15 percent desired rate they calculated the present value of the stream of earnings of **Rs. 28** lakhs a year for ten years plus Rs. 100 lakhs they were to receive at the end of 10th year. They found that the present value was Rs. 165.24 lakhs. You must be wondering how they calculated this figure. The mechanic of calculating the present value of future earnings (or cash flows) will be explained in subsequent Units. However, in accordance with the concept of present value that we have just explained, you will agree with us that the present value of earning of Rs. 280 lakhs to be received over a period of 10 years and lump sum of Rs. 100 lakhs to be received at the end of 10th year. i.e., a total amount of Rs. 380 lakhs, must be considerably less than this amount.

In these situations, therefore, the owners would not accept an offer of an amount less than say Rs 160 lakhs which is the present value of the appliances would continue to produce Rs. 28 lakhs a year indefinitely if it is managed adequately, the present value can be calculated simply by dividing the annual earnings by the desired rate of return:

$$\frac{28\,\text{lakhs}}{0.15} = 186.66\,\text{lakhs}$$

The value of owner's business on this basis would be 186.66 lakhs. The process of ascertaining the value of business with the help of earnings and a desired rate of return is also known as the **capitalisation of earnings.** It means that if Rs. 186.66 lakhs is paid for infinitely long series of payments of Rs. 28 lakhs a year, the rate of return on investment will be 15 per cent:

$$\frac{28\,\text{lakhs}}{186.66\,\text{lakhs}} \times 100 = 15\%$$

4.7 USES OF BALANCE SHEET

As we know that the balance sheet is a summary of a firms' assets and liabilities, including share capital and reserves at a defined moment of time. That is why it has been described as a snapshot or still picture of the financial position of a business entity.

The various groups interested in the company can also draw useful inferences from an analysis of the information contained in the profit and loss account and the balance sheet. Shareholders usually have twin interests: an interest in receiving a regular income and an interest in the appreciation of their investment in shares. The market worth of their shares depends not only on the dividends they receive but also on the extent of retained earnings which the company has accumulated over the years. The materialization of the shareholders' expectations regarding bonus shares also depends on the retained earnings built up by the company. Investment decisions of the prospective investors and disinvestment decisions of the existing investors are influenced by the composition of assets and liabilities shown in the balance sheet.

Basically the main interest of the trade creditors, centers on the liquidity position of the company. They would like to make an assessment as to whether the company will be able to meet its obligations when the occasion arises. They are, therefore, concerned about the working capital available with the enterprise and its cash resources. All this information can be gleaned from the balance sheet. The interest of long-term creditors lies in two things; they are interested in the regular servicing of their debts (that is payment of periodic interest) and repayments of their loans after the expiry of stipulated period. They are interested not only in the profitability of the enterprise but also in its long-term solvency and financial viability. A study of the balance sheet of the company over the past several years can yield a lot of useful information to such long-term investors.

In the same way, other interested parties like regulatory and developmental agencies of the Government, consumer and welfare organisations can derive useful conclusions from a study of the balance sheet about the working of the corporate sector and its contribution to the national economy.

The main emphasis here that it is not the profit and loss account and the balance sheet in isolation with each other but both of them in conjunction with each other that can yield a harvest of information for the interested parties or analysts. All this pertains to the broad area of analysis of financial statements which will be taken up in details in a subsequent unit.

4.8 SUMMARY

The basic role of Accounting information system is to address itself to three important business related problems, namely, score-keeping, attention-directing and problem-solving. Accounting information acquires relevance only in the context of an organisation. In this context accounting is closely related to control. Accounting helps in the process of guiding actions of the organisation into desired directions. In the process of initiating control actions, it helps the whole gamut of activities involving planning, organising and controlling.

We find that there may not necessarily be an exact correspondence between cash balance and the profit earned during an accounting period.

In business the earnings information is useful for several purposes. It helps in measuring achievement of business and its management. It provides a basis for appropriation decisions and for determining the market value of the firm. It helps to identify the problems currently faced by the enterprise.

The usefulness of the balance sheet is that it reflects the financial position of the enterprise. It provides useful information to various users of information who might be interested in the firm. A proper analysis of the information contained in the balance sheet can enable them to draw conclusions which in turn help them in taking decision, the top management is always interested for the same.

4.9 KEY WORDS

Profit and loss Account is a summary of the revenues and expenses, including gains and losses from extraordinary items of a business unit for an accounting period.

Balance Sheet is a statement of financial position of a business unit disclosing at a given moment of time its assets, liabilities and ownership equities.

Problem-solving role of accounting consists of supplying such information as would be useful to managers for taking a variety of routine and non-routine decisions.

Appropriation of net profit means the (allocation) disposal of net profit for various purposes. In the case of non-corporate entities, the net profit is distributed to the owners. In the case of corporate entities usually a part of the net profit is provided for estimated tax liability, a part is retained in business to strengthen its financial position and for future growth, a part is distributed to shareholders in the form of dividends and any amount left is carried forward to the next period.

4.10 SELF ASSESSMENT QUESTIONS /EXERCISE

1. Discuss the purpose of accounting information? What purpose, in your opinion, is the most important and why? Explain.
2. "Accounting is closely connected with control". Elaborate the statement and discuss the role of accounting feedback in the process of control.
3. Discuss the uses of earnings information. Can you think of uses other than the four uses mentioned in this unit?
4. Explain what a Balance Sheet is and what information it conveys to an outsider?

5. Discuss what groups of people would be interested in accounting reports and why?

6. Shyam invested Rs. 40,000 of his own money in small service business and borrowed another Rs. 20,000 from a bank, also for business use. At the end of his first year of operations, he found that there was Rs. 68,000 in the enterprise's bank account. He owed his suppliers Rs. 12,000 and had not repaid the bank loan. His business assets other than cash were negligible. During the year he had paid himself his salary of Rs. 24,000.

a) Draw the conclusions about his first year's operations?

b) For what decisions would this information be used? What additional information would the decision makers be likely to call for in making these decisions?

4.11 FURTHER READINGS

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TESLA-016

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MBA-1.3

Accounting For Management

Uttar Pradesh Rajarshi Tandon
Open University

BLOCK

2

Balance Sheet, P/L Accounts, Cash and Fund Flow

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UNIT-5 CONSTRUCTION AND ANALYSIS OF BALANCE SHEET

Structure

5.1 INTRODUCTION

The two principle statements which form a set of accounts are:

a) The profit and loss account defined as a summary of a business's transactions for a given period.

b) The balance sheet defined as a statement of the financial position of the business at a given date (usually the end of that period).

Other less important statements are the manufacturing account and the trading account. It is absolutely essential to understand what the profit and loss statement and balance sheet mean. Both documents are vital to show the corporate health of the organization.

A balance sheet shows details about the financial status of a firm at a particular point of time. A balance sheet is a summary of the firm's assets, liabilities and owners' equity or net worth (i.e. worth that the firm owes to its owners i.e. stockholders or shareholders) at a given point of time.

Balance Sheet is prepared after preparing the Profit & Loss Account. It is a sheet of Balances as the name indicates; which we mention as

Assets & liabilities. Balance sheet is a classified summary of the balance remaining open in the ledger, after all the income & expenditure accounts have been closed off by transfer to trading & profit and loss account. It has two sides left hand side is liabilities side while right hand side is Assets side. At last the balances of both the sides must be equal.

5.2 OBJECTIVES

After studying this unit, you shall be able to understand:

- The meaning of balance sheet
- Constructing a balance sheet
- Forms and classification of items of balance sheet.

5.3 CONCEPTUAL BASIS OF BALANCE SHEET

A balance sheet provides a snapshot of a business' health at a point in time. It is a summary of what the business owns (assets) and owes (liabilities). Balance sheets are usually prepared at the close of an accounting period such as month-end, quarter-end, or year-end. New business owners should not wait until the end of twelve months or the end of an operating cycle to complete a balance sheet. Business owners see a balance sheet as an important decision-making tool. A balance sheet is a financial statement that summarizes a company's assets, liabilities and shareholders' equity at a specific point in time. These three balance sheet segments give investors an idea as to what the company owns and owes, as well as the amount invested by shareholders.

'A Balance sheet is the mixed list of the assets, liabilities and proprietorship of business of an individual at certain time'.

5.3.1. CHARACTERISTICS OF BALANCE SHEET

1. It is always prepared on a particular date.
2. The total of both the sides must be equal.
3. It shows the Financial Position of the business.
4. It is a statement not an account although; it is a part of Final Accounts and is prepared with the help of accounts.
5. It has no debit side and credit side. Neither 'to' nor 'by' are used before the names of Accounts.

5.3.2 IMPORTANCE OF BALANCE SHEET

1. **Financial Position:** Balance sheet shows the financial position of firm. It is the list of assets and liabilities of the firm on a specific date.

2. **Information of liquidity:** It tells us about current assets and current liabilities. If the current assets are double of current liabilities, it is a symbol of healthy and sound liquidity position of firm.

3. **Knowledge of proprietary Ratio**: Through it, many ratios which are helpful for decision making can be find out. For example proprietary ratio shows the relationship between proprietors fund and total funds.

It would do well to prepare the income statement and the balance sheet on a regular basis to guide the entrepreneur on critical decisions that must be made with regard to the business. There are a number of technology solutions available to aid the entrepreneur in generating these financial reports.

5.4 CONSTRUCTION OF BALANCE SHEET

The arrangement of assets and liabilities in certain groups and in particular order is called the form of balance sheet. Assets and liabilities can be arranged in Balance Sheet into two ways:

a. In order of liquidity

b. In order of permanence

a. **In order of liquidity :** When assets and liabilities are arranged to their realisability and payment preferences, such an order is called liquidity order. It is given below:

Balance Sheet (I)

Liability	Amount	Assets	Amount
Current liabilities:		Liquid assets:	
Bills payable		Cash in hand	
Sundry creditors		Cash at bank	
Bank overdraft		Floating assets	
Long term liabilities:		Sundry debtors	
Loan from bank		Investments	
Debentures		Bills receivables	
Fixed liabilities:		Stock in trade	
Capital		Prepaid expenses	
		Fixed assets :	

		Machinery Building Furniture and fixtures Motor car Intangible assets Goodwill Patents Copy right Licenses Fictitious assets: Advertisements Misc expenses P/L a/c	
Total		**Total**	

b. **In order of permanence:** When order is reversed from what is followed in case of liquidity, it is called the order of permanent. This order is followed in case of Joint Stock Company compulsorily, but it can be followed by other concerns also. This order is as follows:

Balance Sheet (II)

Liabilities	Amount	Assets	Amount
Fixed liabilities Long term liabilities Current liabilities		Fixed assets Intangible assets Floating assets Liquid assets Fictitious assets	
Total		**Total**	

Check Your Progress

Q1. Define Balance Sheet.

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Q2. What is called order of liquidity?

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Q3. State three characteristics of Balance Sheet.

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……………………………………………………………………………
……………………………………………………………………………
………………………

5.5 FORMS AND CLASSIFICATION OF ITEMS

This statement can be reported in two different formats: account form and report form. The account form consists of two columns displaying assets on the left column of the report and liabilities and equity on the right column. You can think of this like debits and credits. The debit accounts are displayed on the left and credit accounts are on the right.

The report form, on the other hand, only has one column. This form is more of a traditional report that is issued by companies. Assets are always present first followed by liabilities and equity.

In both formats, assets are categorized into current and long-term assets. Current assets consist of resources that will be used in the current year, while long-term assets are resources lasting longer than one year. Liabilities are also separated into current and long-term categories.

The format of Balance Sheet is given in Company Act. The vertical format of Balance Sheet is given in Company Act 1956.

Vertical Form of Balance Sheet

Vertical from of balance sheet inserted as Part B of part 1 of Schedule VI to the Companies Act, 1956 by G.S.R No. 220(E) dated 12-13-1979 is as follows:

B- VERTICAL FORM

Name of the Company………………

Balance Sheet as at…………………..

	Schedule No.	Figures as at the end of current financial year	Figures as at the end of previous financial year
1	2	3	4
I Sources of fund (1) Shareholders funds: (a) Capital (b) Reserves and surplus (2) Loans funds: (a) secured loans (b)Unsecured loans Total II. Application of funds (1.) Fixed assets: (a) Gross block (b) less: deprecation (c) Net block (d) Capital work-in-progress (2) Investments (3) Current assets, loans and advances: (a) Inventories (b) Sundry debtor (c) Cash and bank balances (d) Other current assets			

(e) Loans and advances Less: current liabilities & provisions (a) Liabilities (b) Provisions Net current assets (4)(a) Miscellaneous Expenditure To the extent not written Off or adjusted (b)Profit and Loss Account Total			

As per **Companies Act 2013, the format of Balance Sheet is given below:**

PART l- FORM OF BALANCE SHEET

Name of the company……

Balance Sheet (as at…..)

(Rupees in…..)

Particulars	Note No.	Figures as at the end of current reporting period	Figures as at the end of the previous reporting period
I.EQUITY AND IABILITIES			
(1) Shareholders' funds			
(a) Share capital			
(b) Reserves and surplus			
(c) Money received against share warrants			
(2) Share application money pending allotment			
(3) Non-current liabilities			
(a) Long-term borrowings			
(b) Deferred tax liabilities (Net)			
(c) Other Long term liabilities			
(d) Long-term provisions			
(4) Current liabilities			
(a) Short-term borrowings			
(b) Trade payables			
(c) Other current liabilities			
(d) Short –term provisions			
II. ASSETS			
(1) Non-current assets			
(a) Fixed assets			
(i) Tangible assets			
(ii) Intangible assets			
(iii) Capital wok-in-progress			
(iv) Intangible assets under development			
(b) Non-current investments			
(c) Deferred tax assets (net)			
(d) Long-term loans and advances			
(e) Other non-current assets			
(2) Current assets			
(a) Current investments			
(b) Inventories			
(c) Trade receivables			
(d) Cash and cash equivalents			
(e) Short-term loans and advances			
(f) Other current assets			

TOTAL			

Let's look at each of the balance sheet accounts and how they are reported.

5.5.1 ASSET SECTION

Assets are the Economic resources of a business such as buildings, equipment, land, motor vehicles, amounts owed by customers (accounts receivable), patents and bank deposits. The asset section is organized from current to non-current and broken down into two or three subcategories. This structure helps investors and creditors see what assets the company is investing in, being sold, and remain unchanged. It also helps with financial ratio analysis. Ratios like the current ratio are used to identify how leveraged a company is based on its current resources and current obligations.

The first subcategory lists the current assets in order of their liquidity. Here's a list of the most common accounts in the current section:

- Cash
- Accounts Receivable
- Prepaid Expenses
- Inventory

The second subcategory lists the long-term assets. This section is slightly different than the current section because many long-term assets are depreciated over time. Thus, the assets are typically listed with a total accumulated depreciation amount subtracted from them. Here's a list of the most common long-term accounts in this section:

- Equipment
- Leasehold properties
- Buildings
- Vehicles
- Long-term Notes Receivable

According to the historical cost principle, all assets, with the exception of some intangible assets, are reported on the balance sheet at their purchase price. In other words, they are listed on the report for the same amount of money the company paid for them. This typically creates a discrepancy between what is listed on the report and the true fair market value of the resources.

5.5.2 LIABILITIES SECTION

Liabilities are economic obligations to pay definite or reasonably certain amounts at a time in the future. They are claims against the business by creditors. Liabilities are also reported in multiple subcategories. There are typically two or three different liability subcategories in the liabilities section: current, long-term, and owner debt.

The current liabilities section is always reported first and includes debt and other obligations that will become due in the current period. This usually includes trade debt and short-term loans, but it can also include the portion of long-term loans that are due in the current period. The current debts are always listed by due dates starting with accounts payable. Here's a list of the most common current liabilities in order of how they appear:

- Current Liabilities
- Accounts Payable
- Accrued Expenses
- Unearned Revenue
- Current Portion of Long-term Debt

The second liabilities section lists the obligations that will become due in more than one year. Often times all of the long-term debt is simply grouped into one general listing, but it can be listed in detail. Here are some examples:

- Long-term Liabilities
- Mortgage Payable
- Notes Payable
- Loans Payable

Sometimes owners give loan to their companies instead of taking out a traditional bank loan. Investors and creditors want to see this type of debt differentiated from traditional debt that's owed to third parties, so a third section is often added for owner's debt. This simply lists the amount due to shareholders or officers of the company.

5.5.3 EQUITY SECTION

Owner's equity is the residual interest of the owners in the business. Unlike the asset and liability sections, the equity section changes depending on the type of entity. For example, corporations list the common stock, preferred stock, retained earnings, and treasury stock. Partnerships list the members' capital and sole proprietorships list the owner's capital.

Some of the important elements of the balance sheet are explained below:

- **Current Assets –** It includes cash and those assets which in the normal course of business will be turned into cash generally within a year from date of balance sheet. These consist of cash, marketable securities (or temporary investments), accounts receivable, inventories and prepaid expenses (payments made in advance, such as insurance, from which the business has not yet received benefits). Therefore, current assets are mostly working assets in the sense that they are constantly being converted to cash.

- **Fixed Assets –** It refers to property, plant and equipment; these represent those assets not intended for sale that are used over and over again in order to manufacture the product. Fixed assets generally consist of land, buildings, machinery, and office equipment.
- **Current Liabilities** – Generally, It includes all debts that fall due in the coming year. Payments made on current debts generally come from a business' current assets.
- **Accounts Payable –** It represents the amounts that the business owes to its regular business creditors from whom it has bought goods or services.
- **Notes Payable** – Money owed to a bank or other lender (wherein a written promissory note has been given by the borrower).
- **Accrued Expenses Payable** – It may include salaries and wages payable to employees, interest on funds borrowed from banks, insurance premiums and similar items. To the extent that the amounts owed are unpaid as of the balance sheet date, these expenses are grouped as a total under accrued expenses payable.
- **Income Taxes Payable –** Amount of taxes owed and due.
- **Long-term Liabilities –** Debts due after one year from the date of the financial report.

Illustration:
From the following information prepare the balance sheet of AB Co. Ltd.

Sundry Creditors	1,00,000	General Reserve	40,000
Interest on Debentures	28,000	Authorized Capital:	
Cash at Bank	69,800	1,20,000 shares of Rs. 10 each	12,00,000
Cash in hand	1,500	Subscribed Capital:	
Investments	95,000	80,000 shares of Rs. 10 each	8,00,000
Calls in arrears	15,000	Preliminary expenses	9,000
Loans and advances	85,000	Goodwill	40,000
Building	6,00,000	Plant & Machinery	6,60,000
Depreciation on plant	66,000	P. & L. A/c (Cr.)	65,000
6% Debentures	6,00,000	Bills Payable	66,000
Closing Stock	10,000	Debtors	1,74,000
Prov. For doubtful debts	8,700	Furniture	14,400

Solution:

Balance Sheet of AB Co. Ltd.

Particulars	Note No	Figures as at the end of current reporting period	Figures as at the end of previous reporting period
I. EQUITY AND LIABILITIES			
Shareholder's Funds			
Share Capital	1	7,85,000	
Reserves and Surplus	2	1,05,000	
Non-Current Liabilities			
Long-term borrowings	3	6,00,000	
Current Liabilities			
Trade payables	4	1,66,000	
Other current liabilities	5	28,000	
Total		16,84,000	
II. ASSETS			
Non-current assets			
Fixed assets			
(i) Tangible assets	6	12,08,400	
(ii) Intangible assets	7	40,000	
Non-current investments		95,000	
Other Non-current assets	8	9,000	
Current assets			
Inventories		10,000	
Trade receivables	9	1,65,300	
Cash and cash equivalents	10	71,300	
Short-term loans and advances		85,000	
Total		16,84,000	

Notes to accounts

1.	**Share Capital**	
	Authorized Capital	
	1,20,000 Shares of `10 each	
	12,00,000	
	Issued and Subscribed Capital	
	80,000 shares of `10 each	
	8,00,000	
	Called up and paid up capital	
2.	80,000 Shares of `10 each, fully called up	**7,85,000**
	8,00,000	
	Less: Calls-in-arrears	40,000
	15,000	65,000
3.	**Reserves & Surplus**	**1,05,000**
	General Reserve	
4.	Surplus in Statement of Profit & Loss	**6,00,000**

	Long-term Borrowings	1,00,000
	6% Debentures	66,000
5.	**Trade Payables**	**1,66,000**
	Sundry Creditors	
6.	Bills Payable	**28,000**
	Other Current Liabilities	6,00,000
	Interest on Debentures (outstanding)	14,400
	Tangible assets	
	Building	5,94,000
7.	Furniture	**12,08,400**
	Plant & Machinery	
8.	6,60,000	**40,000**
	Less: Depreciation	
9.	66,000	**9,000**
	Intangible assets	
10.	Goodwill	**1,65,300**
	Other non-current assets	
	Preliminary expenses	1,500
	Trade receivables	69,800
	Debtors	**71,300**
	1,74,000	
	Less: Provision for doubtful debts	
	8,700	
	Cash and Cash equivalents	
	Cash in hand	
	Cash at bank	

5.6 SUMMARY

Balance sheet is a report on the financial resources (assets) available to the business to carry out its economic activities as well as claims (liabilities) against its resources. The balance sheet is a statement of the financial position of a business at a given date.

The way to show off the success of the company is a balance sheet. A balance sheet is a documented report of a company's assets and obligations, as well as the residual ownership claims against equity at any given point in time. It is a cumulative record that reflects the result of all recorded accounting transactions since enterprise was formed. Anybody needs a balance sheet to specifically know what an organization's net worth is on any given date. The balance sheet is prepared after preparing the profit and loss account. It is a sheet of balances of assets and liabilities. Balance sheet is classified summary of the balance remaining open in ledger, after all the income and expenditure accounts have been closed off by transfer to trading and profit and loss account.

Use the basic accounting equation to make balance sheets. This is Assets = Liabilities + Owner's Equity. Thus, a balance sheet has three sections: Assets, which are the resources owned; Liabilities, which are the company's debts; and Owner's Equity, which is contributions by shareholders and the company's earnings. The information needed to complete a balance sheet can be found on the company's general ledger where all financial transactions for a particular period have been recorded.

5.7 KEYWORDS

Capital: amount invested by proprietor in the business
Profits: funds generated by the business
Losses: funds lost by the business
Drawings: amounts taken out of the business

Fixed assets: assets acquired for use within the business with a view to earning profits, but not for resale. They are normally valued at cost less accumulated depreciation.

Current assets: assets acquired for conversion into cash in the ordinary course of business; they should not be valued at a figure greater than their net realizable value.

Current liabilities: amounts owed by the business, payable within one year.

Net current assets: funds of the business available for day-to-day transactions. This can also be called working capital.

Loans: funds provided for the business on a medium to long term basis by an individual or firm

5.8 Terminal Questions

1. What is the conceptual basis of balance sheet?
2. Give form and classification of items of balance sheet.
3. Write brief note on construction of balance sheet.
4. What is a Balance Sheet? Why it is prepared? Give the specimen of Balance Sheet.
5. Give the specimen vertical form of Balance Sheet.
6. From the following Trial Balance of M/s Mukesh draw up Balance Sheet for the year ending on 31st March, 2012

Particulars	Dr. Amount Rs.	Cr. Amount Rs.
Mukesh's Capital		30000
Mukesh's Drawing	5000	
Creditors		42000
Debtor	65000	
Bills Receivable	6000	
Furniture	6500	
Cash	11300	
Machinery	15000	
Bank Overdraft		5000
Profit and Loss A/c		41800
Stock	10000	
Total	118800	118800

5.9 SUGGESTED READINGS

- Advanced Accounting, CM Juneja, Kalyani publisher, Ludhiyana.
- Financial Analysis, Jagdish Prakash, Prayag Pustak Bhawan, Allahabad
- Analysis of Financial Statement, H.K.Singh &Meera singh, Prayag Pustak Bhawan, Allahabad
- Advanced Accountancy Vol.1, S.N. Maheshwari & S.K. Maheshwari
- Advanced Accountancy Principles of Accounting by S.P Jain & K.L. Narang

UNIT-6 CONSTRUCTION AND ANALYSIS OF PROFIT AND LOSS ACCOUNT- I

Structure

6.1 INTRODUCTION

It is quite natural that the businessman is interested in knowing whether his business is running on Profit or Loss and also the true financial position of his business. The main aim of Bookkeeping is to inform the Proprietor, about the business progress and the financial position at the right time and in the right way. The profit and loss account is a financial statement which sets out the results of the trading activities of an enterprise in a detailed breakdown of income generated and expenses incurred. Different businesses have different breakdowns of income and expenses and hence present financial information in the profit and loss account in different formats. The Profit and Loss account shows what net profit or loss your business has made within an accounting period after deducting all expenditure from income. A net profit is earned if total expenditure is less than the sales and a net loss if it is greater.

The profit & loss statement summarizes the revenues and expenses generated by the company over the entire reporting period. The profit & loss statement is also known as the income statement, statement of earnings, statement of operations, or income.

The basic equation on which a profit & loss statement is based is Revenues – Expenses = Profit.

All companies need to generate revenue to stay in business. Revenues are used to pay expenses, interest payments on debt, and taxes owed to the government. After the costs of doing business are paid, the amount left over is called net income. Net income is theoretically available to shareholders, though instead of paying out dividends, the firm's management often chooses to retain earnings for future investment in the business.

6.2 OBJECTIVES

After studying this unit, you shall be able to understand:

- An introduction to the basic principles of the accounting equation
- An introduction to, and the construction of, manufacturing, trading and profit and loss accounts and their use

6.3 THE LINKAGE BETWEEN PROFIT AND LOSS ACCOUNT AND BALANCE SHEET

The profit and loss (P&L) account summarizes a business' trading transactions - income, sales and expenditure - and the resulting profit or loss for a given period. The balance sheet, by comparison, provides a financial snapshot at a given moment. It doesn't show day-to-day transactions or the current profitability of the business. However, many of its figures relate to - or are affected by - the state of play with P&L transactions on a given date. Any profits not paid out as dividends are shown in the retained profit column on the balance sheet.

The amount shown as cash or at the bank under current assets on the balance sheet will be determined in part by the income and expenses recorded in the P&L. For example, if sales income exceeds spending in the period preceding publication of the accounts, all other things being equal, current assets will be higher than if expenses had outstripped income over the same period. If the business takes out a short-term loan, this will be shown in the balance sheet under current liabilities, but the loan itself won't appear in the P&L. However, the P&L will include interest payments on that loan in its expenditure column - and these figures will affect the net profitability figure or 'bottom line'.

a) The profit and loss account defined as a summary of a business's transactions for a given period.

b) The balance sheet defined as a statement of the financial position of the business at a given date (usually the end of that period).

Other less important statements are the manufacturing account and the trading account. It is absolutely essential to any marketer to understand what the profit and loss statement and balance sheet mean. Both documents are vital, not only to show the corporate health of the organization, but also as an indication to various shareholders of how well or badly the organization is performing, as proof to potential investors or lenders for the raising of capital and as a statutory record for taxation and other purposes.

6.4 MEASUREMENT OF INCOME

Income is used as a measure of efficiency in two senses. First, the overall efficiency of a business is assessed in terms of the income generated. Hence, income tends to provide the basic standard by which success is measured There are clearly problems in focusing upon financial efficiency to the detriment of other concepts of business efficiency-such as its effectiveness as a social unit and its efficiency in developing and using new ideas and processes. Nevertheless, those who support the use of income as a measure of business efficiency argue that in the last analysis, all other aspects of efficiency converge on income. Second, shareholders assess the efficiency of their investments by reference to reported income. Hence, the allocation of investment funds, the selection of portfolios and the operations of the financial system depend upon income as a standard by which decisions are taken.

Income statements commonly used are "statement of income," "statement of earnings," "statement of operations" and "statement of operating results." Many professionals still use the term "P&L," which stands for profit and loss statement, but this term is seldom found in print these days. In addition, the terms "profits," "earnings" and "income" all mean the same thing and are used interchangeably.

The income statement breaks down your company's profit performance into three basic sections. Each one offers insights into your ability to operate a profitable business. The income statement culminates in net income for the period, but two other specific profit calculations also offer your business leaders and potential creditors critical information about the companies' income-earning.

Gross Profit

Gross profit is calculated in the income statement's first section. It is simply the total amount of money took in revenue minus the cost of the goods you sold. The higher your gross profit, the more likely you are to cover your fixed costs and earn income for the period. This initial section also is useful in calculating your gross profit margin ratio.

Operating Profit

In the operating income section of the statement, fixed operating costs are subtracted from gross profit to calculate operating profit for the period. Fixed costs include building and equipment costs, utility expenses and other costs not directly tied to production. A strong operating profit is a good sign of financial health, because it represents your earnings from core business activities. Operating profit also is used to calculate operating profit margin.

Net Profit

Income statement finally reaches net profit or loss when irregular income and expenses are taken from operating profit. Legal costs such as patent filings or settlements are examples of irregular, one-time expenses. Sales of buildings and equipment are examples of irregular income. While net profits are ideal, one-time expenses do not necessarily affect long-term profitability. Net profits are also used to calculate the net profit margin.

Income Statements

	Revenues	
Less:	<u>Cost of Goods Sold</u>	Manufacturing
	Gross Profit	
Less:	Salaries	
	Advertising	
	Rent	Selling &
Administrative		
	Depreciation	
	Operating Income	
Less:	<u>Interest Expense</u>	Finance
	Taxable Income	
Less:	<u>Taxes</u>	Government
	Net Income	

The income statement is broken down by functional area. This allows us to more accurately determine where our strengths or weaknesses lie.

Illustration 6.1 The Trading and Profit and Loss or Income Statement with imaginary figures in the following form:

Income Statement

For the year ended 31st March 2016

Sales		32000
Less: Cost of Goods sold:		
Raw Materials Consumed	15600	
Consumables	1600	
Direct Labour	1500	
Other Direct Expenses	960	19660
Gross Profit		12340
Less: Operating Expenses		
Administration Expenses	2400	
Selling Expenses	520	
Depreciation	1400	4,320
Operating Profit		8020
Add: Non Operating Income		100
		8120
Less: Non Operating Expenses		200
Net Profit before Interest & Tax		7920
Less: Interest Paid		720
Net Profit before Tax		7200
Less : Income Tax@ 50%		3600
Net Profit after Tax		3600

6.5 PREPARATION OF PROFIT AND LOSS ACCOUNT

This statement in trading concern is prepared under the heading trading and profit/loss a/c or in manufacturing concern manufacturing, trading and profit/ loss a/c. These are discussed below:

6.5.1 TRADING ACCOUNT

This statement is prepared to know the trading results or gross margin on trading of the business, i.e., how much gross profit the business has earned from buying and selling during a particular period. The purpose of the trading account is to show the gross profit on the sale of goods. Gross profit is the difference between the sale proceeds of goods and what those goods cost the seller to buy, or cost of sales. The cost of sales for this purpose includes the amount which has been debited for them to the purchases account plus the cost of getting them to the place of sale, which is usually the seller's premises, i.e. the carriage inwards of those goods.

The difference between the sales and cost of goods called gross profit or loss. The specimen format of the trading a/c is given below:

Trading a/c

For the year ended on…..

Particulars	Amount	Particulars	**Amount**
To Opening Stock To Net Purchases To Commission On Purchase To Direct Expenses To Direct Wages To Carriage Inwards To Coal Gas Water To Gross Profit transferred to profit and loss a/c (if any)		By Net Sales By Closing Stock By Gross loss transferred to profit and loss a/c (if any)	
Total		Total	

6.5.2 PROFIT AND LOSS ACCOUNT

The remaining credit balances of nominal accounts in the ledger represent non-trading income, gains and profits of the business e.g. rent, discount and interest receivable. Debit balances represent expenses and losses of the business and are known as overheads, e.g. salaries and wages, rent and rates payable, lighting, heating, cleaning and sundry office expenses. These must now be transferred to the profit and loss account so that we can calculate the net profit of the business from all its activities.

The profit and loss (income) statement presents a summary of the revenues and costs for an organization over a specific period of time. Such a statement is generally developed on a monthly, quarterly and yearly basis. The profit and loss statement enables a marketer to examine overall and specific revenues and costs over similar time periods and analyses the organization's profitability. Monthly and quarterly statements enable the firm to monitor progress towards goals and revise performance standards if necessary.

When examining a profit and loss statement, it is important to recognize one difference between manufacturers and retailers. For manufacturers the cost of goods sold involves the cost of manufacturing products (raw materials, labour and overheads). For retailers, the cost of goods sold involves the cost of merchandise purchased for resale (purchase price plus freight charges).

The balance sheet shows that the profit for an accounting period increases proprietor's funds. The trading and profit and loss account shows, in detail, how that profit or loss has arisen. The profit and loss statement consists of these major components:-

- **Gross sales -** the total resources generated by the firm's products and services
- **Net sales -** the revenues received by the firm after subtracting returns and discounts (such as trade, quantity, cash)
- **Cost of goods sold -** the cost of merchandise sold by the manufacturer or retailer.
- **Gross margin (profit)** - the difference between sales and the cost of goods sold: consists of operating expenses plus net profits
- **Operating expenses -** the costs of running a business, including marketing
- **Net profit before taxes -** the profit earned after all costs have been deducted.

Importance of Profit and Loss Account

1. Information of Net Profit or Net Loss. One of the important objectives of maintaining accounts is to see whether the business has earned profit or suffered loss during the accounting period. Profit and Loss Account provides information regarding this important objective because it gives information about the profitability or otherwise of the business.

2. Comparison of Current Profit with Past Profits. Profit and Loss Account affords comparison of the current year's net profit with those of the past years. With this comparison it can be ascertained whether net profit of the business is showing a rising trend or downward trend.

3. Comparison of Expenses. Comparison of the various expenses included in the Profit and Loss Account with the expenses of the previous period helps in taking effective steps for control of unnecessary expense.

4. Helpful in Preparation of Balance Sheet. Net profit or net loss disclosed by the Profit and Loss Account is transferred to Capital Account and Capital Account appears on the liabilities side of the Balance Sheet. Without taking net profit or net loss the Balance sheet cannot be completed. Thus, Profit and Loss Account helps in the preparation of the Balance Sheet.

5. Helpful in Future Growth of the Business. On the basis of profit figures of the current and the previous period, estimates about the profits in the years to come can be made and projection about the expansion of the business can be made.

Indirect expenses to be shown on the debit side of profit and loss account can also be divided into two categories i.e.(i) operating expenses and (ii) Non-operating expenses.

Operating Expense: are those expense which are incurred in a concern to run the business efficiently and smoothly. Expenses incurred on administration, selling and distribution come under this category.

Non-operating Expenses are those expenses which are not required to be incurred for efficient and smooth operation of the business but still shown on the debit side of the profit and loss account. These include loss on the sale of fixed assets, writing off tangible assets and intangible assets, financial expenses etc.

Check Your Progress

Q1. What is Gross Profit?

……

Q2. How is cost of goods sold calculated?

………..

Q3. What is the objective behind preparing Trading A/c?

……

The format of profit and loss a/c is as follows:

Profit and Loss Account

Particulars	**Amount**	**Particulars**	**Amount**
To Gross Profit b/d (If any)		By Gross Loss b/d (If any)	
To Salaries		By Discount Received	
To Commission		By Interest Received	
To Advertisement		By Commission Received	
To Bad Debts		By Net Loss Transferred to Capital A/C	
To Insurance			
To Distribution Expenses			
To Interest On Capital			
To Provision For Bad Debts			
To Net Profit Transferred to Capital A/C			
Total		Total	

Illustration-6.2 From the following balances extracted at the close of the year ended 31st March 2016 Prepare Profit and Loss Account of M/s Mahesh as at the date:

	Rs		Rs
Gross Profit	22,000	Discount (Dr.)	1,000
Carriage outward	5,000	Apprentice Premium (Cr.)	3,000
Salaries	1,100	Printing & Stationery	500
Rent	8,200	Rent & Taxes	700
Fire Insurance Premium	1,800	Travelling Expenses	400
Bad Debts	1,200	Sundry Trade Expenses	600
Income Tax Paid	7,000	Rent received on Sub-letting	2,000
Life Insurance Premium	6,000		

Solution:

Profit & Loss account of M/s Mahesh

For The Year Ended 31st March 2016

	Rs		
To Carriage Outward	5,000	By Gross Profit b/d	22000
To Salaries	1,100	By Apprentice	3,000
To Rent	8,200	Premium	
To Fire Insurance Premium	1,800	By Rent received on	2,000
To Bad Debts	1,200	Sub-letting	
To Discount			
To Printing & Stationery	1,000		
To Rent & Taxes	500		
To Travelling Expenses	700		
To Sundry Trade Expenses	400		
To Net Profit transferred	600		
to Capital A/c			
	6,500		
	27,000		27,000

Note: Income tax paid and life insurance premium being personal expenses of the proprietor have not been debited to the Profit and Loss Account these are to be taken as drawing and will be deducted from capital Account.

Vertical Presentation of P/L/A/c

Sales:		Rs.
Cash		-----
Credit		------
Less : Sales Returns		(----)
Net Sales		-----
Less : Cost of Goods sold:		
: Opening Stock	…	
Add :Purchases including Incidental Expense	…	
Manufacturing expenses	--	
Less : Closing Stock	(---)	-------
Gross Profit		-----
Less : Administration Expenses	----	
Selling and Distribution Expenses	-----	-----

Operating Profit		(-----)

Less : Non Operating expenses		-----
Add : Non-Operating Income		-----
Net Profit		

Illustration-6.3 The following figures relate to the trading activities of a concern for the year ended 31st March, 2016

Sales Rs. 20,00,000; Purchase Rs 14,00,000, Opening Stock Rs. 2,20,000; Closing Stock 2,80,000 Sales Returns Rs. 80,000

Selling Expenses:

(i) Sales Rs. 36,000

(ii) Advertising Rs. 14,000

(iii) Travelling Rs. 10,000

Administrative Expenses:

(i) Salaries Rs: 60,000

(ii) Rent Rs. 12,000

(iii) Stationery, Postage etc, Rs 4000; Depreciation Rs. 20,000; Other Charges Rs. 40,000

Provision for Taxation Rs. 1, 40,000

Non Operating Income:

(i) Dividend Received Rs. 24,000

(ii) Profit on Sale of Fixed Assets Rs, 1,20,000

Non-operating Expenses:

Loss on Sale of Shares Rs. 6,000

You are required to prepare Trading and Profit & Loss A/c (in vertical form).

Solution:

Trading And Profit And Loss Account (In vertical Form)

For the year ended 31st March, 2016

	Rs.	Rs.
Sales		20,00,000
Less: Sales Returns		80,000
Net Sales		19,20,000
Less: Cost of Goods sold:		
Opening Stock	2,20,000	
Add: Purchases	14,00,000	
	16,20,000	
Less: Closing Stock	2,80,000	13,40,000
Gross Profit		5,80,000

Less: Administrative Expenses:		
Salaries	60,000	
Rent	12,000	
Stationery Postage etc.	4,000	
Depreciation	20,000	
Other Charges	40,000	
Provision for Taxation	1,40,000	
	2,76,000	
Selling Expenses:		
Salaries 36,000		
Advertising 14,000		
Travelling 10,000	60,000	3,36,000
Operating Profit		2,44,000
Add: Non-operating Income:		
Dividend	24,000	
Profit on sale of Fixed Assets	1,20,000	1,44,000
		3,88,000
Less: Non-operating Expenses:		
Loss on sale of share		6,000
Net Profit		3,82,000

6.5.3 MANUFACTURING ACCOUNT

There are many firms, whether sole trader, partnership or limited company, which manufacture the final product to be sold from raw materials, e.g. a fertilizer company uses phosphates, ammonia and so on to produce finished fertilizer pellets.

Manufacturing account is required in order to arrive at the final cost of manufacture. The manufacturing organization will still need a trading and profit and loss account. The only major difference is that, in the trading account, the entry for purchases is replaced by the cost of manufacture. The cost of manufacture is calculated using a manufacturing account. Two important factors need to be taken into account:

Different types of cost

The costs needed to prepare a manufacturing account can be broken down into two main categories known as direct and indirect costs. The main or direct costs are those of raw materials and labour which together are known as the prime cost, although any expense which can be traced directly to any unit of production is also a direct cost. The indirect costs are those associated with production but cannot be traced directly to a particular production unit. These costs will include the general factory overheads such as light, heat and power, rent, rates, insurance, depreciation of production machinery, etc. Certain labour costs, such as supervision by foremen or factory managers, will also be indirect costs because they are not directly traceable to a production unit but are absorbed as a general overhead.

One complication in constructing the manufacturing account is to remember that there may be opening and closing stocks of raw materials and opening and closing values to attach to partly completed items (work in progress).

Proforma of manufacturing account

Particulars	Amount	Particulars	Amount
To Work in progress(opening) To Raw material consumed To Direct wages To Factory overheads		By Work in progress(closing) By Sale of scrap By Cost of finished goods manufactured transferred to trading a/c	
Total		Total	

6.6 INDIRECT EXPENSES

Indirect expenses are those expenses that are incurred to operate a business as a whole or a segment of a business, and so cannot be directly associated with a cost object, such as a product, service, or customer. A cost object is any item for which you are separately measuring costs.

Examples of indirect expenses are:

- Accounting, audit, and legal fees
- Business permits
- Office expenses
- Rent
- Supervisor salaries
- Telephone expense
- Utilities

Indirect expenses may or may not be allocated. For example, office administrative costs are indirect expenses, but are rarely allocated to anything, unless it is corporate overhead and is being allocated to subsidiaries. These types of indirect expenses are considered period costs, and so are charged to expense in the period incurred.

Indirect expenses like factory overhead will be allocated to those units produced in the factory during the same period that the indirect expenses were incurred, and so will eventually be charged to expense when the products to which they were allocated are sold.

Indirect Expenses & losses = Office Exp. + Selling exp. + Interest on Long

term Borrowings +Accidental Losses

Illustration -6.4 M/s Vijay has supplied to you the following trial balance as on 31st March. 2015

Particulars	Debit	Credit
Capital	--	40,000
12%Loan	10,000	--
Debtors & creditors	15,000	16,000
Purchases & sales	25,000	48,000
Returns	2,000	1,000
Wages	3,000	--
Cash in Hand	2,000	--
Interest on Loan	--	1,200
Furniture	12,000	-
Packing expenses on purchases	2,500	-
Drawings	10,000	-
Machine	30,000	-
Commission	--	5,000
Discount	3,200	300
Bank overdraft	--	6,000
Production Tax	900	-
Establishment charges	2,900	-
Bills payable	--	1,000
	1,18,500	1,18,500

Adjustments:

1. Closing stock was valued at Rs.11,000.
2. Wages not yet paid amounted Rs. 500.
3. Commission earned but not received is Rs. 800.

Solution

Trading and profit & loss account of M/s Vijay

For the year ending 31st march 2015

Particulars	Amount	Particulars	Amount
To Purchases		By Sales 48,000	
25,000	24,000	Less : Return 2,000	46,000
Less : Return		By Closing Stock	11,000
1,000	3,500		
To Wages			
3,000	2,500		
Add: Wages Due	900		
500	26,100		
To Packing expenses on purchase	57,000		57,000

To Production tax To Gross Profit c/d To Discount To Establishment charges To Net Profit	 3,200 2,900 27,300	 By Gross Profit b/d By interest on loan By Commission 5,000 Add: Accrued 800 By Discount received	 26,100 1,200 5,800 300
	33,400		33,400

Balance Sheet of M/s Vijay

As On 31st March 2015

Liabilities		**Amount**	**Assets**	**Amount**
Capital Add : Net Profit Less : Drawings Creditors Bank overdraft Bills payable Wages due	40,000 27,300 67,300 10,000	 57,300 16,000 6,000 1,000 500	12% Loan Debtors Cash in hand Furniture Machinery Closing stock Commission accrued	10,000 15,000 2,000 12,000 30,000 11,000 800
		80,800		80,800

6.7 SUMMARY

The purpose of the trading account is to show the gross profit on the sale of goods. Gross profit is the difference between the sale proceeds of goods and what those goods cost the seller to buy, or cost of sales. The cost of sales for this purpose includes the amount which has been debited for them to the purchases account plus the cost of getting them to the place of sale, which is usually the seller's premises, i.e. the carriage inwards of those goods.

Goods which have been returned by customers are represented by a debit balance on the sales return account. This must be transferred to the trading account; otherwise the sales and gross profit in that account will both be overstated. Following the same reasoning that allows us to deduct closing stock on the debit side of the trading account; we may deduct the debit balance on the sales returns account from the sales credited in the trading account. In this way, we show the net sales for the year. Net sales are known as turnover. Similarly, we show the credit balance on the purchases returns account as a deduction from purchases in the trading account to show the net cost of purchases. Goods which have been returned to suppliers must not be included in the cost of sales.

When examining a profit and loss statement, it is important to recognize one difference between manufacturers and retailers. For manufacturers the cost of goods sold involves the cost of manufacturing products (raw materials, labour and overheads). For retailers, the cost of goods sold involves the cost of merchandise purchased for resale (purchase price plus freight charges).

The balance sheet shows that the profit for an accounting period increases proprietor's funds. The trading and profit and loss account shows, in detail, how that profit or loss has arisen.

6.8 KEYWORDS

Gross sales: the total resources generated by the firm's products and services

Net sales: the revenues received by the firm after subtracting returns and discounts (such as trade, quantity, cash)

Cost of goods sold - the cost of merchandise sold by the manufacturer or retailer.

Gross margin (profit): the difference between sales and the cost of goods sold: consists of operating expenses plus net profits

Operating expenses: the costs of running a business, including marketing

Net assets: are defined as a business's total assets less total liabilities.

Liability: is defined as the amount owed by the business, i.e. an obligation to pay money at a future date.

Proprietor's fund: represents the total amount which the business owes to its owner or proprietor. This consists of:

6.9 TERMINAL QUESTIONS

1. What do you understand by Income? How it is measure?
2. Define indirect expenditure with an example.
3. How Profit and Loss Account is prepared? Explain with example.
4. Distinguish between Trading and Profit and Loss Account. Give a specimen of the Profit and Loss Account.
5. From the following Trial Balance of Deepak & Co., Prepare the trading and Profit and Loss Account for year ending on March 31, 2016 and Balance Sheet on that date.

Particulars	Dr. Amount(Rs.)	Cr. Amount(Rs.)
Capital		18616
Drawings	200	
Stock	6992	
Purchases	5120	
Office Salaries	670	
Wages	800	
Return Inward	120	
Freight on Purchases	328	
Machinery	1880	
Freehold Premises	4000	
Rent Received		120
Rent	330	
Trade expenses	120	
Sales		9072
Creditors		1152
Discount	96	
Cash	1312	
Fixed Deposit	4000	
Cash Bank	2616	
Debtors	376	
TOTAL	28960	28960

Adjustments

1. Value of stock on 31-03-2016 was Rs. 800.
2. Provide 10% depreciation on Machinery.
3. Create a bad debts reserve of Rs. 260.

6.10 SUGGESTED READINGS

- Advanced Accounting, C. M. Juneja, Kalyani publisher, Ludhiyana.

- Financial Analysis, Jagdish Prakash, Prayag Pustak Bhawan, Allahabad
- Analysis of Financial Statement, H.K.Singh & Meera Singh, Prayag Pustak Bhawan, Allahabad
- Advanced Accountancy Vol.1, S.N. Maheshwari & S.K. Maheshwari

Advanced Accountancy Principles Of Accounting by S.P Jain & K.L. Na

Unit-7 CONSTRUCTION AND ANALYSIS OF PROFIT AND LOSS ACCOUNT- II

Structure

7.1 INTRODUCTION

Information contained in financial statements is used by various users for decision making process. Users can know better about the financial strengths and weaknesses of the firm if they properly analyze the information contained in the financial statements. Analysis of financial statements is an attempt to assess the efficiency and performance of an enterprise. Thus, the analysis and interpretation of financial statements is very essential to measure the efficiency, profitability, financial soundness and future prospects of business units. The valuation of inventory is not a minor issue, because the accounting method used to create a valuation has a direct bearing on the amount of expense charged to the cost of goods sold in an accounting period, and therefore on the amount of income earned. Thus, the cost of goods sold is largely based on the cost assigned to ending inventory, which brings us back to the accounting method used to do so.

7.2 OBJECTIVES

After studying this unit, you shall be able to understand:

1. To measure the sufficiency of operations.
2. To decide about the future prospects of the firm.
3. To assess the financial health through profitability.
4. To decide the method of Inventory Valuation.

7.3 METHOD OF DEPRECIATION

Depreciation is a measure of the wearing out, consumption or other loss of value of a depreciable asset arising from use, obsolescence through technology and market changes. Depreciation is allocated so as to charge a fair proportion of the depreciable amount in each accounting period during the expected useful life of the asset. Depreciation includes amortization of assets whose useful life is predetermined.

Depreciation has a significant effect in determining and presenting the financial position and results of operations of an enterprise. Depreciation is charged in each accounting period by reference to the extent of the depreciable amount, irrespective of an increase in the market value of the assets. There are various methods of charging depreciation on fixed assets which are generally, based on the passage of time or the level of activity of the assets.

These are as follows:

1. Fixed Installment Method
2. Diminishing Balance Method
3. Annuity Method
4. Depreciation Fund Method
5. Insurance Policy Method
6. Sum of the year Digit Methods
7. Depletion Method
8. Revaluation Method
9. Replacement Method

Out of above methods mostly two methods are in used in practice:

7.3.1 Fixed Installment Method

It is also known as fixed cost or original cost or straight line method. Under this method a fixed percentage of original value of the asset is written off every year so as to reduce the asset account to nil or to its scrap value at the end of the estimated life of the asset. To ascertain the annual charge under this method all that is necessary is to divide the original value of the asset (minus residual value, if any) by number of years of its estimated life i.e., The following Formula is used to calculate depreciation:

Depreciation= (cost price of asset- scrap value)/ estimated life of the asset.

Advantages

1. Fixed installment method is simple and easy to work out.
2. The book value of the asset can be reduced to zero.
3. This method is given due recognition under the income Tax Act.
4. There is no change in the rate or the amount of depreciation over the useful life of the assets.

Disadvantages

1. No provision for the replacement of asset is made.
2. Difficulty is faced in calculation of depreciation on additions made during the year.
3. This method is simple but not very popular because of the fact that each year's depreciation charges are equal.

Illustration-7.1 On 1-1-2006 Mr. Gupta purchased a machine worth Rs. 1, 20,000. Its life was estimated to be Rs. 20 years with a residual value of Rs. 15,000. Prepare machinery accounts for first three years. The accounts are closed on 31 December each year.

Solution:

$$\text{Depreciation} = \frac{\text{Cost of Machine – Scrap Value}}{\text{Life of Machine}}$$

$$\text{Annual Depreciation} = \frac{1,20{,}000-15{,}000}{20} = 5{,}250$$

Dr. **Machinery Account** Cr.

Date	Particulars	Amount	Date	Particulars	Amount
2006 Jan.1	To Cash	1,20,000	2006 Dec. 31	By Depreciation A/c By Balance c/d	5,250 1,14,750
		1,20,000			1,20,000
2007 Jan.1	To Balance b/d	1,14,750	2007 Dec. 31	By Depreciation A/c By Balance c/d	5,250 1,09,500
		1,14,750			1,14,750
2008 Jan.1	To Balance b/d	1,09,500	2008 Dec. 31	By Depreciation A/c By Balance c/d	5,250 1,04,250
		1,09,500			1,09,500

7.3.2. DIMINISHING BALANCE METHOD

It is also known as Reducing Installment or written down value Method. Under this method, depreciation is calculated at a certain percentage each year on the balance of the asset which is brought forward from the previous year. The amount of depreciation charge in each period is not fixed but it goes on decreasing gradually as the beginning balance of the asset in each year will reduce.

Advantages

1. Income Tax Officers prefer this method for assessment of income from business and profession.
2. It provided the facility of replacement of fixed assets as it makes more fund available in the early stage of life of the assets.

Disadvantage

1. It is difficult to calculate optimum rate of depreciation.
2. Value of assets cannot be reduced to zero.
3. All new and old assets are mixed with each other, for an auditor, it is so difficult to differentiate among them.

Illustration-7.2 Raj and Co. purchased a machine on Jan.1, 2005 at a cost of Rs. 10,000 and spent Rs. 2000 on its installation. The firm writes off depreciation @ 10% p.a. by W.D.V. method. The scrap value of the machine at the end of its economic life of 4 years is Rs. 7,873.20. Prepare the machine account for 4 years in the books of Co. Books are closed on 31st Dec each year.

Solution:

Dr. **Machinery Account** Cr.

Date	Particulars	Amount	Date	Particulars	Amount
2005 Jan.1	To bank (10,000+2,000)	12,000 12,000	2005 Dec.31	By Depreciation A/c By Balance c/d	1,200 10,800 12,000
2006 Jan.1	To Balance b/d	10,800 10,800	2006 Dec.31	By Depreciation A/c By Balance c/d	10,800 9,720 10,800

2007 Jan.1	To Balance b/d	9,720 9,720	2007 Dec.31	By Depreciation A/c By Balance c/d	972 8,748 9,720
2008 Jan.1	To Balance b/d	8,748.00 8,748.00	2008 Dec.31	By Depreciation A/c By Balance c/d	874.80 7,873.20 8,748.00

7.4 FORM OF PROFIT AND LOSS ACCOUNT

A profit and loss statement (P&L) is a financial statement that summarizes the revenues, costs and expenses incurred during a specific period of time, usually a fiscal quarter or year. These records provide information about a company's ability – or lack thereof – to generate profit by increasing revenue, reducing costs, or both. The P&L statement is also referred to as "statement of profit and loss", "income statement," "statement of operations," "statement of financial results," and "income and expense statement."

Profit and Loss Account

Particulars	**Amount**	**Particulars**	**Amount**
To Gross Profit b/d (If Any) To Salaries To Commission To Advertisement To Bad Debts To Insurance To Distribution Expenses To Interest On Capital To Provision For Bad Debts To Net Profit transferred to Capital A/C		By Gross Loss b/d (If Any) By Discount Received By Interest Received By Commission Received By Net Loss transferred to Capital A/C	
Total		**Total**	

The format of Profit and Loss Account is given in Company Act 2013.

PART II-FORM OF STATEMENT OF PROFIT AND LOSS

Name of the Company…………..

Statement of Profit & Loss (for the year ended………)

(Rupees in…………)

Particulars	Note No.	Figures for the current reporting period	Figures for the previous reporting period
I. Revenue from operations			
II. Other income			
III. Total Revenue (I+II)			
IV. Expenses:			
Cost of material consumed			
Purchase of Stock-in-trade			
Changes in inventories of finished goods, work in progress and stock-in-trade			
Employees benefit expense			
Finance cost			
Depreciation and amortization expense			
Other expenses			
Total Expense			
V. Profit before exceptional and extraordinary items and tax(III-IV)			
VI. Exceptional items			
VII. Profit before extraordinary items and tax (V-VI)			

VIII. Extraordinary items IX. Profit before tax(VII-VIII) X. Tax expenses 1. Current tax 2. Deferred tax XI. Profit/(Loss) for the period from continuing operations (after tax)(IX-X) XII. Profit/(Loss) from discontinuing operations XIII. Tax expense on discontinuing operations XIV. Profit/(Loss) on discontinuing operations(after tax)(XII-XIII) XV. Profit/(Loss) for the period (XI+XIV) XVI. Earning per share: 1. Basic 2. Diluted					

7.5 COST OF GOODS SOLD

Cost of goods sold is the accumulated total of all costs used to create a product or service, which has been sold. These costs fall into the general sub-categories of direct labor, materials, and overhead. In a service business, the cost of goods sold is considered to be the labor, payroll taxes, and benefits of those people who generate billable hours (though the term may be changed to "cost of services"). In a retail or wholesale business, the cost of goods sold is likely to be merchandise that was bought from a manufacturer.

In the income statement presentation, the cost of goods sold is subtracted from revenues to arrive at the gross margin of a business.

The cost of goods sold can be fraudulently altered by a number of means in order to change reported profit levels, such as:

- Altering the bill of materials and/or labor routing records in a standard costing system
- Incorrectly counting the quantity of inventory on hand
- Performing an incorrect period-end cutoff

- Allocating more overhead than actually exists to inventory

Cost of goods sold (COGS) is the direct costs attributable to the production of the goods sold by a company. This amount includes the cost of the materials used in creating the goods along with the direct labor costs used to produce the goods. It excludes indirect expenses such as distribution costs and sales force costs. COGS appears on the income statement and can be deducted from revenue to calculate a company's gross margin. It is also referred to as "cost of sales." COGS is the cost of creating the products that a company sells; therefore, the only costs included in the measure are those that are directly tied to the production of the products.

Cost of revenue from Operation can be calculated by two ways:-

(i) Cost of revenue from Operation = Operating Inventory +Purchases + Carriage + Wages+ Other direct charges – Closing Inventory

OR

(ii) Cost of Revenue from Operation = Net Revenue from Operation – Gross Profit

Illustration-7.3 Calculate Cost of Revenue from Operation from the data given below:-

Particulars	Rs.
Inventory at the beginning of the year	20,000
Inventory at the end of the year	10,000
Purchases	50,000
Carriage	5,000
Revenue from Operation	1,00,000

Cost of Revenue from Operation = 20,000+50,000+5,000-10,000 = **65,000**

7.6 METHOD OF INVENTORY VALUATION

An **inventory valuation** allows a company to provide a monetary value for items that make up their inventory. Inventories are usually the largest current asset of a business, and proper measurement of them is necessary to assure accurate financial statements. If inventory is not properly measured, expenses and revenues cannot be properly matched and a company could make poor business decisions.

Inventory accounting systems: The two most widely used inventory accounting systems are the periodic and the perpetual.

- **Perpetual:** The perpetual inventory system requires accounting records to show the amount of inventory on hand at all times. It maintains a separate account in the subsidiary ledger for each good in stock, and the account is updated each time a quantity is added or taken out.
- **Periodic:** In the periodic inventory system, sales are recorded as they occur but the inventory is not updated. A physical inventory must be taken at the end of the year to determine the cost of goods.

Regardless of what inventory accounting system is used, it is good practice to perform a physical inventory at least once a year.

Perpetual System of Inventory Valuation:

The perpetual system records revenue each time a sale is made. Determining the cost of goods sold requires taking inventory. The most commonly used inventory valuation methods under a perpetual system are:

1. first-in first-out (FIFO)
2. last-in first-out (LIFO)
3. average cost or weighted average cost

There are three basis approaches to valuing inventory; these are given in detail:

(a) First-in, First-out (FIFO) : Under FIFO, the cost of goods sold is based upon the cost of material bought earliest in the period, while the cost of inventory is based upon the cost of material bought later in the year. This results in inventory being valued close to current replacement cost. During periods of inflation, the use of FIFO will result in the lowest estimate of cost of goods sold among the three approaches, and the highest net income.

(b) Last-in, First-out (LIFO) : Under LIFO, the cost of goods sold is based upon the cost of material bought towards the end of the period, resulting in costs that closely approximate current costs. The inventory, however, is valued on the basis of the cost of materials bought earlier in the year. During periods of inflation, the use of LIFO will result in the highest estimate of cost of goods sold among the three approaches, and the lowest net income.

(c) Weighted Average : Under the weighted average approach, both inventory and the cost of goods sold are based upon the average cost of all units bought during the period. When inventory turns over rapidly this approach will more closely resemble FIFO than LIFO.

Firms often adopt the LIFO approach for the tax benefits during periods of high inflation, and studies indicate that firms with the following characteristics are more likely to adopt LIFO - rising prices for raw materials and labor, more variable inventory growth, an absence of other tax loss carry forwards, and large size. When firms switch from FIFO to LIFO in valuing inventory, there is likely to be a drop in net income and a concurrent increase in cash flows (because of the tax savings). The reverse will apply when firms switch from LIFO to FIFO.

Given the income and cash flow effects of inventory valuation methods, it is often difficult to compare firms that use different methods. There is, however, one way of adjusting for these differences. Firms that choose to use the LIFO approach to value inventories have to specify in a footnote the difference in inventory valuation between FIFO and LIFO, and this difference is termed the LIFO reserve. This can be used to adjust the beginning and ending inventories, and consequently the cost of goods sold, and to restate income based upon FIFO valuation.

These methods produce different results because their flow of costs is based upon different assumptions. The FIFO method bases its cost flow on the chronological order purchases are made, while the LIFO method bases it cost flow in a reverse chronological order. The average cost method produces a cost flow based on a weighted average of goods.

Periodic versus Perpetual systems

There are fundamental differences for accounting and reporting merchandise inventory transactions under the periodic and perpetual inventory systems. To record purchases, the periodic system debits the Purchases account while the perpetual system debits the Merchandise Inventory account. To record sales, the perpetual system requires an extra entry to debit the Cost of goods sold and credit Merchandise Inventory. By recording the cost of goods sold for each sale, the perpetual inventory system alleviated the need for adjusting entries and calculation of the goods sold at the end of a financial period, both of which the periodic inventory system requires.

Check Your Progress

Q1. What is the formula for computing depreciation under Fixed Installment method?

……………………………………………………………………………
……………………………………………………………………………
…………………….

Q2. What are the disadvantages of Diminishing Balance Method?

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……………………………………………………………………………
……………………………………………………………………………
………………………………

Q3. How is inventory valued under LIFO method?

……………………………………………………………………………
……………………………………………………………………………
……………………………………………………………………………
………………………………..

Illustration-7.4 The following transactions are related to purchases and issue of material in a firm during January 2012

The stock on 01-01-2012 was 300 units @ 50 per unit.

Receipts Dates	Quantity	Rate Per Unit	Issues Dates	Quantity
06-01-2012	150	48	08-01-2012	370
09-01-2012	240	49	10-01-2012	190
12-01-2012	180	48.50	15-01-2012	270

Solution:

FIFO method
Stress ledger Account

Date	Receipts			Issues			Balance		
	Qty.	Rate	Amt.	Qty.	Rate	Amt.	Qty.	Rate	Amt.
2012									
Jan.1							300	50	**15,000**
Jan.6	150	48	7,200				300	50	15,000
							150	48	7,200
									22,200
Jan.8				300	50				
				70	48	18360	80	48	3,840
Jan. 9	240	49	11760				240	49	11,760
									15,600
Jan.10				80	48				
				110	49	9,230	130	49	**6,370**
Jan.12	180	48.50	8,730				180	48.50	8,730
									15,100
Jan.15				130	49				
				140	48.50	13,160	40	48.50	**1,940**

7.7 GROSS PROFIT, OPERATING PROFIT, NET PROFIT

Company owners, managers, bankers, and investors often talk about profits or income when discussing the financial performance of a business, but each may focus on very different numbers. While gross profits, operating income, net income and EBITDA all relate to earnings, each emphasizes a different aspect of financial performance.

Gross Profit

Gross Profit is revenue minus the cost of making a product or selling a service. This is profit earned after direct expenses such as manufacturing labor, materials, supplies and some direct overhead costs are subtracted from revenue. These direct costs are usually referred to as Cost of Goods or Cost of Sales. Wages paid to workers who harvest, roast and package coffee beans, bag and box costs, maintenance costs, and other expenses incurred during the harvesting and packaging process might all be included in cost of goods.

Gross profit = Revenue from Operation – Cost of Revenue from Operations

Cost of Revenue from Operations = Opening Inventories + Purchases - Returns

Outwards + Wages – Closing Inventories

Operating Profit

Operating profit is the balance remaining of revenue from sales less the direct and indirect expenses. Put another way, operating profit is the gross profit less the indirect expenses. Operating profit is often referred to a net profit because it is net of all expenses, both direct and indirect. Operating profit may also be presented as a percentage value. Operating profit percentage is calculated by dividing the operating profit.

Operating Profit = Gross profit – Other Operating Exp. + Other Operating Incomes

Net Profit

Net profit is referred to as the bottom line, net income, or net earnings is a measure of the profitability of a venture after accounting for all costs. It is the actual profit without inclusion of working expense in the calculation of gross profit.

Net Profit = gross profit – Indirect Expenses& Losses + other Income – Tax

Indirect Expenses & losses = Office Exp. + Selling exp. + Interest on Long term Borrowings

+ Accidental Losses

Basis of Comparison	**Gross Profit**	**Operating Profit**	**Net Profit**
Meaning	Gross Profit is the income of the company left after paying off the direct expenses.	Operating Profit is the income of the company left after paying off operating expenses.	Net Profit is the residual income left with the company after all deductions.
Objective	A rough estimate about the company's profitability.	To know how well the company is allocating its resources on expenses.	To know the actual profit made in a particular accounting year.
Advantage	Helpful in controlling excess costs.	Helpful in eliminating unnecessary operating expenses.	Helpful in knowing the performance of the company in a financial year.

Illustration-7.5 Calculate Gross Profit from the following:

S. No.	Items	Amount
1.	Operating Inventories	50,000
2.	Purchases	1,50,000
3.	Returns Outwards	20,000
4.	Wages	10,000
5.	Revenue from Operations	2,50,000
6.	Closing Inventories	40,000

Solution:

Gross profit = Revenue from Operation – Cost of Revenue from Operations

Cost of Revenue from Operations = Opening Inventories + Purchases - Returns

Outwards + Wages – Closing Inventories

= 50,000+1, 50, 000-20,000+10,000-40,000

= 1, 50, 000

Gross Profit = 2, 50, 000 -1, 50, 000=1, 00,000

Illustration-7.6 From the following calculate: (a) Net Profit (b) Operating Profit

S. No.	Items	Amount
1.	Revenue from Operation	2,00,000
2.	Gross profit	75,000
3.	Office Expenses	15,000
4.	Selling Expenses	26,000
5.	Interest on Debentures	5,000
6.	Accidental	12,000
7.	Income from Rent	2,500
8.	Commission received	2000

Solution:

(a) Indirect expenses and losses = 15,000+26,000+5,000+12,000 = 58,000

Other Incomes = 2,500+2,000 = 4,500

Net Profit = 75,000-58,000 + 4,500 = 21,500

(b) Other operating Expenses = 15,000+26,000 = 41,000

Operating Profit = 75,000+2,000-41,000 = 36,000

7.8 SUMMARY

The financial statements viz. Profit and Loss a/c and Balance sheet portray the financial position of the business. It must be ensured that the accounting principles are strictly adhered to. This will ensure that the financial statements exhibit a true and fair view of the affairs of the business. Depreciation has a significant effect in determining and presenting the financial position and results of operations of an enterprise.

Under certain circumstances, valuation of inventory based on cost is impractical. If the market price of a good drops below the purchase price, the lower of cost or market method of valuation is recommended. Cost of goods sold (COGS) is the direct costs attributable to the production of the goods sold by a company. This amount includes the cost of the materials used in creating the good along with the direct labor costs used to produce the good. It excludes indirect expenses such as distribution costs and sales force costs. Company owners, managers, bankers, and investors often talk about profits or income when discussing the financial performance of a business, but each may focus on very different numbers. While gross profits, operating income, net income and EBITDA all relate to earnings, each emphasizes a different aspect of financial performance. Financial analysis determines organization's health and stability, providing an understanding of how the company conducts its business. Gross profit is sometimes also called gross profit margin or simply margin. Gross profit may also be presented as a percentage value. Operating Margin is calculated by dividing operating income by revenue. Again, operating margin provides a way to compare companies with different revenue levels to determine who performed best after most expenses are subtracted.

7.9 KEYWORDS

Net sales = Gross sales – (Customer Discounts, Returns, Allowances)

Gross profit = Net sales – Cost of goods sold

Gross profit percentage = {(Net sales – Cost of goods sold)/Net sales} x 100.

Operating Profit = Gross Profit – Total operating expenses

Net income (or Net profit) = Operating Profit – taxes – interest

7.10 TERMINAL QUESTIONS

1. Define depreciation. Also explain Fixed Installment Method

2. What do you understand by cost of goods sold?

3. Explain method of inventory valuation with an example.

4. Calculate the costs of goods sold and the value of ending inventory from the following data under:

(i) FIFO (ii) LIFO

Date	Particulars	Units	Price per Unit
Jan 1,2010	Opening Stock	1,000	20
Feb. 4,2010	Purchases	600	23
March 5,2010	Purchases	300	24
March 12,2010	Sold	1,2000	
April 5,2010	Sold	400	
April 10,2010	Purchase	300	23
May 2,2010	Sold	500	

Ans. Closing of Goods sold: FIFO= 45,600, LIFO 45,900

5. On 1st April, 2010, Satender purchased a machinery of costing Rs 80,000 and spent Rs 10,000 on its installation. The estimated life of machinery is 10 years with scrap value of 10,000. Calculate depreciation on the straight line method and prepare machinery account for first three years. Accounts are closed on 31st March every year.

Ans. Balance of Machinery a/c 66,000.

6. A company purchased a machine for Rs 40,000 on 1st July ,2004 and on Jan.1,2005 another machine was purchased for Rs 24,000. On April 1, 2006 the first machine purchased on 1st July, 2004 was sold for Rs 33,000 and a new machine was purchased on the same day for Rs 20,000. On Jan.1, 2008 the second machine which was purchased on Jan.1,2005 was sold for Rs 17800. Prepare machinery account for 4 years, providing depreciation by diminishing balance method @ 10% per annum. Company is using calendar year for completion the accounts.

Ans. Loss on Machine sold on april1,2006=Rs 345

Profit on sale of machine on Jan.1,2008=Rs 304

Balance of machine A/c on Jan.1,2008=Rs16,650

7.11. SUGGESTED READINGS

- Advanced Accounting, C. M. Juneja, Kalyani publisher, Ludhiyana.
- Financial Analysis, Jagdish Prakash, Prayag Pustak Bhawan, Allahabad

- Analysis of Financial Statement, H.K.Singh &Meera singh, Prayag Pustak Bhawan, Allahabad
- Advanced Accountancy Vol.1, S.N. Maheshwari & S.K. Maheshwari
- Advanced Accountancy Principles Of Accounting by S.P Jain & K.L. Narang

Unit-8 CONSTRUCTION AND ANALYSIS OF FUND FLOW STATEMENT

Structure

8.1 INTRODUCTION

The balance sheet and income statement are the traditional basic financial statements of a concern. They furnish useful financial information regarding the operation of the concern; however, a serious limitation of these statements is that they fail to provide changes in the financial position of a concern during a particular period of time. Funds flow statement, which is known as the statement of changes in financial position, overcomes these limitations of traditional financial statements.

The statement of changes in financial position is a statement of flows of recourses of a concern. The statement of changes in financial position measures the changes that have taken place in the financial position of a concern between two balance sheet dates. It summarizes the sources from which funds have been obtained and the uses to which they have been utilized.

8.2 OBJECTIVES

After studying this unit, you shall be able to understand:

- Sources and Uses of Funds
- Construction of Fund Flow Statement

8.3 Meaning of Fund Flow Statement

The funds flow statement is a financial statement which reveals the methods by which the business has been financed and how it has used its funds between the opening and closing balance sheet dates. The analysis of such statements over periods of time clearly shows the sources from which past activates have been financed and brings to highlight the uses to which such funds have been put, the statement is known by various titles, such as, statement of sources and applications of Funds, Statement of Changes in Working Capital, where got and gone statement and statement of Resources provided and applied.

In a narrow sense the term fund means cash and the fund flow statement depicts the cash receipts and cash disbursements/payments. It highlights the changes in the cash receipts and payments as a cash flow statement in addition to the cash balances i.e., opening cash balance and closing cash balance. Contrary to the earlier, the fund means working capital i.e., the differences between the current assets and current liabilities.

The term flow denotes the change. Flow of funds means the change in funds or in working capital. The change on the working capital leads to the net changes taken place on the working capital i.e., especially due to either increase or decrease in the working capital. Some of the transactions may lead to increase or decrease the volume of working capital. Some other transactions neither register an increase nor decrease in the volume of working capital.

According to **Smith Brown**, "Funds Flow Statement is prepared in summary form to indicate changes (and trends if prepared regularly) occurring in items of financial condition between two different balance sheet dates."

According to **R.N. Anthony**, “Funds Flow Statement is a statement prepared to indicate the increases in the cash resources and the utilization of such resources of a business during the accounting period."

According to **Fouke** “A statement of source and application of funds is a technical device designed to analyze the changes to the financial condition of a business enterprise in between two dates”

8.4 OBJECTIVES OF FUNDS FLOW STATEMENT

Generally a business prepares two financial statements i.e., position statement or balance sheet and income statement or profit and loss account. The former reflects the state of assets and liabilities of a company on a particular date where the latter tells about the result of operations of the company over a period of a year. These financial statements have great utility but they do not reveal the movement of funds during the year and their consequent effect on its financial position. For example, a company which has reportedly made substantial profits during the year may discover to its surprise that there are not enough liquid funds to pay dividend and income tax because of profits tied up in other assets, and is always after the bank authorities to get the cash credit or bank overdraft facility. In order to remove this defect, another statement known as funds flow statement is prepared. Thus the main purposes of such statement are:

(i) To help understand the changes in assets and asset source which are not readily evident in the income statement or the financial position statement.

(ii) To inform how the loans to the business have been used, and

(iii) To point out the financial strengths and weakness of the business.

8.5 DIFFERENCE BETWEEN FUNDS FLOW STATEMENT AND INCOME STATEMENT

The following are the main difference between funds flow statement and income statement:

Points of Distinction	Funds Flow statement	Income statement
1. Disclosure in Statement	Funds statement deals with the financial resources required for running the business activities i.e., where from the funds are obtained and how they are used.	This statement discloses the operating result of the business activities (i.e., profit or loss) which the concern has earned/lost during a specified period.
2. Matching	This statement matches the funds raised with funds applied without making any distinction between capital and revenue items.	This matches the cost of goods sold with the revenue in order to know the profit or loss.
3. Funds from Operations	There may be many other sources as share capital, debentures, sale of fixed assets beside funds from Operations. While calculating the amount of funds	This statement tells the funds from operations only after making adjustments for depreciation, writing off preliminary expenses and goodwill etc.

	from operations, adjustments for depreciation, goodwill written off and preliminary expenses are made.	
4. Period of preparation	It is usually prepared every year.	It is usually prepared after six months or a year.
5. Depicts	It depicts the comparative position of working capital on two balance sheet dates.	It depicts the profit or loss made during a specified period.
6. Reliability	It is more reliable as items shown in this statement cannot be easily manipulated by the management.	It is not very reliable as items shown in profit or loss accents like depreciation or valuation of closing stock can be easily manipulated by the management.
7. When Prepared	It can be prepared before the actual operations of the business for efficient working capital management	It is always prepared after the actual operations of the business.
8. Scope	It presents information only relating to working capital and thus its scope is limited.	It presents the results of all financial transactions of the business during a specified period.
9. Balance Represents	The excess of source over applications is known as increase in working capital whiles the excess of applications over uses in known as decrease in working capital.	The excess of incomes and gains over expenses and losses I known s net profit and the excess of expenses and losses over incomes and gains is known as net loss.

8.6 Analysis of Changes in Working Capital

Working capital requirement is determined by current assets and current liabilities. Working capital means the excess of current asserts over current liabilities. Statement of changes in working capital is prepared between the two balance sheet dates. This statement is prepared with the help of current assets and current liabilities derived from the two balance sheets. Maintaining optimal level of working capital is crux of problem. A firm is required to carry adequate amount of working capital.

Working capital = Current Assets –Current liabilities

Working capital also depends on nature of business. The some other factors are:

1. Factor Influencing level of cash

2. Factor Influencing level of receivable requirement

3. Factor Influencing level of inventory requirement

Schedule for Changes in working capital

Items	Previous year	Current year	Effect on working capital	
			Increase	**Decrease**
(A) Current Assets				
Cash at bank				
Cash in hand				
Stock in trade				
Debtors				
Short term investment				
Bills receivable				
Prepaid expenses				
Accrued income				
Advance payment				
Total (A)				
(B) Current liabilities				
Short term loans				
Bills payable				

Creditors Outstanding expenses Unclaimed dividends Bank over draft				
Total (B)				
Net working capital (A-B) **Increase / decrease in working capital**				
Total				

Illustration-8.1 Form the following Balance Sheet of a company, prepare Schedule of Change in working Capital:

Liabilities	31st March 2009	31st Mach 2008	Assets	31st March 2009	31st March 2008
Creditors	45,000	50,000	Goodwill	5,000	10,000
Bills payable	35,000	20000	Cash	70,000	25,000
Loans (long-term)	20,000	—	Account Receivable	90,000	98,000
Receivable	90,000	98,000	Closing stock	1,20,000	87,000
Share Capital	1,50,000	1,25,000	Investments (long-term)	10,000	15,000
Profit & Loss	75,000	60,000	Land	27,000	15,000
			Preliminary Expenses	3,000	5,000
	3,25000	2,55,000		3,25,000	2,55,000

TESLA-016

Solution:

SCHEDULE OF CHANGES IN WORKING CAPITAL

Particulars	31st March 2008	31st March 2009	Change in Working capital	
			Increase	Decrease
Current Assets:				
Cash	25,000	70,000	45,000	
Accounts Receivable	98,000	90,000		8,000
Closing stock	87,000	1,20,000	33,000	
	2,10,00	2,80,000		
Current Liabilities:				
Creditors	50,000	45,000	5,000	
Bills Payable	20,000	35,000		15,000
	70,000	80,000		
Net Working capital	1,40,000	2,00,000		
Increase in Working Capital(83,000-23,000)	60,000			60,000
	2,00,000	2,00,000	83,000	83,000

Check Your Progress

Q1. What is Working Capital?

………

Q2. Give five examples of current assets.

………

Q3. State three factors affecting requirement of working capital.

………

8.7 SOURCES OF FUNDS

Various sources of fund are: Fund from operation, sale of fixed assets, issue of new share capital, issue of new debenture and raising of loan etc, Let us explain each:

(i) Fund from Operation: Here various adjustments are made to the existing profits. Non-fund items are added to it, e.g., Goodwill written off, depreciation and transfer to general reserves etc. On the other hand non-fund incomes are deducted from it, e.g. profit on sale of fixed assets, interest on debenture, rent from house property etc.

(ii) Sale of Fixed Assets: Here non-current assets are converted into current assets thus it is a source of fund. Thus, the sale may result into profit or loss does not matter much, the amount realized is shown as source.

Note: Even credit sale does not result cash flow, but it will affect fund flow when sales are made on credit, the share of profit will be shown as source of fund.

(iii) Issue of new Share Capital: When fresh shares are issued it is fund flow since non-current liability is increased which results in flow of funds. When shares are issued at premium, the amount of premium is also being shown as flow of fund.

(iv) Issue of Debenture: Debenture is a non-current liability, its issue increases cash balance. Hence, current asset increases which results in flow of funds. The net proceeds (with premium or afer discount), is source of funds.

(v) Long-term Loans: By taking loans working capital is increased thus, it is inflow of funds. Short-term loans are not taken here as it increases current assets and current liabilities both.

(vi) Dividend received: Cash received from outside investment as interest and Dividend will increase the Working Capital and hence it is a source of fund.

8.8 USES OF FUNDS

Funds received by the business concern are used in one way or another. The funds may be used for redemption of Debentures or Preference Shares, Purchase of Fixed Assets or Current Assets like stock and raw material. Some time funds are lost in business operation even. Hence loss from operation is also uses of fund. Application or use means outflow of fund during current year.

The following are the main items of application of fund:

(i) Purchase of Fixed Assets : When Fixed Assets are purchased in cash then there is outflow of fund of cash thus, current asset is reduced. When these are purchased on credit, then current liability is increased therefore, working capital is reduced. Hence in both the case there is application of fund.

(ii) Redemption of Preference Share Capital : At the time of redemption, net amount paid to preference shareholders (with premium or after discount) reduces the working capital. Thus, it is uses of funds.

(iii) Repayment of long-term loans : While payment of long-term loans is made in cash it reduces the Working Capital which is known as application of funds.

(iv) Redemption of debentures : The amount of debentures and its premium if any is paid back to the debenture-holders are known as application of fund because it reduces the Working Capital.

(v) Loss from Operation : The funds may be lost, if there is a loss in the business. The loss suffered must be operating loss. In other words, loss from operation reduces Working Capital; hence it is an application of fund.

(vi) Amount withdrawn by the proprietor : If proprietor of the business withdraws any amount for his personal use then his drawings account will be debited and Cash Account will be credited. Since Drawings Account is a Non-current Account and Cash Account is a current account hence it will reduce Working Capital and it is application of fund.

8.9 STEPS IN PREPARATION OF FUND FLOW STATEMENT

- First step is to prepare the statement of changes in working capital i.e., to identify the flow of fund / movement of fund through the detection of changes in the volume of working capital.
- Second step is to identify the changes in the volume of Non-current a/c in order to quantify the flow of fund i.e. either sources or application of fund.
- Third step is the preparation of Adjusted Profit& Loss A/c
- The Last step is the preparation of fund flow statement

Schedule of Changes in Working Capital

This statement is prepared from current asses and current liabilities in order to calculate the increase or decrease in working capital. The following rules may be applied to current assets and current liabilities for preparing this statement:

(i) An increase in current assets increases working capital;

(ii) A decrease in current assets decreases working capital;

(iii) An increase in current liabilities decreases working capital; and

(iv) A decrease in current liabilities increases working capital.

We have already discussed this statement in detail in the earlier part of this unit (8.6).

Identifying Sources and Uses of Fund:

The following are the sources from which funds come:

- Funds from operations
- Income from investments
- Issue of share and debentures

- Raising a loan
- Sale of fixed assets and long term investment
- Receipt of interest on non trade investment, dividend, refund of tax etc.
- Decrease in working capital etc

The following are the various purposes for which fund can be used.

- Funds lost In operations
- Repayment of long term loans
- Redemption of preference shares and debentures
- Purchase of fixed assets
- Purchase of long-term investments.
- Payment of cash dividends
- Payment of taxes
- Drawings in case of proprietary or partnership business
- Increase in working capital etc

We have already discussed these items in detail in 8.7 and 8.8 sections of this unit.

Calculation of Funds from Operations

Profit is very important source of fund in a business. In fact, profit from operation is the only item of source which is generated by the internal sources, i.e., by the operations of business activity. In other words fund from operation represent the change in working capital (fund) brought about by the business operations or transactions involving account which represent expenses and incomes. It is important to note that net profit shown by the P & L A/c does not always correctly represent the amount of funds from operation. The reason is that certain items appeared in the P & L A/c is not related to the business operations. So first of all we have to find out the correct amount of funds from operation.

There are two methods of calculating the funds from operations:

1. By preparing again profit and loss account showing income only relating to the business and expenses which are paid and relating to the business. The residual figure will be funds from operations. Non-cash like depreciation and non-operating expenses like trademarks, preliminary expenses, patents, goodwill, and loss on the sale of assets, proposed dividend, provisions and reserves for any asset are not debuted. Similarly, non-operating income like profit on the sale of any asset, dividend received, or any other income not relating to the business is not taken into consideration while calculating funds from operations.

2. By starting with the net profit already calculated, add non-operating expenses (i.e. not relating to the business) such as trademarks, preliminary expenses, patents, goodwill, loss on sale of assets, provision or reserve for any asset or expenses, proposed dividends, non-cash items as depreciation and deduct those incomes which are not relating to business (i.e. non-operating income) such as profit on the sale of an asset, dividend received, refund of tax etc. This can be done by preparing Adjusted Profit and Loss Account as per following format:

Adjusted Profit and Loss Account

To No-cash Items:	By Net Profit b/d
Depreciation or depletion of natural resources	By Non-operation Income:
To Non-operating Expenses	-Interest received
(i) Capital losses :	-Profit on the sale of fixed assets
-Loss on the sale of fixed assets such as machinery	-Dividend Received
--Premium on redemption of debentures or preference share	- Refund of taxation
(ii) Fictitious Assets written off:	-Transfer fee
-Preliminary Expenses	-Profit on Revaluation of Assets
-Discount on issue of share and debentures	By Funds from operations (Balancing figure)
-Underwriting Commission	
-Advertisement suspense A/c	
(iii) Intangible Assets written off:	
-Goodwill	
-Copyright	
-Patents and trade Marks	
(iv) Appropriation of profits:	
-Dividends(Interim/Final)	
-Income Tax or Provision for Income Tax	
- Transfer to any reserve	
To Net Profit c/d:	

Fund Flow Statement

This statement is usually prepared in 'T' from. Left hand side is for source of funds and right hand side for applications of funds.

The format of fund flow statement is as follows:

Fund Flow Statement

Sources of funds	Amount	Application of funds	Amount
Fund from operation (if any) Issues of debentures Issue of share Raising of long term loan Sale of fixed assets Sale of investment Non trading receipts Decrease in working capital(if any)		Loss from operation (if any) Redemption of preference share capital Redemption of debenture Repayment of long term loan Purchase of fixed assets Purchase of investment Payment of dividend and taxes Non trading payments Increase in working capital(if any)	

Now a days, fund flow statement is prepared in vertical form in which firstly sources of funds are shown and after making its total, application of funds are shown.

Illustration-8.2 The Balance Sheet of P. LTD for the year 2009 and 2010 were as follows:

Liabilities	2009	2010
Share capital	1,80,000	2,60,000
General reserve	20,000	30,000
Profit & loss	40,000	60,000
15% debenture	-	40,000
Creditors	60,000	80,000
Bills payable	14,800	4,000
	3,14,800	4,74,000
Assets	**2009**	**2010**
Fixed assets	1,86,800	3,32,000
Stock	44,000	52,000
Debtors	72,000	78,000
Bank	8,000	10,000

Discount on share	4,000	2,000
	3,14,800	4,74,000

Additional Information:

(i) Depreciation written off on fixed assets 46,800

(ii) Dividend of 40,000 was paid on share.

Prepare a schedule of changes in working capital and a statement showing sources and uses of funds.

Solution:

P.Ltd

Schedule of Changes in Working Capital

Particulars	**2009**	**2010**	**Increase**	**Decrease**
Current Assets:				
Stock	44,000	52,000	8,000	
Debtors	72,000	78,000	6,000	
Bank	8,000	10,000	2,000	
	1,24,000	1,40,000		
Total				
Current liabilities:				20,000
Creditors	60,000	80,000		
Bills payable	14,800	4,000	10,800	
	74,800	84,000		
Total	49,200	56,000		
Net Working capital	6,800			6,800
Increase in W.C.	56,000	56,000	26,800	26,800

FUND FLOW STATEMENT

Sources	**Amount**	**Application**	**Amount**
Funds from operation	1,18,800	Fixed assets Purchased	1,92,000
Share capital Issues	80,000	Dividend paid	40,000
15 % Debenture Issued	40,000	Net Increase in working capital	6,800
	2,38,800		2,38,800

Working notes:

Calculation of Funds From Operations

Net profit		20,000
Add: Non – fund expenses:		
General reserve	10,000	
Depreciation	46,800	
Dividend	40,000	
Discount on issue of share	2,000	98,800
Less: Non- fund Incomes:		Nil
Funds from operations		1,18,800

FIXED ASSETS A/C

Particulars	**Amount**	**Particulars**	**Amount**
To Balance B/d To Cash (Purchases)	1,86,800 1,92,000	By depreciation By balance c/d	46,800 3,32,000
	3,78,800		3,78,800

8.10 SUMMARY

Fund flow statement reports the flow of funds through the firm during the year. In order to prepare fund flow statement proper understanding of working capital and sources and application is necessary .The fund flow statement is a record, a postmortem of where the funds came from and how these were utilized during the year. The fund flow statement attempts to explain the change in financial position from one balance sheet to the subsequent balance sheet in terms of change in the working capital position of the firm.

Working capital comprises current assets and current liabilities. Maintaining optimal level of working capital is crux of problem. Working capital requirement is determined by current assets and current liabilities. Working capital means the excess of current assets over current liabilities. This statement is prepared with the help of current assets and current liabilities derived from the two balance sheets. Working capital is also depending on nature of business. The some other factors are (i) Factor Influencing level of cash (ii) Factor Influencing level of receivable requirement (ii) Factor Influencing level of inventory requirement.

Fund flow is used to refer to changes in or movement of current assets and current liabilities. This movement is of vital importance in understanding and managing the operations of a business. Funds Flow Statement consists three terms Funds, Flow and Statement. Funds Flow Statement is prepared to workout the sources from where the additional funds have been received during the year and for what purposes these funds have been applied.

The term ‘Fund’ has been assigned different meanings by different people. In narrow sense ‘Funds’ means cash and Bank balance. To many people funds is nothing but having the net effect of various business events on the basis of cash. This explains the trend towards the preparation and presentation of "Cash Flow Statement" in published report of accounts.

But in wider sense, the term ‘Fund’ means excess of current assets over current liabilities. Where current assets include cash in hand, cash at bank, bills receivable, sundry debtors, stock, marketable securities and prepaid expenses etc. The current liabilities include sundry creditors, bills payable, outstanding expenses, short-term loans and bank overdraft etc.

8.11 KEYWORDS

Fund: Fund means working capital

Flow: Flow means changes occurred in between two different time periods

Statement of changes in working capital: Enlisting the changes taken place in between the Current assets and current liabilities of two different time horizons

Current assets: Assets which are in the form of cash, equivalent to cash or easily convertible into cash.

Current liabilities: Short term financial resources of the firm

Non-current assets: Long term assets

Non current liabilities: Long term financial resources

Increase in working capital: Increase in Net working capital i.e. Excess of current assets over the current liabilities- Applications side of the fund flow

Decrease in working capital: Decrease in Net working capital i.e. Excess of current liabilities over the current assets - Resources side of the fund flow

Fund from operations: Income generated from only operations

Fund lost in operations: Loss incurred in the operations

8.12 TERMINAL QUESTIONS

1. Define working capital and its need.
2. What do you understand by Fund Flow Statement?
3. Explain Schedule of Changes in working capital with format.

4. Differentiate between fund flow and cash flow statement.

5. What do you mean by Fund from operating activities?

6. From the following data you are required to prepare a fund flow statement:

Liabilities	31st March 2014	31st March 2015	Assets	31st March 2014	31st March 2015
Share capital	24,000	36,000	Land and building	16,620	33,960
Security premium	2,400	3,600	Machinery	10,680	15,390
General reserve	1,800	2,700	Furniture	720	450
P/L a/c	5,850	6,240	Stock	6,630	7,800
Debentures	-	7,800	Debtors	10,950	11,730
Provision for tax	2,940	3,270	Cash at bank	1,440	1,200
Creditors	10,050	10,920			
	47,040	70,530		47,040	70,530

Additional Information

(a) Depreciation written off on machinery Rs. 3840 and on furniture Rs. 120 during the year.

8.13 SUGGESTED READINGS

- Advanced Accounting, C. M. Juneja, Kalyani publisher, Ludhiyana.
- Financial Analysis, Jagdish Prakash, Prayag Pustak Bhawan, Allahabad
- Analysis of Financial Statement, H.K.Singh &Meera singh, Prayag Pustak Bhawan, Allahabad
- Advanced Accountancy Vol.1, S.N. Maheshwari & S.K. Maheshwari
- Advanced Accountancy Principles Of Accounting by S.P Jain & K.L. Narang

MBA-1.3

Accounting For Management

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3

Cost Analysis

UNIT-9

UNDERSTANDING AND CLASSIFYING COSTS

UNIT-10

ABSORPTION AND MARGINAL COSTING

UNIT-11

COST VOLUME PROFIT ANALYSIS

UNIT-12

VARIANCE ANALYSIS

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TESLA-016

UNIT-9 UNDERSTANDING AND CLASSIFYING COSTS

Structure

9.1 INTRODUCTION

Modern business needs relevant and timely information about business activities to plan accurately for the future, to control business operations and to make a proper appraisal of the performances of persons working in an organization. The achievement of these goals requires details about the costs incurred and benefits (revenues) obtained which are provided by what is known as **"Cost Accounting."**

9.2 OBJECTIVES

After studying this unit, you shall be able to understand:

- Concept of Cost accounting
- Classification of Costs
- Cost Sheet

9.3 MEANING AND DEFINITION OF COST ACCOUNTING

Cost Accounting refers to the process of determining and accumulating the cost of some particular product or activity. It covers classification, analysis and interpretation of costs. Thus, it is a specialized branch of general accounting and the information supplied by cost accounting acts as a tool of management for making optimum use of scarce resources and ultimately adds to the profitability of business.

Definition-

According to I.C.M.A London, "Cost Accounting is the technique and process of ascertainment of cost".

"Cost Accounting is the provision of such analysis and classification of expenditure as will enable the total cost of any particular unit of production to be ascertainment with reasonable degree of accuracy and at the same time to disclose exactly how such cost is constituted".- **Walter W.Bigg.**

9.4 CHARACTERISTICS OF COST ACCOUNTING

The features or characteristics of cost accounting are as under-

1) **It is science and art both:** Cost accounting is considered as a science because it has its own rules and are based on principles that are followed on continuous basis and in a proper manner. It is said to be art because the principles and techniques are applied in solving business problems through cost data.

2) **It is a specialized branch of accounting:** Cost Accounting is a special branch which covers collection, classification, recording, apportionment, determination and control of cost. It has its own concept and convention and is based on double entry system.

3) **Determination of various components of cost:** Elements of total cost elements include material, labour and expenses. Also, total cost and per unit cost are determined by the process of collection, classification, analysis and interpretation.

4) **Application of statistical data:** It involves the application of statistical data, control methods and technique and determine the profitability. These statistical data are useful in preparation of cost sheet, cost statement, cost accounts and also for comparing costs.

5) **Recognized as a profession:** Cost accounting is regarded as a profession. The Institute of Cost and Works Accountants of India provide professional guidance to cost accountants and frame the rules for their professional working and approach.

6) **Helpful to management:** This system provides various information related to cost which are very helpful in taking managerial decisions. Also, it provides guidance and measures for control at various levels of management.

9.5 OBJECTIVES AND FUNCTIONS OF COST ACCOUNTING

1) **Ascertainment of cost and profit:** This is the primary function of cost accounting. Under this cost and profit of each unit of production, process, job etc is ascertained. Besides determining the total cost of production it also ascertains cost at various stages of production.

2) **Control of cost and cost reduction:** Cost accounting aims at improving profitability by controlling and reducing costs. For this purpose, various specialized techniques like standard costing, budgetary control, inventory control, value analysis etc are used. Because of growing competition in the business world, the objective of cost control and cost reduction is becoming very important in the present scenario.

3) **Determination of selling price:** Cost accounting provides cost information on the basis of which selling prices of products or services may be fixed. It provides information to decide the extent to which the prices can be lowered to meet the tough competition and also to face the situation of recession or depression.

4) **Guide to business policy and decision making:** This is the most important function of cost accounting as it assist management in formulating various business policies which in turn helps in proper decision making. For example cost volume profit analysis, break-even point of sales etc. help managers in profit planning. Also cost data provide guidelines for various managerial decisions like the appropriate sales mix, make or buy decisions, purchase of new plant, dumping goods in foreign markets etc.

5) **Compliance to statutory requirements:** Under section 148 companies Act 2013 the Central Government has made it mandatory for certain industries to maintain cost accounts. Thus, compliance to statutory requirements is also a major objective of cost accounting.

9.6 SCOPE OF COST ACCOUNTING

The cost accounting has a very broad scope. These are discussed as under-

1) **Cost Classification:** It includes the classification of costs according to functions, elements, nature, controllability and importance in decision making.

2) **Cost Recording:** After classification, all the transactions of costs are recorded in various ledger accounts.

3) **Cost Determination:** It means calculation of cost of individual products, services, departments or other segments of an enterprise. For this purpose cost sheet or statement of cost or production accounts are prepared.

4) **Cost Allocation:** It means allocating all the items of cost to cost centres or cost units as per pre-determined basis.

5) **Cost Comparison:** It means comparison of current cost with previous cost or cost of similar other enterprises.

6) **Cost Reduction:** It means permanent and genuine reduction in per unit cost of goods produced or services rendered.

7) **Cost Control:** It refers to the controlling of various costs by following the techniques of standard costing, inventory control, budgetary control, quality control etc.

8) **Cost Analysis:** It includes the estimation of relationship between costs and various determinants of cost, i.e. analysis of the total cost structure.

9) **Cost Audit:** It basically means properly examining the appropriateness of the cost accounting system and its effectiveness in implementation by the business concern.

10) **Cost Reporting:** It deals with communicating the relevant cost data used by the management for various decision making on regular basis. Also, such data are made available to the government or some outside agencies/ parties.

9.7 ADVANTAGES AND IMPORTANCE OF COST ACCOUNTING

Business enterprises can derive many advantages from the cost accounting system. Some of them are listed below-

1) The cost accounting system provides data about profitable and unprofitable products and activities. After investigating the causes of low profitability and unprofitability, management can take suitable corrective measures which may lead to higher profit.

2) All items of costs can be analyzed to minimize the losses and wastage emerging from the manufacturing process and reduce the costs associated with different activities.

3) Production/Manufacturing methods may be improved or changed so that costs can be controlled and profit is increased.

4) Cost data can be obtained and compared with standard cost within the firm or industry.

5) Cost accounting helps management in avoiding losses arising due to many factors such as low demand, competitive conditions, change in technology, seasonal demand for the product.

6) Cost accounting also provides cost data and information to determine the price of the product. The cost of the product is the most important determinant of product pricing.

7) Negotiations with government and labour unions can easily be made with the information provided by the cost accounting system.

8) An efficient cost system is bound to lower the cost of production, the benefits of which are passed on to the customers in the form of lower prices of products and services.

9.8 CONCEPTS OF COSTS

Some of the concepts which are used in cost accounting are discussed below-

1) **Cost:** Cost is defined as the amount of expenditure incurred (actual) or attributable (notional) relating to a specific thing or activity. The specific thing or activity may be product, job, service, process or any other activity.

   According to American Accounting Association, "Cost means economic sacrifice, measured in terms of standard monetary unit, incurred or potentially to be incurred, as a consequence of a business decision to achieve a specific objective".

   Thus, Cost is that which is given or is sacrificed to obtain something. Cost is different from value as cost is measured in terms of money whereas value is measured in terms of usefulness or utility of an article. The per unit cost of a product changes with increase or decrease in volume of output as the amount of fixed expenses to be borne by each unit of output increases or decreases with increase or decrease in units of production.

2) **Expenses:** Expenses are defined as expired costs, incurred and totally used up in the generation of revenue. Example of expired costs are costs of goods sold selling and administrative expenses. Expenses need not necessarily have to be paid in cash immediately even a promise to pay could be made for the benefits obtained. Thus, expenses are costs which have been applied against revenue of particular accounting period in accordance with the principle of matching cost to revenue, for the period in which they are incurred. Depreciation of a factory building is a cost, but depreciation of an office building is an expense. Similarly, the cost of unsold inventory which was an asset earlier, now becomes expenses (Cost of goods sold) as it has contributed to the generation of revenue.

3) **Loss:** The term 'Loss' is used to describe mainly two accounting events. In traditional financial accounting, it is used to denote a situation where expenses exceed revenues for an accounting period, that is, the opposite of net income for the accounting period. Secondly, a loss arises due to the cost of an asset being more than the sale proceeds when the asset is sold. This unfavorable event does not arise from a normal business activity but from non-operating transaction or events. That means, if no benefit is received from the cost incurred or it becomes definite that no benefit will accrue, the cost becomes a lost cost i.e., loss.

Thus, loss denotes sacrifice for which there is no corresponding return whereas cost implies sacrifices for the sake of and accompanied by the securing of some other value. Example loss on sale of fixed asset, loss of stock due to fire.

4) **Cost Centre:** According to CIMA, UK, "A cost centre is a location, person, or item of equipment (or group of these) for which costs may be ascertained and used for the purpose of control".

According to Cost Accounting Standard-1, "Any unit of cost accounting selected with a view to accumulate all cost under that unit. The unit may be product, a service, division, department, section, a group of plant and machinery, a group of employees or a combination of several units".

Example- a machine, a delivery vehicle, salesman, foreman, service department, etc. The determination of suitable cost centre is very important for the ascertainment and control of cost. Cost centre can be classified as-

a) **Production and Service cost center:** Product centre refers to a centre where a product passes and reaches to a product department. Here, raw materials are converted into finished goods and both direct and indirect costs are incurred.

Service centre is a department or centre which incurs direct and indirect costs but does not work directly on products. Example- store department, maintenance and repair department etc.

b) **Personal and Impersonal cost centre:** Personal cost centre is one which consists of a person or a group of persons whereas impersonal consists of a location or an item of equipment or group of these. Example- a machine, a department, a plant, etc.

5) **Profit Centre:** A profit centre is that segment of activity of business which is responsible both for revenue and expenses and discloses the profit of a particular segment of activity. Such centres are created to delegate responsibility to individuals and measure their performance.

The Major difference between cost centre and profit centre are-

- Cost centre is one of which the costs are ascertained whereas profit centre is that segment of business which aims at maximizing profits by taking into account both revenue and expenses.
- Cost centre are not autonomous whereas profit centres are autonomous.
- A cost centre does not have target costs but efforts are made to minimise costs, but each profit centre has a profit target and enjoys authority to adopt such policies necessary to achieve it targets.
- There can be number of cost centres in a profit centre but a profit centre may be a subsidiary company within a group or division in a company.

6) **Cost Unit:** According to ICMA, " A cost unit is a unit of quantity of product, service or time (or a combination of these) in relation to which costs may be ascertained or expressed". CAS-1 has stated that, "Cost unit is a form of measurement of volume of production or service. This unit is generally adopted on the basis of convenience and practice in the industry. It can be expressed as cost per thousand bricks, cost per ton, cost per passenger kilometer etc.

7) **Cost Object:** Cost object may be defined as "Anything for which a separate measurement of cost may be desired". Thus, Cost object is any particular thing, whose cost is to be known. It can be a product, service, activity, department, process etc.

Check your Progress A

Q.1. State three objectives of Cost accounting?

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Q.2. Differentiate between cost centre and Profit centre?

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Q.3. What is a Cost Unit?

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9.9 CLASSIFICATION OF COSTS

Cost classification is the process of grouping costs according to their common characteristics, attributes or relations. It is a systematic placement of similar items together according to their nature i.e. material, labour and expenses. Then the costs are sub-classified according to cost elements, areas of responsibility, functional lines etc.

9.9.1 BASIS OF CLASSIFICATION

The different ways of classification of costs are discussed as below-

1) **By Nature of Expenses/ Elements:** According to this, all costs are divided into three categories viz, material, labour and expenses. Further material can be divided into raw material, spare parts, packing material, consumable stores etc.

2) **By Behaviour:** Based on behavior, costs are classified as fixed, variable and semi-variable costs.

   (**a**) **Fixed Cost:-** According to CAS-1" Fixed cost is the cost which does not vary with the change in the volume of activity in the short run". It means that total fixed cost does not vary but fixed cost per unit varies with the change in output. If production decreases, fixed cost per unit increases and vice-versa. Fixed cost is also known as 'Period Cost'. Example depreciation, salaries, rent etc.

   (**b**) **Variable Cost:-** According to CAS-1, " Variable cost is the cost of elements which tends to directly vary with the volume of activity". It means that variable costs changes proportionately with the change in volume of production but per unit variable cost remains the same. If production increases, total variable cost also increases and vice-versa. Variable cost is also known as 'Product Cost'. Example- fuel, power, direct labour, etc.

   (c) **Semi-fixed or Semi-variable costs:-** According to CAS-1," Semi-variable costs contain both fixed and variable elements. They are partly affected by fluctuations in the level of activity". It means that this cost varies but not in direct proportion to the increase-decrease in production/ output. It can never be zero even if production is nil. Example- Maintenance and repairs, Supervision, Telephone expenses, etc.

3) **By Relation to Cost Centre:** Based on cost centre, total cost is divided into direct and indirect costs.

   (a) **Direct Cost:-** It is the cost which is incurred and can be easily identified with a particular cost centre or cost unit. Example- material used, labour used in manufacturing any product are direct costs. Sum of direct costs is known as Prime cost.

(b) Indirect Cost:- Indirect cost cannot be traced directly with the final product. They are incurred for the benefit of the number of cost centres or cost unit. Example- rent of building, insurance, depreciation on machine, etc.

4) By Controllability: According to this costs are classified into two categories Controllable costs and uncontrollable costs.

(a) Controllable Costs:- These are the costs that are at least partly under the control of management. All the controllable costs incurred in a particular cost centre is mostly influenced by the action of the manager responsible for the centre. All direct costs are mostly controllable by the departmental heads.

(**b) Uncontrollable Costs:-** In simple words, these are the costs that are not within the control of management. However, there may be an item of cost which is controllable from long-term point of view and uncontrollable from short-term point of view. Example, rent of building, salaries are uncontrollable.

5) By Function or Activities: According to this basis, costs are divided into four parts, namely production cost, administration costs, selling and distribution cost and research and development cost.

(a) Manufacturing or Production Cost:- According to CAS-1, "Production cost is the cost of all items involved in the production of a product or service. It includes all direct and all indirect costs related to the production". Example- depreciation of plant and machinery, security expenses of factory etc.

(b) Administration Cost:- According to CAS-1, "Administration costs are expenses incurred for general management of an organization. These are in the nature of indirect costs and are also termed as administrative overhead". Example- legal expenses, office expenses, bank charges, audit fees, etc.

(c) Selling and Distribution Cost:- According to CAS-1, " Selling costs are indirect costs related to selling of products or services and include all indirect costs in sales management for the organization".

It includes all the costs related to sales & also sales promotion activities. Example- market research cost, sales promotion cost, salaries of sales employees etc.

According to CAS-1, "Distribution costs are the costs incurred in handling a product from the time it is completed in the works until it reaches the ultimate consumer." Example- shipping charges, warehouse expenses, cost of freight etc.

(d) **Research & Development Cost:-** Research cost is the cost which includes the cost of development of new product & manufacturing process, solving technical problem arising in manufacture & application of products etc, finding more innovative uses for the products.

Whereas, development cost includes the cost incurred for the implementation of research findings.

6) **By Time Period:** As per the time period, costs are classified into 4 categories viz, Historical cost, standard cost, estimated cost & pre-determined cost.

(a) **Historical Cost:-** The costs which are ascertained after being incurred are called historical costs. These are the actual costs of producing goods or services or acquisition of assets. These costs are based on recorded facts & can be verified easily as they are supported by the evidence of their occurrence.

(b) **Standard Cost:-** According to ICMA, "It is a predetermined cost which is calculated from management's standards of efficient operation & the relevant necessary expenditure. It may be used as a basis for price fixing & for controlling costs through variance analysis."

(c) **Estimated Cost:-** This cost has no connection with actual. It is just prepared in advance before performing any business operation. Although, it is considered less accurate than estimated cost.

7) **By Importance in Decision making & Control:** Effective decision making & control is the most important objective of management. Under this basis, costs are classified as below:

(a) **Opportunity Cost:-** As per CAS-1, "Opportunity cost is the value of alternatives foregone by adopting a particular strategy or employing resource in specific manner." Simply, we can say that it is the benefit, in measurable terms, which has been given up due to not using the facility in the manner originally planned. Example- a Company has deposited Rs. 2 lakhs in bank at 10% p.a. interest. But now it proposes to invest the same amount in debentures where yield is 12% p.a. So, if the company decides to invest in debentures, it will have to give up Rs. 20,000 p.a. bank interest & this is the opportunity cost.

(b) **Marginal Cost:-** As per CAS-1, "Marginal cost is the aggregate of variable costs i.e. prime cost plus variable overhead. Marginal cost per unit is the change in the amount at any given volume of output by which the aggregate cost changes if the volume of output is increased or decreased by one unit."

Thus, Marginal cost is also known as variable cost as it excludes fixed cost.

(c) **Replacement cost:-** It is the cost of replacing an asset or material at current market prices. Example- if asset 'X' was originally purchased at Rs. 10,000 and now it is to be replaced by purchased from the market at Rs. 12,000 the replacement cost is Rs. 12,000.

(d) **Sunk Cost:-** A sunk cost is irrelevant costs which has already been incurred in the past and cannot be altered by decisions made in the future. Thus, the expenditure which have taken place and are irrecoverable in situation, are treated as sunk cost. Example- if decision has to be made for replacing the existing machinery, the book value of machinery less salvage value (if any) will be the sunk cost and thus irrelevant cost for taking decision of replacing the existing machinery.

(e) **Differential or Incremental Cost:-** According to CAS-1, "Differential cost is the change in cost due to change in activity from one level to another. It means that differential cost is the increase or decrease in total cost that results from an alternative course of action. Example- Technique used in export pricing, new product and pricing of goods that are to be promoted in new markets etc.

(f) **Imputed/ Notional Cost:-** According to CAS-1, " Imputed costs are hypothetical or notional costs, not involving cash outlay, computed only for the purpose of decision making". Thus, these costs do not involve any cash outlay but are required to make costs comparable and effective decision making. Example- interest on capital for which no interest has been paid but then also when profitability of alterative investment projects are valued, it is important to consider the imputed interest on capital, before selecting the best proposal.

(g) **Relevant Cost:-** Relevant costs are costs for a specific purpose or situation. In the context of decision making only, the relevant costs are taken into consideration. Example- present depreciated cost of machine is relevant in case of decision of its sale but, if decision of its replacement is made then it is quite irrelevant.

(h) **Avoidable and unavoidable costs:-** Avoidable costs are those which can be eliminated if a particular product or department with which they are directly related, is discontinued. Example- salary of an employee of a particular department can be eliminated if the department is discontinued.

Unavoidable cost is the cost which cannot be eliminated with the discontinuation of a product or department. Example- salary of factory manager or factory rent cannot be eliminated even if product is eliminated.

(i) **Explicit and Implicit costs:-** Explicit costs refer to the cost involving immediate payment of cash to outsiders. Thus they can be easily measured and are also known as 'out of pocket costs'. Example- salaries, wages, etc. Implicit costs do not involve immediate payment of cash and are also known as economic costs. Example- depreciation.

9.9.2 CLASSIFICATION ON THE BASIS OF NATURE OF PRODUCTION PROCESS

Following costs are included under this category-

1) **Process Cost:-** When a particular good goes through a sequence of continuous process to become a final product, the cost incurred during that particular period is known as process cost. Per unit process cost is the result of total process cost divided by the number of units produced in the process during the period.

2) **Joint Cost:-** Joint Cost is the cost of two or more closely and jointly related commodities, services and operations. Under this products of greater importance are known as 'Joint Products' and products of minor importance are known as 'by- products'. Example- in a petroleum refinery industry, petrol, diesel oil, kerosene is produced jointly in refinery process.

3) **Operating Cost:-** Operating Cost is basically the cost of services provided. It is the cost incurred in conducting a business activity rather than manufacturing any product. Example- the cost of providing transportation services through bus, car, etc, hotel industry.

4) **Batch Cost:-** It is the aggregate cost related to a cost unit that consists of a group of similar articles which maintain their identity throughout one or more stages of production.

5) **Contract Cost:-** A contract is an agreement between the contractee and the contractor with some terms and condition. So the contract cost is the cost incurred in contracts. It is generally implied to major long term contracts rather than short term job costs.

Check your Progress B

Q.1. What is Semi-variable Cost?

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Q.2. Give examples of Direct and Indirect Cost?

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Q.3. What do you understand by Sunk Cost?

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Q.4. Differentiate between explicit and implicit Costs?

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9.10 ELEMENTS OF COST

A cost comprises of 3 elements, viz, Material, Labour and Expenses. Let's discuss these elements in detail as under-

I) Material Cost: As per CAS-1, "Material cost is the cost of material of any nature used for the purpose of production of a product or a service". This cost includes cost of procurement, taxes and duties, freight outward, insurance etc, directly attributable to the acquisition.

Material cost is of two types namely- Direct Materials Cost and Indirect Material Cost.

i) Direct Material Cost:- As per CAS-1, " Direct material cost is the cost of material which can be directly allocated to a cost centre or a cost object in economically feasible way." Thus, simply direct materials are those materials which can be identified in the product and can be easily measured and directly charged to the product. It means that these materials directly enter the production and form a part of the finished products. They are specifically purchased for a specific job, process or order. Example- steel used in machine, cotton used in textile mill, clay used in bricks, leather in shoes etc.

ii) Indirect Material Cost:- As per CAS-1, "Indirect material cost is the cost of material which cannot be directly allocable to a particular cost centre or cost object." Thus, simply indirect materials cannot be easily identified with individual cost units. These costs do not form major part of the product but which help in the production process. Example- office stationery, lubricating oil, small tools, nuts and bolts etc.

II) Labour Cost: As per CAS-1, " Labour cost means the payment made to the employees, permanent or temporary for their services". This cost include salaries and wages paid to employees, salaries further include all fringe benefits like gratuity, overtime, bonus, provident fund contribution etc.

Labour cost is of two types- Direct labour cost and Indirect labour cost.

i) Direct Labour cost:- According to CAS-1, " The cost of wages of those workers who are readily identified or linked with a cost centre or cost object". In simple words, it is that labour which can be easily identified or attributed wholly to a particular job, product or process to convert raw materials into finished goods. Wages paid to such labour are known as direct wages. Example- wages paid to machine operator, carpenter, tailor, weaver etc.

ii) Indirect Labour Cost:- According to CAS-1, "The wages of the employees which are not directly allocable to a particular cost centre." In other words, indirect labour is not directly engaged in the production operations but only to assist or help in carrying out production operation. The labour cost of these persons cannot be directly identified with a job, process or production order and so it cannot be charged directly to that job, process or operation. Example- watchmen salary, workman's compensation, remuneration of repair and maintenance services, storekeeper's salary etc.

III) Expenses Cost: All costs other than material and labour is the third element of cost known as 'expense'. As per ICMA," It is the cost of services provided to an undertaking and the notional cost of the use of owned assests".

Expense are of two types viz, Direct Expenses and Indirect Expenses.

i) Direct Expenses:- As per CAS-1, " Direct expenses are the expenses other than direct material or direct labour which can be identified or linked with the cost centre or cost object."

In other words, direct expenses are those expenses which are directly identified with a particular job, process or operation. They are not connected with some other jobs or process and are also known as 'Chargeable Expenses'. Example- cost of patents and royalties, experimental costs, fees paid to surveyors, architects etc. appointed specially for a particular work etc.

ii) Indirect Expenses:- As per CAS-1," Indirect expenses are the expenses other than of the nature of material or labour and cannot be directly allocated to a particular cost centre". In simple words, indirect expenses cannot be directly identified with a particular job, process or work order but are common to jobs or process. These expenses include factory expenses, office and administration expenses and selling and distribution expenses.

9.11 OVERHEADS

As per CAS-1," Overheads comprise of indirect materials, indirect employee costs and indirect expenses which are not directly identifiable or allocable to a cost object in an economically feasible way."

Thus, overheads cannot be easily charged directly to specific cost centre or cost unit and is the aggregate of-

- Indirect Material
- Indirect Labour
- Indirect Expenses
  Prime cost is the aggregate of Direct Material, Direct Labour and Direct Expenses.

Classification of Overheads

Overheads are divided into three parts:

1) **Factory Overheads:-** These are the overheads which are incurred in the factory and are concerned with the production function. It includes indirect materials, indirect wages and indirect expenses in producing goods and services related to factory only. These overheads are also known as production overhead, works overhead, factory on cost or works on cost. Example salaries of foremen, rent of factory, factory lighting, power etc.

2) **Office and Administration Overhead:-** These are the indirect expenditure incurred in general administrative function i.e. in formulating policies, planning and controlling, directing and motivating the personnel for an objective. These overheads have no direct connection with production or sales activities and also include indirect material, indirect labour and indirect expenses. Example office stationery, legal expenses, depreciation of office building, office salaries etc.

3) **Selling and Distribution Overheads:-** Selling overhead is the cost incurred in promoting sales and retaining customers of products or services. It is the cost which seeks to create and stimulate demand and securing the orders. Example advertisement, salaries of salesmen, samples and free gifts etc.

   Distribution overhead is the cost of all expenditures incurred from the time the product is completed until it reaches its destination. Example packing and transport expenses, shipping charges, warehouse rent, cost of insurance, freight duty etc.

Components of Total Cost-

Elements of cost may be grouped as follows-

a) **Prime Cost**= Direct material + Direct Labour + Direct Expenses.

b) **Works Cost**= Prime Cost + Factory overhead.

c) **Cost of Production**= Works Cost + Administration Overhead.

d) **Total Cost**= Cost of Production + Selling and distribution overhead.

The total cost together with profit/loss is the 'Selling Price'.

9.12 COST SHEET

Meaning-

A cost sheet is a statement of cost which is prepared to present the detailed costs during the period and to ascertain the cost of products. It is the analytical way of presenting the cost at different levels of production. Under this total cost, per unit cost and the cost incurred from manufacturing a product to the stage of making it saleable are shown.

Definition-

"Cost Sheet is a document which provides for the assembly of the detailed cost of a cost centre or cost unit".- **ICMA, London.**

"Cost Sheets are prepared for the use of management and consequently they must include all the essential details which may assist the manager in judging the efficiency of production". **- Wheldon.**

9.12.1 CHARACTERISTICS AND OBJECTS OF COST SHEET

Following are its main features and objects-

1) The cost sheet is a periodic document which may be prepared weekly, fortnightly, monthly or quarterly.

2) The cost sheets are prepared under unit costing method of costing because its main object is to determine per unit cost.

3) The basic objective of preparing a cost sheet is to ascertain the total cost and the burden of each individual cost on the cost per unit of production for the period.

9.12.2 ADVANTAGES OF COST SHEET

A cost sheet is advantageous in the following ways-

1) **Comparative study of cost:** Where different factories producing similar products are run by the same management at different places, a comparative study of the costs of the different factories is possible through the cost sheets prepared by them.

2) **Determination of selling price:** Cost sheet helps in fixing the selling price of the product.

3) **Control of expenses:** Cost sheet helps the management to compare the costs of any two periods and ascertain the inefficiencies and control the expenses.

4) **Benefits to common man:** It helps in cost- control, cost-reduction and better management, the benefit of which goes to the common people as they can get good products at reasonable price.

Proforma Of Cost Sheet

Cost Sheet for the Period.........

No. of units produced=.........

Particulars	**Total Cost**	**Cost per unit**
Direct Material	***	***
Direct Labour	***	***
Direct Expenses	***	***
Prime Cost	*******	*******
Works overheads	**	**
Works Cost	*******	*******
Office and Administration overhead	**	**
Cost of Production	*******	*******
Selling and Distribution Overheads	**	**
Total Cost/ Cost of Sales	***	***
Profit/ Loss	**	**
Sales	***	***

Numerical-

Prepare a cost sheet from the following data for the month of Jan, 2015 of ABC Ltd., whose output was 5000 units.

Particular	**Amount (Rs.)**	**Particular**	**Amount (Rs.)**
Direct Material	12,000	Non-productive wage	10,000
Direct Labour	18,000	Advertisement	11,000
Factory Rent	3,000	Sales Commission	5,000
Office Rent	6,000	Office Salaries	15,000
Showroom Rent	5,500	Delivery Van Expenses	6,500
Power	1,500	Depreciation on Office Equipment	4,500
Light	2,000	Gas and Water	2,500
Direct factory expenses	4,000	Loose Tools	800
Sales for the period amounted Rs. 2,00,000.			

Solution-

Cost Sheet		
(For the month of Jan, 2015) **Output: 5000 Units**		
Particular	**Cost (□)**	**Total Cost (□)**
Direct Material Direct Labour Direct factory expense	12,000 18,000 4,000	
(A) Prime Cost		**34,000**
Factory Overheads:- Factory Rent Power Loose Tools Gas and Water Non-Productive wage	 3,000 1,500 800 2,500 10,000	 **17,800**
(B) Factory Cost		**51,800**
Office Overheads:- Office Rent Light Office Salaries Depreciation on Office Equipment	 6,000 2,000 15,000 4,000	 **27,000**

(C) Cost of Production		**78,800**
Selling and Distribution Overheads:- Showroom Rent Advertisement Sales Commission Delivery Van Expenses	 5,500 11,000 5,000 6,500	 **28,000**
(A+B+C)= Cost of Sales **Profit**		**1,06,800** **93,200**
Sales		**2,00,000**

9.13 SUMMARY

The process of ascertaining cost in known as cost accounting, It is a specialized branch of accounting which aims at control of cost and cost reduction. It acts as a guide to business policy and decision making which also helps in determination of selling prices of products or services. Cost accounting has a very broad scope which includes Cost Classification, Cost recording, Cost reduction, Cost control, Cost analysis, Cost audit and Cost reporting.

Cost is defined as the amount of expenditure incurred to obtain a specific thing or conducting an activity. Thus, Cost centre is a location, person or item of equipment for which costs may be ascertained and used for the purpose of control.

Costs can be classified on various basis. According to elements, all Costs are divided into three categories, viz. material, labour and expense. On the basis of behaviour it can be classified as fixed, variable and semi-variable Costs. Expenses directly identifiable or linked with a particular cost centre is known as direct expenses and indirect expenses are those expenses which cannot be directly identified with a particular job, process or work order, Indirect materials, indirect employee costs and indirect expenses constitute overheads.

Costs Sheet is a statement of cost which is prepared to present the assembly of the detailed Cost of a Cost centre or Cost Unit.

9.14 KEY WORDS / GLOSSARY

Cost-	Amount of expenditure incurred or attributable relating to a specific thing or activity.
Expenses-	Expired Costs incurred and totally used up in the generation of revenue.
Cost Centre-	A location, person of item of equipment for which Costs may be ascertained.
Profit Centre-	A segment of activity of business which is responsible both for revenue and expenses and discloses profit of a particular segment of activity.
Fixed Cost-	Cost which does not vary with the change in the volume of activity in the short run.

Variable Cost-	Cost which tends to directly vary with the volume of activity.
Opportunity Cost-	Value which alternatives foregone by adopting a particular strategy.
Overheads-	Aggregate of indirect material, indirect labour and indirect expenses.
Prime Cost-	Aggregate of direct material, direct labour and direct expenses.

9.15 Answers to check your progress:

'A'	
1.	1) Ascertainment of cost and profit: 2) Control of cost and cost reduction: 3) Determination of selling price:.
2.	The Major difference between cost centre and profit centre are- Cost centre is one of which the costs are ascertained whereas profit centre is that segment of business which aims at maximizing profits by taking into account both revenue and expenses. Cost centre are not autonomous whereas profit centres are autonomous. A cost centre does not have target costs but efforts are made to minimise costs, but each profit centre has a profit target and enjoys authority to adopt such policies necessary to achieve it targets. There can be number of cost centres in a profit centre but a profit centre may be a subsidiary company within a group or division in a company.
3.	**Cost Unit:** According to ICMA, " A cost unit is a unit of quantity of product, service or time (or a combination of these) in relation to which costs may be ascertained or expressed". CAS-1 has stated that, "Cost unit is a form of measurement of volume of production or service. This unit is generally adopted on the basis of convenience and practice in the industry. It can be expressed as cost per thousand bricks, cost per ton, cost per passenger kilometer etc.
'B'	
1.	**Semi-fixed or Semi-variable costs:-** According to CAS-1," Semi-variable costs contain both fixed and variable elements. They are partly affected by fluctuations in the level of activity". It means that this cost varies but not in direct proportion to the increase-decrease in production/ output. It can never be zero even if production is nil. Example- Maintenance and repairs,

	Supervision, Telephone expenses, etc.
2.	**Direct Cost:-** It is the cost which is incurred and can be easily identified with a particular cost centre or cost unit. Example- material used, labour used in manufacturing any product are direct costs. Sum of direct costs is known as Prime cost. **Indirect Cost:-** Indirect cost cannot be traced directly with the final product. They are incurred for the benefit of the number of cost centres or cost unit. Example- rent of building, insurance, depreciation on machine, etc.
3.	**Sunk Cost:-** A sunk cost is irrelevant costs which has already been incurred in the past and cannot be altered by decisions made in the future. Thus, the expenditure which have taken place and are irrecoverable in situation, are treated as sunk cost. Example- if decision has to be made for replacing the existing machinery, the book value of machinery less salvage value (if any) will be the sunk cost and thus irrelevant cost for taking decision of replacing the existing machinery.
4.	**Explicit and Implicit costs:-** Explicit costs refer to the cost involving immediate payment of cash to outsiders. Thus they can be easily measured and are also known as 'out of pocket costs'. Example- salaries, wages, etc. Implicit costs do not involve immediate payment of cash and are also known as economic costs. Example- depreciation.

9.16 TERMINAL QUESTIONS

Ques.1. What is Cost Accounting? Explain its objectives and advantages.

Ques.2. Define in brief-

1. Profit Centre
2. Expenses
3. Cost Unit

Ques.3. What do you mean by Overheads? Give the classification of overheads.

Ques.4. What do you understand by the term 'Cost'? Explain in short the

different elements of Cost.

Ques.5. Below is the enumerated expenditure of XYZ Ltd. Company

	Rs
Raw materials	28,000
Fuel	6,900
Electric power	1,340
Process and general wages	63,000

Repairs	2,400
Haulage	1,060
Light and Water	400
Rent	2,000
Rates and Insurance	300
Office Salaries and General Expenses	7,000
Administration (Office)	5,000
Depreciation on Machinery	2,500
Total	1,20,400

Tons manufactured 17,200.

Prepare a Cost Sheet showing the cost per each item of expenses and the cost per ton for the period.

9.17 SUGGESTED READINGS

Arora, M.N. :	Cost and Management Accounting, Himalaya Publishing House, Mumbai, 2008.
Maheshwari, S.N. :	Financial and Management Accounting, Sultan Chand & Sons, New Delhi, 2004.
Gupta, Shashi K, Sharma, R.K. :	Management Accounting, Kalyani Publishers, New Delhi, 2008.
Lal, Jawahar :	Advanced Management Accounting, S.Chand & Co.Pvt. Ltd., New Delhi, 2013.

UNIT–10 ABSORPTION AND MARGINAL COSTING

Structure

10.1 INTRODUCTION

Every stakeholder of a business is interested in knowing the amount of profit earned by the firm. Profit depends upon cost. Thus, ascertainment of cost is a very important part of financial analysis. There are two significant techniques for the ascertainment of cost and profit, viz. Absorption Costing and Marginal Costing. Although both the techniques are associated with computation of profit but they differ from each other in the manner of ascertaining cost. These techniques are discussed in detail in this unit.

10.2 OBJECTIVES

After studying this unit, you shall be able to understand:

- Concept of absorption costing
- Concept of marginal costing
- Difference between absorption and marginal costing

10.3 ABSORPTION COSTING

Absorption Costing is a conventional technique in which all manufacturing costs, variable and fixed are charged to production cost. It means that total manufacturing costs are 'absorbed' in the cost of goods produced. That is why absorption costing is also known as 'full costing' or 'total costing' technique.

10.3.1 CHARACTERISTICS

Following are the features of the absorption costing:-

1) Both fixed and variable manufacturing costs are charged to cost of production.
2) All the non-manufacturing costs viz, administration selling and distribution costs are considered as period costs. These are directly charged to Profit and loss A/c of the period instead of including in production cost.
3) Inventories are valued at total cost i.e. fixed plus variable cost.
4) Under /over absorbed overhead are adjusted before computing profit for a particular period.'
5) Fixed cost may be charged on actual cost basis or on the basis of a predetermined rate based on normal capacity.

10.3.2 DETERMINATION OF PROFIT UNDER ABSORPTION COSTING

Under absorption costing, Income statement is prepared for the purpose of ascertaining the amount of profit or loss.

Proforma of Income Statement is as under-

Income Statement (Absorption Costing)	
Particulars	**Amount (Rs)**
Sales	****
Production Costs:	
• Direct Material Consumed	****
• Direct Labour Cost	****
• Fixed Manufacturing overhead	****
• Variable Manufacturing overhead	****

TESLA-016

Cost of goods Produced	****
Add: Opening Stock of Finished goods Less: Closing stock of finished goods **Cost of goods Sold**	**** **** ****
Particular	**Amount (Rs)**
Add/Less: Under/Over absorption of fixed manufacturing overhead Add: Selling and distribution costs **** Administration costs **** **Total Cost** **Profit** (Sales- Total Cost)	 **** **** ****

10.3.3 ADVANTAGES OF ABSORPTION COSTING

The advantages of absorption costing are as follows-

1) **Difference between Product and Period cost:** Product costs are the cost necessary for production which are incurred only in the case of production whereas period costs are not necessary for production and are incurred even in the case of no production. Absorption costing differentiates product and period cost, as it tells which costs related with production and which are important with factory only.

2) **Determination of prices on the basis of total cost:** As per this technique all costs, namely fixed and variable related to the production are directly charged to manufacturing units. This is very helpful in determining the price. Also it is much useful where cost plus method is used for price determination.

3) **Charge of fixed factory overheads on stock:** Under this method, the burden of fixed manufacturing overheads are put on that stock which is unsold during current period but is produced to have sales in future.

4) **Calculation of gross and net profit:** Absorption costing helps in calculating gross profit and net profit separately in the income statement.

5) **Conformity with Matching and Accrual Concepts:** It helps in conforming with accrual and matching concept of accounting as fixed manufacturing overheads on that goods is carried over for the next period which is unsold during current period.

6) **Clarification of utilization of production resources:** Under this method, efficient or inefficient utilization of resources is clearly disclosed as under-absorption or over-absorption of factory overheads are clearly indicated in the income statement.

10.3.4 LIMITATIONS OF ABSORPTION COSTING

Absorption costing also has the following limitations-

1) **Difficulties in managerial decisions:** Some of the managerial decisions like, make or buy, optimum product mix, accepting order at a specified price, setting the minimum price during depression etc, cannot be easily taken under absorption costing.

   a. **Difficulties in comparison and control of Cost:** `Absorption costing is based on the level of output because different unit costs are obtained at different levels of output. Mostly, unit cost is decreased when the level of output is increased and vice versa. This makes comparison and control of cost complex.

2) **Difficulty in preparing flexible budget:** Flexible budget is difficult to prepare under absorption costing technique as fixed and variable costs are not distinguished separately.

Numerical-

ABC Ltd., furnishes the following information, Prepare an income statement under absorption costing-

Particular	Amount (Rs)
Direct Material	52,000
Direct Labour	25,000
Fixed Overhead- Factory Administration and selling	20,000 9,500
Variable Overhead- Factory Administration and selling	12,000 4,000
Total Sales	**1,30,000**

Solution-

Income Statement (Absorption Costing)		
(I) Sales		1,30,000
Direct Material		52,000
Direct Labour		25,000
Factory Overhead- Variable	12,000	
Fixed	20,000	32,000
Cost of Production		1,09,000
Administration and selling overhead		
Variable	4000	
Fixed	9500	13,500
(II) Total Cost		1,22,500
Profit (I - II)		**7,500**

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Check your Progress A

Q.1. Differentiate between product Cost and period Cost?

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Q.2. How is inventory valued under absorption costing?

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Q.3. How will you calculate 'Cost of goods produced under absorption costing?

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10.4 MARGINAL COSTING

Marginal costing is a modern technique of cost analysis in which the total cost incurred in the product is classified into fixed and variable components. Fixed expenses remain constant in aggregate amount and do not change with increase or decrease in production up to a certain level of output while the variable expenses increase or decrease in proportion to increase or decrease in output and remain same per unit of output. Thus, Marginal costing excludes fixed cost and help the management in cost control and decision making by taking only variable cost or marginal cost into consideration.

10.4.1 MEANING AND DEFINITION OF MARGINAL COSTING

According to ICMA London, "Marginal cost is the amount at any given volume of output by which aggregate costs are changed if the volume of output is increased or decreased by one unit". It is the cost of producing an additional unit of product. Thus marginal cost is the sum of all variable costs, consisting of all direct costs and the variable overheads. In simple words, we can say that,

Marginal Cost= Prime Cost + All Variable Overheads

Or, = (Direct Material + Direct Labour + Direct Expenses) + Variable Overheads

Or, = (Total Cost) - (Fixed Overhead)

= (Total Cost) - (Fixed works Expenses + Fixed Office Expenses +

Fixed Selling and Distribution Expenses)

Note:- Variable cost per unit remains unchanged irrespective of the level of activity.

Example-

A Company produces 100 units of a product per month. Total fixed cost per month is Rs. 6000 and marginal cost per unit is Rs. 300. Hence, total cost per month will be-

Marginal cost of 100 units	=	30,000
Total fixed cost	=	6000
Total Cost	**=**	**36,000**

Now, if output is increased by one unit, total cost will be changed as follows-

Marginal cost of 101 Units	=	30,300
Total fixed cost	=	6,000
New Total Cost	**=**	**36,300**

Therefore, the additional cost of producing one extra unit is Rs 300, which is termed as marginal cost. If change in production is more than one unit, then per unit average marginal cost can be computed by dividing difference in total cost by difference in total units.

$$\text{i.e. MC (per unit)} = \frac{\text{Difference in total cost}}{\text{Difference in Output}}$$

According to ICMA London, "Marginal costing is the ascertainment of marginal cost and the effect on profit of changes in volume or type of output by differentiating between fixed costs and variable costs". Thus, marginal costing is an accounting technique which ascertains marginal cost and it is not a separate system of costing like operating costing, job costing, contract costing etc. Its basic purpose is to present the cost and profit information in such a manner that it is helpful to management in decision making.

10.4.2 CHARACTERISTICS

The basic characteristics of marginal costing are as follows-

1) **Division of cost into fixed and variable:** Under marginal costing all the elements of costs are segregated into fixed and variable. Even the semi-variable costs are classified into fixed and variable elements. Elements of costs include Production, Administration, Selling and Distribution.

2) **Period cost and product cost:** Fixed costs are considered period costs in marginal costing and are charged to Profit and

Loss A/c for which they are incurred, while variable costs are treated as the cost of product.

3) **Contribution:** Contribution is the excess of sales over variable cost. Thus, the contribution made by each product or department helps in ascertaining the profitability of that product or department under marginal costing approach.

Contribution (C) = Sales - Marginal Cost

Or, C = Fixed Cost + Profit

4) **Determination of Profit:** Under marginal costing, profit is determined firstly by calculating total contribution i.e. the difference between sales and marginal cost and then the fixed costs are deducted, from the contribution to arrive at 'Profit'.

Profit = Contribution - Fixed Cost

5) **Break-even Analysis:** Break-even Analysis also known as cost-volume Profit Analysis is an important part of marginal costing. Break-even point is the situation of no profit and no loss. All the production activities beyond this point results in profit.

6) **Valuation of stock:** In marginal costing, the stock of work in progress and finished goods are valued at marginal costs only.

7) **Cost Recovery:** All the variable costs are charged to production whereas all the fixed costs are recovered from the contribution.

10.4.3 DETERMINATION OF PROFIT UNDER MARGINAL COSTING

For calculating the profit, firstly it is important to understand the 'Contribution', contribution is different from profit in the sense that it first goes to meet fixed expenses and then contributes to profit. It is the basic assumption of marginal costing that excess of sales over variable cost provides margin to recoup fixed costs and to provide for concern's profit.

Contribution (C) = Sales (S) - Variable Cost (VC)

Or, C = Fixed Cost (FC) + Profit (P)

i.e. S - VC = FC + P

So, S = VC + FC + P

VC = S - C

F = C - P

P = C - FC

From, above we can conclude,

Some Points of Contribution Analysis-

a) If C=0, only MC is covered and the loss is equal to FC; as MC= Sales.

b) If C is negative then loss is more than FC, because MC can't be recovered as MC > Sales.

c) If C is positive and more than FC (C > FC) there will be profit, because FC will be fully covered and the balance will be profit.

d) If C is positive and less than FC (C < FC), there will be loss but at any point it will be less than FC, because some portion of FC will be recovered.

e) If C is positive and equal to FC (C = F), there will be neither profit nor loss i.e. Break-even point because contribution will just be sufficient to cover FC leaving no surplus.

Proforma of Income Statement Under Marginal Costing

Particular		**Amount (Rs)**
Sales- Units @.......	(S)	***
Less: Marginal Costs - Units @.......	(VC)	***
Contribution	(C)	***
Less: Fixed Cost	(FC)	***
Profit	(P)	***

Numerical-

Compute the profit under marginal costing using the following information-

Fixed Cost = Rs. 1,00,000, Production = 1,30,000 Units

Variable Cost = Rs 5 per unit, Selling Price = Rs. 10 per unit.

Solution-

Statement of Marginal Cost and Profit

Particular	**Amount (Rs)**
Sales - 1,30,000 units @ Rs. 10 per unit	13,00,000
Less: Variable Cost @ Rs 5 per unit	6,50,000
Contribution (C)	6,50,000
Less: Fixed Cost (FC)	1,00,000
Profit (P)	5,00,000

Check your Progress B

Q.1. Define Marginal Cost.

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Q.2. What is the formula for determining profit under marginal costing?

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10.4.4 ADVANTAGES/ UTILITY OF MARGINAL COSTING

The advantages of Marginal Costing are discussed below:-

1) **Helps in profit planning:** Profit planning may be defined as the planning of future operations to attain a defined profit goal. Under marginal costing, the cost data needed for profit planning and decision making are readily available from the records and statements. It facilitates the analysis of cost-volume profit relationships by separating fixed and variable costs on the income statement. Marginal costing helps management in planning and evaluating the profit resulting from change in volume in the sales-mix, in make or buy situations, in the selection of most profitable products, customers etc.

2) **Taking product pricing decisions:** Marginal costing provides more useful information to management for pricing than absorption costing. Under this management has data to determine when it is advisable to accept orders and when not. In some cases, sales order can be accepted even if it contributes partly to fixed costs. However in the long-run full cost must be taken for product pricing.

3) **Cost control:** Marginal costing helps in preparing reports for all departments or responsibility centres based on standard costs, flexible budget and a division of all costs into their fixed and variable components. This provides an aid to management in controlling costs and insures effective planning.

4) **Simple and easy technique:** This technique is comparatively simple to operate and easy to understand. Because allocation, apportionment and absorption of fixed and variable overhead are done separately.

5) **Proper valuation of closing stock:** Under this technique, closing stock of work in progress and finished goods is valued at marginal cost. This facilitates proper and logical valuation of stock as fixed cost of one period is not carried over to the next period.

6) **No Under and Over absorption of overheads:** In marginal costing, there is no problem of under or over absorption of overheads.

7) **Useful to Standard and Budgetary Costing:** This technique is very helpful in adopting and implementing the system of standard and budgetary costing.

8) **Helpful in Managerial reporting/decisions:** Marginal Costing is a basic tool for making various managerial decision like selecting most profitable product mix, sales mix, decision of expansion or closure of various products or departments, determining optimum price, minimum price, dumping price. It also serves as a basis for managerial reporting.

10.4.5 LIMITATIONS OF MARGINAL COSTING

1) **Ignores time factor:** This technique does not assume time factor thus by ignoring fixed costs, time element is also ignored. For example, if times taken to complete two jobs are different, then the job taking longer time will have higher costs. But as per this technique marginal cost may be the same for both the jobs.

2) **Difficulties in division of cost:** Marginal Costing requires that all cost should be divided into fixed and variable components. It cannot be true under all circumstances. For example factors that might affect this assumption include quantity discounts on materials and labour efficiency variances.

3) **Improper basis of pricing:** Marginal costing technique is not convenient for long-term pricing as it ignores fixed cost while fixed cost is of much importance in long run. In certain circumstances product may be sold at less than total cost, prices in the long run can cover total cost without earning profit.

4) **Unsuitable for all types of concerns:** In capital intensive industries the proportion of fixed costs like maintenance, depreciation, etc is large. Since this technique ignores fixed cost, it is proved less effective in such industries. Similarly, this method is also not suitable where selling price is determined on the basic of cost-plus method.

5) **Problem of valuation of stock:** Stock is valued at marginal cost under this method. But if there is loss by fire, it will not be easy to recover total loss on account of stock destroyed due to valuation at marginal cost only. Also, the balance sheet will not exhibit true and fair position due to under or over valuation of stock.

10.5 DIFFERENCE BETWEEN MARGINAL COSTING AND ABSORPTION COSTING

Marginal Costing and Absorption Costing differ from each other in the following respects-

1) **Period Vs Product Cost:-** Marginal costing and absorption costing differ only in the treatment of fixed overheads in the accounting records and financial statements. In marginal costing 'Product' is important and the expenses of the period which do not have any relationship with the level of output are not taken. Whereas, in absorption costing 'Period' is important and the expenses related to a particular period are included in total cost.

2) **Valuation of Inventory:-** Both the techniques influence inventory values differently. The value of stock under managerial costing is relatively at a lower figure as inventories are determined in terms of only variable costs. While, in absorption costing value of stock is comparatively at a higher figure because it considers fixed overhead also besides the variable production costs.

3) **Difference in Net Income:-** The treatment of fixed overhead brings difference in the net income figures in the two costing techniques. The magnitude of any difference in net income is the function of fixed manufacturing costs per unit and the change in inventory levels.

4) **Classification of Costs:-** In Marginal costing total cost is divided into two parts i.e. fixed cost and variable cost. Whereas in absorption costing, cost is divided into three parts manufacturing, administrative and selling.

5) **Presentation of Costs:-** Under marginal costing, firstly contribution is obtained by deducting marginal cost from sales and then the amount of net profit is calculated by deducting fixed costs from contribution. Whereas, under absorption by deducting cost of sales from the amount of sales and then net profit is determined by deducting administration and selling expenses from gross profit.

6) **Application:-** Marginal costing is helpful for effective planning and control and taking various managerial decisions. Whereas, absorption costing is most suitable for ascertaining long-term cost and long-term pricing policy.

7) **Basis of Managerial Decisions:-** Under marginal costing technique management takes decision on the grounds of contribution and profit volume ratio or break-even analysis. Whereas, under absorption costing managerial decisions are totally based upon profit i.e. excess of sales revenue over total cost.

10.6 SUMMARY

Absorption costing and Marginal costing are two important techniques of ascertaining cost and profit. Absorption costing differentiates between production cost and period cost. Under this technique, both fixed and variable manufacturing costs are charged to cost of production and inventories are valued at total cost i.e. fixed plus variable cost. Expenses related to a particular period are included in total cost.

In Marginal Costing, total cost of a product is classified into fixed and variable components. Marginal cost is the cost of producing an additional unit of product. It includes all variable costs. Variable cost per unit remains unchanged irrespective of all level of activity. Under Marginal costing, profit is computed by deducting fixed cost from contribution. Contribution is the difference between sales and marginal cost. The stock of work in progress and finished goods are valued at marginal costs only. Marginal costing is very helpful in profit planning and cost control but it ignores time factor.

10.7 Keywords:

Product Cost	Cost necessary for which are incurred only in case of production.
Period Cost	Costs related with a particular period and are incurred even in case of no production.
Marginal Cost	Cost of producing an additional unit of product or Sum of all variable costs consisting of all direct costs and variable overheads
Contribution	Excess of sales over variable cost.

10.8 Answers to check your progress:

'A'	
1.	Product costs are the cost necessary for production which are incurred only in the case of production whereas period costs are not necessary for production and are incurred even in the case of no production.
2.	Inventories are valued at total cost, i.e. fixed cost plus variable cost.
3.	Cost of goods produced= Direct material consumed + Direct labour Cost + Fixed manufacturing overhead + Variable manufacturing overhead.
'B'	
1.	Marginal cost is the amount at any given value of output by which aggregate costs are changed if the volume of output is increased or decreased by one unit.
2.	Profit= Contribution - Fixed cost.

10.9 TERMINAL QUESTIONS

Ques. 1. What is Marginal Costing? Explain its features.

Ques. 2. Explain in brief the advantage of Marginal Costing.

Ques. 3. Distinguish between Marginal Costing and Absorption Costing.

Ques. 4. Explain the concept of Absorption Costing.

Ques. 5. Cost data of a manufacturing company XYZ are as follows:

	2013	**2014**
Output (Units)	1,500	1,200
Sales (Units)	1,200	1,500
Fixed Cost (Annual)	Rs.12,000	Rs.12,000
Material (per unit)	Rs. 5	Rs. 5
Wages (per unit)	Rs. 3	Rs. 3
Variable Expenses (per unit)	Rs. 1	Rs. 1
Selling Price (per unit)	Rs. 20	Rs. 20

There was no stock on 1.12013. You are required to work out profit for

2013 and 2014 by the following methods:

a. Absorption Costing.

b. Marginal Costing.

10.10 Suggested Readings:

Arora, M.N. :	Cost and Management Accounting, Himalaya Publishing House, Mumbai, 2008.
Maheshwari, S.N. :	Financial and Management Accounting, Sultan Chand & Sons, New Delhi, 2004.
Gupta, Shashi K, Sharma, R.K. :	Management Accounting, Kalyani Publishers, New Delhi, 2008.
Lal, Jawahar : TESLA-016	Advanced Management Accounting, S.Chand & Co.Pvt. Ltd., New Delhi, 2013.

UNIT-11 COST VOLUME PROFIT ANALYSIS

Structure

11.1 INTRODUCTION

The ultimate goal of all business enterprise is to earn maximum profit. Profits of business firms are the result of many factors such as, selling price, variable costs, total fixed costs, volume of sales, etc. the study of relationship among these three important factors, viz cost, volume and profit is known as 'Cost Volume Profit Analysis.'

Cost-Volume-Profit Analysis is an extension of the principles of marginal costing, in which the total cost of production is classified into two parts i.e. fixed cost and variable cost. CVP analysis helps management in profit planning, as any change in the above factors can affect the profitability of the firm to a large extent.

Example- How many units of product should be sold to earn a profit of Rs. 2,00,000? How the profit will be affected if an additional advertisement expenditure of Rs. 1,00,000 increases sales by 50,000 units? etc.

Thus, CVP analysis helps in finding the solution to these questions.

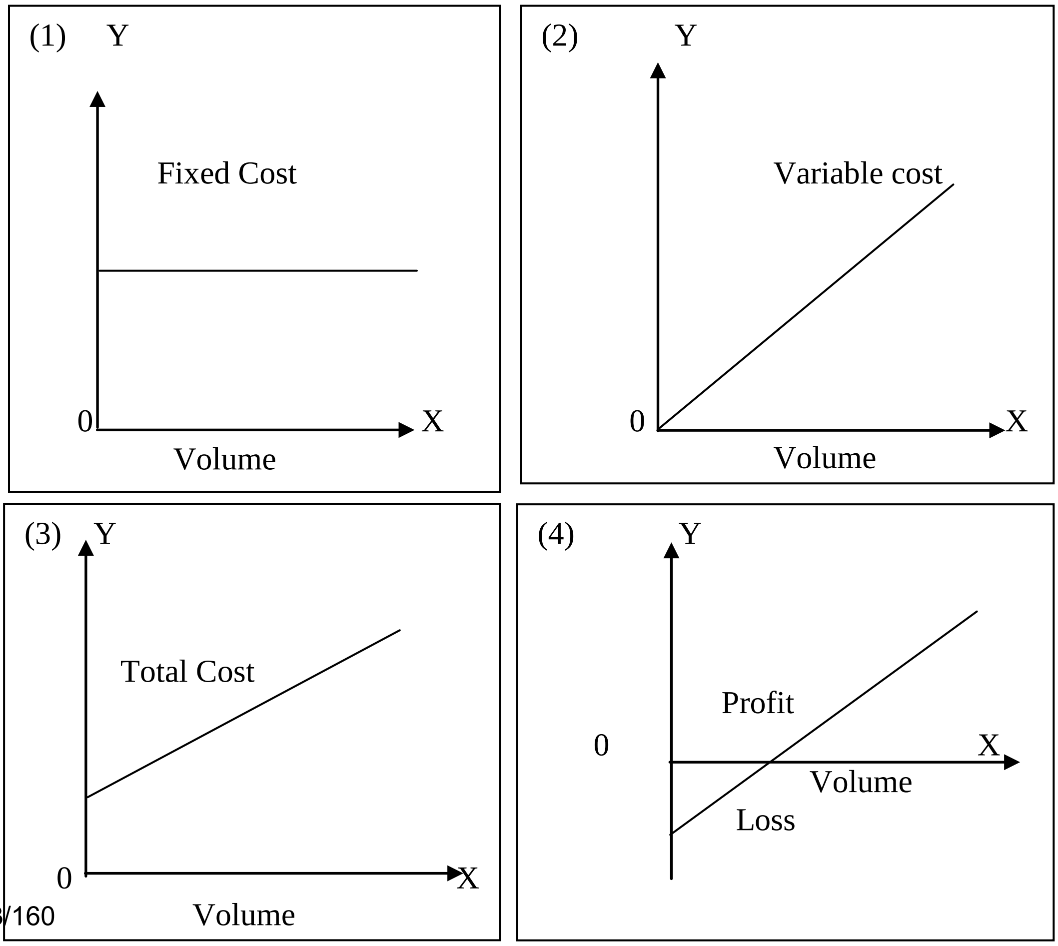
11.2 OBJECTIVES

After studying this unit you shall be able to understand:

- Relationship between Cost, Volume and Profit.
- Applications of BEP
- Computation of Contribution, P/V Ratio, Margin of Safety.

11.3 COST-VOLUME-PROFIT RELATIONSHIP

Following graph clearly depicts the relationship between cost, volume and profit:-



All the above graph are based on the following assumptions-

1) Every cost can be divided into fixed cost and variable cost. Fixed cost remains constant upto a certain level of output, while variable cost changes in proportion to change in output.
2) There is only one product. If there is more than one product, the product mix is assumed to be constant.
3) The selling price of the product remain constant even if volume varies.

In short, it can be summarized as-

- There is negative relationship between cost of production and amount of profit. It means that decrease in cost of production, increases the amount of profit.
- There is negative relationship between volume of production and cost of production. It means that cost per unit may decrease with the increase in volume of production because fixed cost do not increase with the increase in volume of production.
- There is positive relationship between volume of production and amount of profit. It simply means profit increases with increase in production volume.

11.4 CONCEPT OF COST-VOLUME-PROFIT ANALYSIS

According to CIMA, London," Cost-Volume-Profit Analysis is the study of the effects on future profits of changes in fixed cost, variable cost, sales price, quantity and mix."

11.4.1 Importance or Objective of Cost-volume profit Analysis

Cost-Volume-Profit Analysis is the important tool which helps in effective planning and control. It solves various managerial issues.

The main objectives of CVP analysis are-

1) **Determining Break-Even-Point (BEP):** BEP is the point of no profit no loss. Cost-Volume-Profit Analysis helps in finding out this point.
2) **Helpful in fixing price:** The impact of different price structures on costs and profit can be easily studied through Cost-Volume-Profit Analysis. Thus, it helps a lot in fixing an appropriate price.
3) **Profit planning:** Under Cost-Volume-Profit Analysis we can easily determine the profits at various levels of activity. In addition to this, we can also determine the volume of sales or production to earn desired profits.
4) **Allocation of overhead costs:** Cost-Volume-Profit Analysis helps in finding out the amount of overhead costs to be charged to the production at different levels of production.

5) **Preparing flexible budget:** This analysis helps in preparing the flexible budget which shows that what will be the trend of amount of sales and cost of production at various levels of activity.

6) **Analysis of effect of changes in cost:** Increase or decrease in fixed cost variable cost, labour cost, material cost, overheads etc is generally found in business activities. Hence, Cost-Volume-Profit Analysis helps in analyzing the impact of these fluctuations.

7) **Taking decision relating to selection of Alternatives:** A good and effective decision must be taken by the management in respect to various alternative proposals relating to production and sale and Cost-Volume-Profit Analysis serves a great purpose in this regard.

8) **Evaluating performance for control:** This analysis is very helpful in evaluating the overall performance for the purpose of proper control.

11.4.2 LIMITATION OF COST-VOLUME-PROFIT ANALYSIS

The Cost-Volume-Profit technique is much useful to the management in areas of budgeting, cost control and decision making. In spite of Cost-Volume-Profit being a useful technique it suffers from some limitation also.

1) Selling prices may be lower at high volumes because sales discounts can be given in order to sell the large volume of production.

2) It is assumed that variable cost per unit is constant. But it may not be constant. For example with increase in the volume of production, raw material may be purchased in bulk and thus quantity discount may be available on such purchase. In such a case linear relationship will be affected.

3) Fixed cost may not remain constant at high level of production volume. For example depreciation on plant is a fixed cost. But with increase in production the plant may be operated for more hours and deprecation may be provided for extra shift. Thus, this contradicts the assumption that total fixed cost remain constant.

4) In a multi-product situation, different product yield different contribution margins and are produced in different quantities with different costs. As a result neither the revenue curve nor the cost curve is necessarily straight and the break-even point is difficult to find.

Therefore, while preparing or interpreting cost-volume profit analysis all assumptions and limitations should be carefully considered. Also, it is necessary to have up-to-date analysis so that it can act as a useful device in profit forecast, budgeting and managerial decision making.

Now, let's discuss Cost-Volume-Profit Analysis in detail which include the study of Break Even Point, Contribution, Profit-Volume Ratio (PV Ratio), Margin of Safety.

Check your Progress A

Q.1. State the relationship between variable cost and volume of production.

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Q.2. State three objectives of cost volume profit analysis.

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11.5 BREAK EVEN POINT (BEP)

Meaning of BEP:-The break-even point can be defined as the point or sales level at which profits are zero and there is no loss. It means it is a situation of no profit or no loss, i.e. total costs are equal to total sales revenue. Also, we can say that at break-even point profit being zero, contribution (Sales-Variable cost) is equal to the fixed cost. If the actual volume of sales is higher than break-even volume, there will be a profit. Beyond the break-even point, all the marginal contribution represents income.

Definition-" The Break-even Point of a company or a unit of a company is that level of sales income which will equal the sum of its fixed cost and its variable costs."- Keller and Ferrara.

"The Break-even Point is that point of sales volume where total revenues and total expenses are equal, it is also said as the point of zero profit or zero loss."**- Charles T. Horngren.**

11.5.1 ASSUMPTIONS OF BEP

The Break even Analysis is based on the following assumption-

1) All costs can be separated into fixed and variable components.

2) Total fixed cost remains constant.

3) Variable cost per unit remains constant and total variable cost varies in direct proportion to the volume of production.

4) Selling price per unit does not change as volume changes.

5) There will be no change in the general price level.

6) Productivity per worker does not change.

7) Also, it is assumed that during the period, for which break-even analysis is being made, there will be no change in production system, efficiency of machines or technology of production.

8) There is only one product or in the case of multiple products, the sales mix does not change.

11.5.2 APPLICATIONS OF BEP

Break Even Point analysis is a very helpful and significant technique of profit planning and decision making. It is used for selecting the best proposal among the alternative proposals, for testing the profitability of proposed actions and various other decisions. Some important applications of Break Even Point analysis are-

1) Calculation of profit at different levels of sales.
2) Determination of Break-even Point.
3) Make or buy decisions.
4) Determination of sales to earn desired profit.
5) Estimation of margin of safety.
6) Determination of optimum sales-mix.
7) Estimation of effect of changes in fixed and variable cost on Break Even Point and sales.
8) Fixation of new selling price at a particular break-even point.
9) Decision of change of capacity.
10) Calculation of desired sales in order to cover proposed expenses.

11.5.3 CALCULATION OF BREAK-EVEN-POINT

Break Even Point can be computed by two ways-

A) Equation Method:- Under this method, following formula is used,

Sales= Variable Expenses + Fixed Expenses + Profit

Here, values of sales, variable and fixed expenses can be substituted to find the break-even level. This method is not much popular.

B) Contribution Method:- This method is very important and useful method for calculating Break Even Point. Its two basic tools are ‘Contribution’ and ‘Profit Volume Ratio’. These are discussed in detail as follows-

11.5.4 CONTRIBUTION

Contribution is the difference between sales and the variable cost. It means that it is the excess of sales over the variable cost which is available to cover the fixed cost and then to earn profit. If the amount of contribution is less than fixed cost, it will be a situation of loss to the firm and if it is equal to fixed cost, it will be a situation of no profit and no loss i.e. Break Even Point. Contribution is also known as 'Gross Margin and Contribution Margin'.

Computation of Contribution-

1) Contribution= Sales – Variable Costs.

2) Contribution= Fixed Cost + Profit (- Loss)

3) Contribution= Sales * P/V Ratio.

4) Contribution per unit= Sales per unit – Variable cost per unit.

<u>Numerical-</u>

Calculate contribution from the following-

a) Fixed Cost=Rs 50,000, Profit= Rs 20,000

b) Variable Cost=Rs 6,000, Sales= Rs 10,000

c) Sales= Rs 1,50,000, P/V Ratio= 30%.

<u>Solution-</u>

a) Contribution = Fixed Cost + Profit

= 50,000 + 20,000

= Rs 70,000

b) Contribution = Sales – Variable Cost

= 10,000 – 6,000

= Rs 4,000

c) Contribution = Sales * P/V Ratio

$$= 1{,}50{,}000 \times \frac{30}{100}$$

= Rs 45,000

What is the difference between Contribution and Profit?

Contribution and Profit differs from each other in the following ways-

- Contribution is based on the concept of marginal cost, while profit is based on the concept of sales and cost.
- Contribution includes profit and fixed cost both, while profit excludes fixed cost.
- Contribution above break-even point becomes profit, while profit can be derived only after covering the fixed and variable costs.

11.5.5 PROFIT-VOLUME RATIO (P/V RATIO)

P/V Ratio expresses the relation of contribution to sales and is generally expressed in terms of percentage. It is also known as ‘Contribution Ratio’, ‘Contribution Sales Ratio (C/S Ratio)’ or 'Marginal Income Percentage'. P/V Ratio is one of the most significant ratios for studying the profitability of activities of a business. Higher the P/V Ratio more will be the profit and lower the P/V Ratio, lesser will be the profit. Hence every firm tries to maximize its P/V Ratio.

Applications of P/V Ratio-

P/V Ratio is an indicator of the rate at which profit is being earned. Its applications in the business are-

1) Calculation of profit at a given level of sales.

2) Calculation of break-even point.

3) Calculation of profit in case of margin of safety.

4) Calculation of the volume of sales required to earn a given profit.

5) Calculation of the volume of sales required to maintain the present level of profit, if selling price is reduced by specific percentage.

Improvement in P/V Ratio-

As P/V Ratio indicates the rate of profitability, any improvement in this ratio without increase in fixed cost would result in higher profits. Since, P/V Ratio is a function of sales and variable cost it can be improved by-

1) Increasing the selling price per unit.

2) Reducing the variable cost.

3) Changing the sales mix i.e. selling more of those products which have higher P/V Ratio, thus improving the overall P/V Ratio.

Computation of P/V Ratio-

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

Or, = $\frac{Sales - Variable\ Cost}{Sales} \times 100$

Or, = $\frac{Contribution}{Variable\ Cost + Contribution} \times 100$

In the Case when sales and profit of two periods are given.

(2) P/V Ratio = $\frac{Change\ in\ Profit}{Change\ in\ Sales} \times 100$

Or, = $\frac{Change\ Contribution}{Change\ in\ Sales} \times 100$

(3) P/V Ratio = $\frac{Profit}{Margin\ of\ Safety} \times 100$

(4) P/V Ratio = $\frac{Fixed\ Cost}{Break-Even\ Point\ (Rs.)}$ × 100

Numerical-

Calculate P/V Ratio from the following-

a) Sales Rs 1,50,000, Profit Rs 35,000, Fixed Cost Rs 20,000.

b) Sales Rs 90,000, Variable Cost Rs 40,000

c) Selling Price/Unit Rs 12, Variable Cost/ unit Rs 8.

d) Variable cost 40%.

Solution-

(a) P/V Ratio = $\frac{Fixed\ Cost+Profit}{Sales}$ × 100

$= \frac{20,000 + 35,000}{1,50,000} \times 100$

$= \frac{55,000}{1,50,000} \times 100$

= 36.66%

(b) P/V Ratio = $\frac{Sales - Variable\ Cost}{Sales}$ × 100

$= \frac{90,000 - 40,000}{90,000} \times 100$

$= \frac{50,000}{90,000} \times 100$

= 55.55%

(c) P/V Ratio = $\frac{Contribution\ per\ Unit}{Sales\ per\ unit}$ × 100

$= \frac{unit}{Sales\ per\ unit} \times 100$

$= \frac{12-8}{12} \times 100$

$= \frac{4}{12} \times 100$

= 33.33%

(d) P/V Ratio = $\frac{1 - Variable\ Cost\ Ratio}{100}$

$= \frac{1 - 40}{100}$

$= \frac{60}{100}$

= 60%

Check your Progress B

Q.1. Define Contribution.

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Q.2. State any three assumptions of BEP.

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Q.3. Calculate P/V Ratio if sales are ☐ 1,00,000 and variable cost is ☐ 75,000.

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11.5.6 MARGIN OF SAFETY (MOS)

Margin of safety may be defined as the difference between actual sales and the break-even point sales. It means that it is the amount by which actual volume of sales exceed the break-even point. It may be calculated in rupees, units or in percentage. Thus, Margin of Safety is that sale which is above BEP, it gives us profit after meeting fixed costs. Hence, fixed cost is totally ignored in calculating Margin of Safety.

Importance of Margin of Safety-

Margin of Safety serves as a cushion in between profit position and loss position. It is a good indicator of the strength of the business. If the margin of safety is small, a small reduction in sales can be very critical and may result even in loss whereas, if it is large, the position of business will be sound and it can easily cope up with the situation of reduction in sales.

In this way firm, can increase its margin of safety to achieve more and more profit by-

- Increase in volume of production.
- Reduction in fixed or variable costs or both.
- Increase in selling price.
- Substitution of less profitable products by more profitable products.

Computation of Margin of Safety-

A) Margin of Safety in Rupees :-

i) MOS = Sales – BEP (Rs)

ii) MOS = = $\frac{Profit}{P/V\ Ratio}$

B) Margin of Safety in Units :-

i) MOS = Sales – BEP (Units)

ii) MOS = $\frac{Profit}{Contribution\ per\ unit}$

C) Margin of Safety in Percentage :-

i) % of Margin of Safety to sales (MOS Ratio) = $\frac{Margin\ of\ Safety}{Total\ Actual\ Sales} \times 100$

Numerical-

Calculate the Margin of Safety from the following :

		(in Rs.)
Sales	=	2,00,000
Total costs	=	1,50,000
Profit	=	50,000
Fixed Cost	=	90,000
Variable cost	=	60,000
Total Cost	=	1, 50,000

Solution-

$$\text{P/V Ratio} = \frac{\text{Sales - Variable Cost}}{\text{Sales}} \text{ X } 100$$

$$= \frac{2,00,000 - 60,000}{2,00,000} \text{ X } 100$$

$$= \frac{1,40,000}{2,00,000} \text{ X } 100$$

$$= 70\%$$

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$$\text{Now, MOS (Rs.)} = \frac{\text{Profit}}{\text{P/V Ratio}}$$

$$= \frac{50{,}000}{70} \times 100$$

MOS (Rs.)= Rs. 71,428.57

Computation of BEP-

A) BEP in Rupees- also known as 'Sales BEP.'

1) $$\text{BEP} = \frac{\text{Fixed cost x Sales}}{\text{Contribution}}$$

2) $$\text{BEP} = \frac{\text{Fixed cost x Selling Price per unit}}{\text{Contribution per unit}}$$

3) $$\text{BEP} = \frac{\text{Fixed cost}}{\text{P/V Ratio}}$$

4) BEP= Sales - Margin of Safety

B) BEP in Units- also known as 'Output BEP'.

1) $$\text{BEP} = \frac{\text{Fixed cost}}{\text{Contribution per unit}}$$

2) $$\text{BEP} = \frac{\text{BEP (Rs.)}}{\text{Selling price per unit}}$$

Numerical-

Calculate BEP from the following data-

a) Fixed Cost= Rs 1,00,000, Variable cost= Rs 1,50,000, Profit= Rs 1,20,000

b) Fixed Cost= 45,000, Variable Cost Ratio= 60%.

Solution-

a) Sales= Fixed Cost + Variable Cost + Profit

= 1,00,000 + 1,50,000 + 1,20,000 = 3,70,000

Contribution= Sales – Variable Costs

$$=3,70,000 - 1,50,000 = \text{Rs } 2,20,000$$

i.e

$$\text{BEP (in Rs)} = \frac{\text{Fixed cost x Sales}}{\text{Contribution}}$$

$$\text{BEP (in Rs)} = \frac{1,00,000 \text{ x } 3,70,000}{2,20,000}$$

$$= \text{Rs. } 1,68,181.81$$

b)

$$\text{P/V Ratio} = 1 - \text{Variable Cost Ratio}$$

$$= \frac{1 - 60}{100}$$

$$= 40\%$$

i.e.

$$\text{BEP (in Rs.)} = \frac{\text{Fixed Cost}}{\text{P/V Ratio}} \text{ x } 100$$

$$= \frac{45,000}{40} \text{ x } 100$$

$$= \text{Rs. } 1,12,500$$

11.5.7 LIMITATIONS OF BREAK-EVEN ANALYSIS

Break- even analysis is an important tool of management, but based on various assumptions. This technique also has some limitations. These are:-

1) The assumption that all cost can be clearly separated into fixed and variable components is not possible to achieve accurately in practice, thus resulting in inaccurate break-even analysis.

2) It is assumed that fixed costs are constant at all levels and variable costs vary in direct proportion to output. However, such linear behavior of costs is applicable only within a limited range of operations and in many cases cost curve may not be exactly a straight line.

3) The analysis will be doubtful if the business is selling various products with different profit margins.

4) Break even analysis does not consider the capital employed in the production and therefore present only one side of profit planning.

5) The break even analysis assumes a static situation that cannot exists for long period of time. Example- no change in selling price production technology etc. Although these factors keep on changing to improve the overall efficiency.

6) This analysis is based on the assumption of perfect competition as it is assumed that a firm can sell any quantity of its output at a given price. But in reality it is not possible.

7) It also assumes that there should be maximum production for maximum profit but, in general, decision of optimum production is required, not maximum production.

8) It is not necessary that production and sales will be equal. In practice, certain level of stock is also necessary.

In-spite of these limitations, break-even analysis is a valuable management device. It should be used by keeping in mind its limitations also in order to achieve effectiveness and efficiency in organizational functions.

11.6 SUMMARY

Cost volume Profit analysis is an important tool of managerial decision making which helps in fixing prices, determining BEP, selection of alternative, preparing flexible budget, evaluating performance, etc. It studies the relationship between cost of production and volume of production on profit level. It is based on certain assumptions like segregation of total cost into fixed cost and variable cost, existence of only one product or constant product mix, constant selling price even in case of variation in volume. Per unit cost of production is negatively related with amount of profit and volume of production but there is positive relationship between volume of production and amount of profit. Cost volume profit analysis suffers from some limitations also such as fixed cost may not remain constant at high level of production, decrease in selling price at high volume due to sales discount, etc. An important application of cost volume profit analysis is computation of Break Even Point (BEP). BEP is that point of sales volume where total revenues and total expenses are equal. It is the point of no profit, no loss. The difference between actual sales and break even point sales is known as margin of safety. Excess of sales over variable cost is termed as contribution. The relationship of contribution to sales is expressed as P/V ratio.

11.7 Keywords:

Break Even Point (BEP) -	Point of Zero profit or Zero loss.
Contribution -	Excess of sales over variable cost.
Profit Volume Ratio (P/V ratio) -	Ratio of contribution to sales.
Margin of Safety (MOS) -	Difference between actual sales and break even point sales.

11.8 Answers to check your Progress:

'A'

1.	Per Unit variable cost remains constant and total variable cost varies in

	direct proportion to volume of production.
2.	(i) Determining BEP (ii) Helpful in fixing price (iii) Preparing flexible budget
'B'	
1.	Contribution is the difference between sales and variable cost.
2.	(i) All costs can be segregated into fixed and variable components. (ii) Total fixed cost remains constant (iii) Variable cost per unit remains constant
3.	P/V Ratio = $\frac{\text{Sales - VC}}{\text{Sales}} \times 100 = \frac{1,00,000 - 75,000}{1,00,000} \times 100$ $= \frac{25,000}{1,00,000} \times 100 = 25\%$

11.9. TERMINAL QUESTIONS

Ques. 1. What is Break-even Point? How is it calculated? Illustrate.

Ques. 2. What is the P/V Ratio? What are the managerial uses of P/V Ratio?

Ques. 3. What is Margin of Safety and highlight its importance?

Ques. 4. The following information is obtained from a ABC Ltd. in a certain

year:

Sales	Rs. 1,00,000
Variable Costs	Rs. 60,000
Fixed Costs	Rs. 30,000

Determine P/V Ratio, BEP and Margin of Safety. Also find contribution from sales of Rs.1,20,000.

Ques. 5. The position of a company for the year 2014 was as under:

Sales	Rs. 4,00,000
Variable Costs	Rs. 3,00,000
Contribution	Rs. 1,00,000
Fixed Costs	Rs. 30,000
Net Profit	Rs. 70,000

Calculate from the above data:

(1) Profit-Volume Ratio

(2) Sales at Break-even Point

(3) Margin of Safety.

11.10 SUGGESTED READINGS

Arora, M.N. :	Cost and Management Accounting, Himalaya Publishing House, Mumbai, 2008.
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UNIT-12 VARIANCE ANALYSIS

Structure

12.1 INTRODUCTION

Every firm wants to attain some specified targets. These targets are specified not only for sales or profit but also for cost elements. On the basis of market situation, working conditions, performance of competitors, standards are set for quantity, price, wage rate, time, etc. Standard cost is computed on the basis of these standards for material, labour, overhead, sales, etc. Actual performance may differ from this standard level. This difference is known as variance. Identifying and analyzing its causes is termed as variance analysis. This topic is dealt in detail in the subsequent sections.

12.2 OBJECTIVES

After studying this unit, you shall be able to understand:

- Types of variances
- Causes of variances

- Computation of variances

12.3 Meaning of Variance & Variance Analysis:

Variance is a term of standard costing. It simply means the difference between the standard and actual, i.e. standard level and the actual performance. The term 'variance analysis' refers to proper and systematic evaluation of variance in such a way that the managers can easily measure the efficiency and improve the performance. Three steps are followed in variance analysis.

1. **Computing the variances:** Firstly, different variances are computed by using formulae. Under this total cost variances are divided into material, labour and overhead variances and these variances are further segregated into other sub-variances.
2. **Determining the causes of variances:** The next step after computing is to determine the various causes responsible for any variance. Also, their effects on various components of cost are also to be determined by the management.
3. **Settlement of variances:** Finally the various causes of variances are distinguished as controllable and uncontrollable. The controllable variances are dealt by taking appropriate actions and a report is prepared by the management for the corrective measures.

12.4 Classification of Variances:

Basically the variances are classified into five forms as below:-

1. **On the Basis of Function:-** Under this variance is classified into two groups namely cost variances and sales variances.

i) **Cost variances:** Cost variances arise due to the difference between the standard and the actual performance in regards to the various cost elements. Under this variance, following are calculated-

a) Direct Material variance

b) Direct labour variance

c) Overhead variance

- Fixed overhead variance
- Variable overhead variance

ii) **Sales variances:** Sales variance refers to the difference between the actual sales and the budgeted sales over a period of time. The causes for the sales variance are change in sales volume, sales price and sales mix. The sales variances so computed can show the effect on profit or the effect on sales value.

2. **On the Basis of Controllability:-** Under this the variances are classified into controllable or uncontrollable. This type of classification is very important for managerial decision making.

i) **Controllable variances:** Controllable variances are those which are under the control of management and can be controlled by taking necessary steps. For this purpose, any specified person or a department is held responsible for the variance. Example- A purchase official may be held responsible for purchasing the material of very low quality or a supervisor may be held responsible for the wastage of material.

ii) **Uncontrollable variances:** If a variance arises due to the factors which are beyond the control of management it is termed as uncontrollable variance. Thus, any particular person or any specific department cannot be held responsible. Examples- Changes in the wage rates, increase in the market price of materials etc.

3. **On the Basis of Result:-** Under the result basis, variance are of 2 types viz, favorable variance and unfavorable variance.

i) **Favourable variance:** When the actual cost is less than standard cost it is known as favorable variance. This variance is a good indicator of business efficiency and is represented by 'F' or '+' sign.

ii) **Unfavourable variance:** When the actual cost is more than the standard cost it is known as unfavorable or adverse variance. It indicates that a business is operating inefficiently and therefore a deeper and closer analysis is required. It is represented by 'A' or '-' sign.

Favorable variance has favorable effect on the profits of business whereas unfavorable variance had adverse effect on the profits.

4. **On the Basis of Nature:-** Under this the variance are divided into basic variances and sub-variances.

i) **Basic variances:** The variances which arise due to monetary factors like price of raw material, wage rates and also due to non-monetary factors like time required to complete a job, physical units. Material price variance, labour rate variances are due to monetary factors whereas material quality variance, labour efficiency variances are due to non-monetary factors.

ii) **Sub-variances:** Basic variances which arise on account of non-monetary factors are further analysed and then classified into sub-variances. Like Material quantity variance may be further divided into Material mix variance, Material yield variance, Material revised usage variance etc.

5. **On the basis of Management:-** Under this variances are grouped as absolute variances and relative variances.

i) **Absolute variances:** When the variances are determined on the basis of standard and actual cost it is referred as absolute variance.

ii) **Relative variances:** When variances are denoted as percentage of standard cost, they are known as relative variances.

12.5 IMPORTANCE OF VARIANCE ANALYSIS

The importance of variance analysis can be highlighted as under-

1. **Serves as a basis of future action and planning:** Analysis of deviations and their causes, identifying the responsible persons and the suggestion for corrective measures in all provide a proper and useful base for future action and planning by the management.
2. **Measurement of operational efficiency:** A favorable variance denotes that the activities of the business are quite efficient whereas unfavourable variance indicates that the business is operating inefficiently. Thus variance analysis is a very important tool for measuring operational efficiency.
3. **Knowledge of variance centers:** The main focus of variance analysis is to identify the level, activity or departments where variances are arising such that special attention may be given to these departments or activities.
4. **Techniques of cost control:** Variance analysis is one of the most important techniques of cost control as necessary measures and corrective actions can be taken once the deviations and their causes are analyzed.
5. **Determining Responsibility:** Variance analysis makes it easy for fixing the responsibility and determining the persons or departments responsible for variances which helps in taking corrective actions.
6. **Relative measurement of performance:** Through variance analysis, the performance of different departments of a business can be easily evaluated in relative terms.

12.6 COMPUTATION OF VARIANCES

12.6.1 Material Variances

1. **Material Cost Variance (MCV):-** Material cost variance is the difference between the actual cost of direct materials used and the standard cost of direct materials specified for the output achieved. This variance arises from the differences between quantities consumed and quantities of material allowed for production and from difference between prices paid and prices predetermined.

Formula:-

Material Cost Variance = Standard cost of actual output - Actual cost

MCV = SC - AC

Or, Material Cost Variance =

[Standard quantity for actual output X Standard price] – [Actual quantity X
Actual Price]

MCV = (SQ X SP) - (AQ X AP)

Numerical:

A furniture company uses printed sheets for doors. The data is as follows-

Standard quantity of sheets per door	=	5 sq.ft.
Standard price per sq.ft. of sheet	=	Rs. 8
Actual production of doors	=	2000
Sheets actually used	=	5600 sq.ft.
Actual price of sheet per sq.ft.	=	Rs 10

Calculate MCV.

Solution-

MCV =(SQ X SP) - (AQ X AP)

=(2000 X 5 X 8) - (5600 X 10)

=80,000 - 56000

=24,000 (F)

Material cost is further divided into Material Price Variance and Material Usage Variance.

2. **Material Price Variance (MPV):-** Material price variance is that portion of material cost variance which is due to the difference between the standard price specified and the actual price paid.

Formula:-

Material Price Variance= (Standard Price -Actual Price) X (Actual Quantity)

MPV = (SP - AP) X AQ

Causes for Material Price Variance -

Material Price Variance may arise due to the following reasons:-

- Changes in market price of materials.
- Failure to purchase materials at proper time.
- Failure to purchase standard quality of materials.
- Failure to secure expected discount on purchase.
- Increase in transportation costs.
- Change in the rates of excise duty, purchase tax etc.

Generally, Material Price Variance is the responsibility of the purchase manager. However, Material Price Variance due to changes in tax and market fluctuations are grouped into uncontrollable variances.

3. **Material Usage Variance:-** Material Usage Variance is that portion of material cost variance which is due to the difference between the standard quantity specified and the actual quantity of material used.

Formula-

Material Usage Variance = (Standard quantity for actual output - Actual

Quantity) X (Standard Price)

MUV = (SQ - AQ) X (SP)

Causes for Material Usage Variance

Material Usage Variance may arise due to following reasons-

- Increase in wastage due to poor workmanship or defect in plant and machinery.
- Carelessness in the use of materials.
- Change in technique or method of production.
- Change in material mix etc.
- Use of defective, Sub-standard material.
- More or less yield from material than expected.

Numerical-

A manufacturing concern furnishes the following information-

Standard:

Material for 100 kg finished products	150 kg
Price of material	Rs. 1.30 per kg

Actual:

Cost of Materials	Rs. 3,85,000
Material Used	3,10,000 kg
Output	2,50,000 kg

Calculate MCV, MPV, MUV.

Solution-

$SQ = \frac{150}{100} X\ 2{,}50{,}000$ = 3,75,000 kg; SP = Rs. 1.30

$AQ = 3{,}10{,}000\ kg \qquad AP = \frac{3{,}85{,}000}{3{,}10{,}000} = \text{Rs.}\,1.24$

1) Material Cost Variance $= (SQ \; X \; SP) - (AQ \; X \; AP)$

$= (2,50,000 \; X \; 1.30) - (3,10,000 \; X \; 1.24)$

= 3,25,000 - 3,84,400

= 59,400 (A)

2) Material Price Variance $= AQ$ X $(SP - AP)$

= 3,10,000 X $(1.30 - 1.24)$

= 3,10,000 X 0.06

= 18,600 (F)

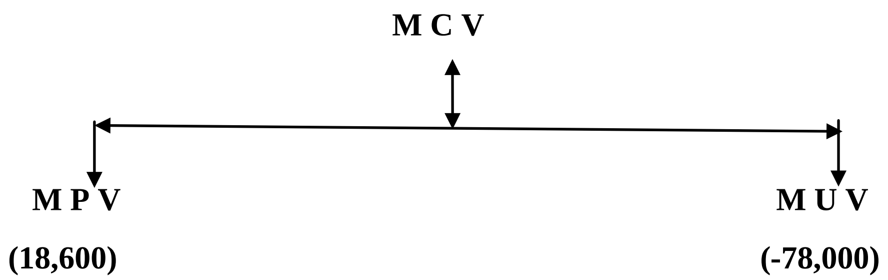
3) Material Usage Variance = SP X (SQ - AQ)

=1.30 X (2,50,000 - 3,10,000)

= 1.30 X (- 60,000)

= 78,000 (A)

<u>Check:</u>



Classification of Material Usage Variance-

Material Usage Variance (MUV) is further divided into:-

- Material Mix Variance (MMV)
- Material Revised Usage Variance (MRUV)
- Material Yield Variance (MYV)

I. Material Mix Variance (MMV):- Material mix variance is that portion of the material quantity variance which is due to the difference between the actual composition of a mixture and the standard mixture. It may arise in industries like chemicals rubber etc, where a number of raw materials are mixed to produce a final product.

<u>Formula-</u>

Material Mix Variance= (Revised standard quantity - Actual quantity) X Standard Price

MMV = (RSQ - AQ) X SP

$$\text{where, RSQ} = \frac{\text{Standard quantity of one Material}}{\text{Total of standard quantities of all materials}} \times \text{Total of actual quantities of all materials}$$

$$\text{Or, RSQ} = \frac{SQ_1}{TSQ} \times TAQ$$

II. Material Revised Usage Variance (MRUV):- Material revised usage variance arises due to differences in standard quantity for actual output and revised standard quantity for actual mix.

Formula-

Material Revised Usage Variance= (Standard quantity - Revised Std. Quantity) X Standard Price

MRUV = (SQ - RSQ) X SP

Numerical-

From the data given below calculate MMV, MRUV and MUV

Raw material	Standard	Actual
A	40 Units @ Rs 45 per Unit	60 Units @ Rs 50 per Unit
B	60 Units @ Rs 50 per Unit	70 Units @ Rs 60 per Unit
	100 Units	130 Units

Solution-

Calculation of Revised Standard Quantity (RSQ)

$$\text{RSQ of A} = \frac{SQ(A)}{TSQ} \times TAQ$$

$$= \frac{40}{100} \times 130$$

$$= 52 \text{ Units}$$

$$\text{RSQ of B} = \frac{SQ(B)}{TSQ} \times TAQ$$

$$= \frac{60}{100} \times 130$$

$$= 78 \text{ Units}$$

1) Material Mix Variance-

MMV = (RSQ- AQ) X SP

MMV(A) = (52-60) X 45

= 360 (A)

MMV(B) = (78-70) X 50

= 400 (F)

MMV(AB) = - 360 + 400

= 40 (F)

2) Material Revised Usage Variance-

MRUV = (SQ- RSQ) X SP

MRUV(A) = (40-52) X 45

= 540 (A)

MRUV(B) = (60-78) X 50

= 900 (A)

MRUV(AB) = - 540 - 900

= 1440 (A)

3) Material Usage Variance-

MUV = (SQ- AQ) X SP

MUV(A) = (40-60) X 45

= 900 (A)

MUV(B) = (60-70) X 50

= 500 (A)

MUV(AB) = - 900 - 500

= 1400 (A)

Check:

M U V 1400(A)

M M V **M R U**
V

40 (F) **1440**
(A)

III. Material Yield Variance:- It is that portion of material usage variance which is due to the difference between the actual yield obtained and standard yield specified in terms of actual inputs. Thus yield variance occurs when the output of the final product does not correspond with the output that could have been obtained by using actual inputs.

Formula-

Material Yield Variance = (Actual yield - Standard yield) × Std.

cost per Unit

MYV = (AY - SY) X SC per unit

Numerical-

Standard input = 100 kg, Standard yield = 90 kg, Standard cost per kg of output = Rs 20, Actual input = 200 kg, Actual yield = 182 kg.

Compute the yield variance.

Solution-

$$\text{Standard yield for actual output} = \frac{90}{100} \times 200$$

$$= 180 \text{ kg}$$

M Y V = (AY - SY) X SC per unit

= (182 - 180) X 20

= 40 (F)

Check your Progress A

Q.1. What is the formula for computing material price variance?

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Q.2. State any three causes for material usage variance.

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Q.3. Material usage variance can be divided into how many categories?

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Q.4. Compute Material Mix variance for X, if Standard quantity for X is 80 units, Revised Standard Quantity for X is 100 units, Actual quantity of X is 105 units, Standard Price of X is ☐ 10 per unit and actual price is ☐ 8 per unit.

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12.6.2 LABOUR VARIANCES

1) **Labour Cost Variance (LCV):-** Labour cost variance denotes the difference between the actual direct wages paid and the standard direct wages specified for the output achieved.

Formula-

Labour cost variance = Standard labour cost - Actual labour cost

$$LCV = (SLC - ALC)$$

$$\text{Labour Cost Variance} = \left[\begin{array}{c}\text{Std. hours for}\\\text{output}\end{array} \times \begin{array}{c}\text{Std. Rate}\\\text{per hour}\end{array}\right] - \left[\begin{array}{c}\text{Actual}\\\text{hours}\end{array} \times \begin{array}{c}\text{Actual}\\\text{Rate per}\\\text{hour}\end{array}\right]$$

$$LCV = (SH \times SR) - (AH \times AR)$$

Numerical-

From the following information calculate labour cost variance-

Standard hours per unit	=	10.
Standard Rate	=	Rs 5 per hour
Actual hours	=	12,000 hours
Actual Rate	=	Rs 4 per hours
Actual production	=	1000 Units

Solution-

Labour Cost Variance = (SH for actual output X SR) - (AH X AR)

= (1000 X 10 X 5) - (12000 X 4)

= 50,000 - 48,000

= Rs 2000 (F)

Labour cost variance is further divided into labour rate variance and efficiency variance.

2) **Labour Rate Variance (LRV):-** When actual direct labour hour rates differ from standard rates, the result is a labour rate variance. It is that portion of the direct wages variance which is

due to the difference between the actual rate paid and standard rate of pay specified.

Favorable rate variance arises whenever actual rates are less than standard rates and vice-versa for unfavorable.

Formula-

Labour Rate Variance = (Std. Rate - Actual Rate) X Actual Hours

= (SR - AR) X AH

Causes-

- Changes in the basic wage rates, due to change in demand and supply of workers etc.
- Changes in method of wage settlement.
- Unscheduled overtime.
- Employment of workers of grades different from the standard grades specified.
- New workers not being paid at full rate.

3) **Labour Efficiency Variance (LEV):-** If actual direct labour hours required to complete a job differ from the number of standard hours specified, a labour efficiency variance results. Thus, LEV is the difference between standard and actual time valued at standard rate.

Formula-

$$\text{Labour Efficiency Variance} = \left[\text{Std. hours for actual output} - \text{Actual hours}\right] \times \left(\text{Standard Rate}\right)$$

LEV = (SH - AH) X SR

Causes-

- Inefficient workers.
- Poor working conditions.
- Use of defective or low-quality materials.
- Inadequate training of employees.
- Use of defective machinery and equipment.
- Change in the methods of operation.

Numerical:-

From the following table calculate LCV, LRV, LEV

	Standard = 100 Units			**Actual = 100 Units**		
Grade of worker	Hours	Rate (Rs)	Amt. (Rs)	Hours	Rate (Rs)	Amt. (Rs)
X	4000	2	8000	4500	1	4500
Y	3000	1	3000	2000	4	8000
Total	**7000**		**11000**	**6500**		**12500**

Solution-

1) LCV = SC - AV

= 11000 - 12500

= 1500 (A)

2) LRV = (SR - AR) X AH

X = (2 - 1) X 4500 ,Y = (1 - 4) X 2000

= 4500 (F) = - 6000 (A)

LRVXY = 1500 (A)

3) LEV = (SH - AH) X SR

X = (4000 - 4500) X 2 Y = (3000 - 2000) X 1

= 1000 (A) = 1000 (F)

LEV(xy) = 0

Check:

L C V 1500(A)

L R V **L E V**

1500 (A) **0**

Labour efficiency variance is further divided into Mix Variance and Yield variance.

I. **Labour Mix Variance:-** Labour mix variance arises when more than one grade of workers are employed and the composition of actual grade of workers differ from those specified.

Formula-

Labour Mix Variance = (Revised std. hours - Actual hours) X Std. Rate

LMV =(RSH - AH) X SR

$$RSH = \frac{\text{Standard Hours}}{\text{Total Standard Hours}} \text{ X Total Actual Hours}$$

$$RSH = \frac{SH}{TSH} \text{ X TAH}$$

From the above table, LMV can be calculated as-

$$RSH(X) = \frac{4000}{7000} \text{ X } 6500 \qquad RSH(Y) = \frac{3000}{7000} \text{ X } 6500$$

$$= 3714.29 \text{ hrs} \qquad = 2785.71 \text{ hrs}$$

LMV = (RSH - AH) X SR

X = (3714.29 - 4500) X 2 ; Y = (2785.71 - 2000) X 1

= 1571.42 (A) = 785.71 (F)

LMV(XY) = 785.71 (A)

II. Labour Yield Variance:- Labour Yield Variance is a sub-variance of LEV.

Formula-

$$\text{Labour Yield Variance} = \left[\text{Standard Labour cost per unit}\right] \text{ X } \left[\text{Actual Yield} - \text{Standard Yield}\right]$$

LYV = SC per unit (AY - SY or RSY)

$$\text{where,} \quad RSY = \frac{SY \text{ X } AH}{SH}$$

Numerical-

Standard Output =500 units

Standard Time =2000 hrs

Standard Rate = Rs 20 per hour

Actual Output = 400 units

Calculate Labour Yield Variance

Solution-

$$\text{Standard Time per unit} = \frac{2000 \text{ hrs}}{500 \text{ units}}$$

$$= 4 \text{ hrs}$$

$$\text{Standard cost per unit} = 4 \text{ hrs} \times 20$$

$$= \text{Rs.}80$$

$$\text{LYV} = (\text{AY} - \text{SY}) \times \text{SC per unit}$$

$$= (400 - 500) \times 80$$

$$= \text{Rs } 8000 \text{ (A)}$$

III. **Labour Idle Time Variance:-** Idle time variance occur when workers are not able to do the work due to some reasons during the hours for which they are paid. These reasons can be lack of material, power failure, defect in machinery, strikes etc. Labour idle time variance is always adverse.

Formula-

Labour Idle time Variance= Idle Time or Idle Hours X Standard Rate

$$\text{LITV} = \text{IT or IH} \times \text{SR}$$

Check your Progress B

Q.1. When does labour mix variance arise?

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Q.2. How will you compute Labour yield variance?

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Q.3. Which variance is always adverse?

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12.6.3 OVERHEAD VARIANCE

Overhead is the sum total of indirect materials, indirect labour and indirect expenses. Analysis of overhead variances is an important managerial tool as it helps in maintaining proper control on costs.

Following are computed under overhead variance-

1) **Overhead Cost Variance (OCV):-** It is the difference between the actual overhead cost incurred and the standard cost of overhead for the output achieved.

Formula-

$$\text{OCV} = \text{Actual Overhead} - \left(\begin{array}{c}\text{Standard Hours for}\\ \text{Actual Output}\end{array} \times \begin{array}{c}\text{Standard}\\ \text{Overhead}\\ \text{rate}\end{array}\right)$$

Numerical-

Actual Overhead = Rs 25,000

Actual Output = 12,000 units

Standard output = 10,000 units

Standard hours = 10,000

Standard overhead = Rs 30,000

Calculate Overhead Cost Variance (OCV)

Solution-

$$\text{Standard Overhead Rate} = \frac{\text{Standard Overhead}}{\text{Standard Hours}} = \frac{30,000}{10,000}$$

$$= \text{Rs 3 per Hr}$$

$$\text{Standard Hours for Actual Output} = \frac{10,000 \text{ hrs}}{10,000 \text{ units}} \times 12000 \text{ units}$$

$$= 12000 \text{ hrs}$$

OCV = 25,000 - (12000 X 3)

= Rs 11,000 (A)

Overhead Cost Variance is divided into variable overhead and fixed overhead variances.

12.6.3.1 VARIABLE OVERHEAD VARIANCES

1) **Variable overhead cost variance (VOCV):-** It is the difference between actual variable overhead cost and standard variable overhead allowed for the actual output achieved.

Formula:

$$VOCV = \text{Actual Overhead} - \left[\begin{array}{c}\text{Standard Hours}\\ \text{for Actual}\\ \text{Output}\end{array} \times \begin{array}{c}\text{Standard}\\ \text{variable}\\ \text{Overhead rate}\end{array} \right]$$

Variable overhead cost variance is sub-divided into the following two variances-

a) **Variable Overhead Budget Variance (VOBV):-** It is also known as expenditure variance. It indicates the difference between actual variable overhead and budgeted variable overhead based on actual hours worked.

Formula-

VOBV = Std. variable Overhead for Actual Hours - Actual Variable Overhead

b) **Variable Overhead Efficiency Variance (VOEV):-** This variance arises due to the difference between standard hours allowed for actual output and actual hours. It is similar to labour efficiency variance.

Formula-

$$VOEV = \left[\begin{array}{c}\text{Std. Hours for}\\ \text{Actual Output}\end{array} - \begin{array}{c}\text{Actual}\\ \text{Hours}\end{array} \right] \times \left[\begin{array}{c}\text{Std. Variable}\\ \text{Overhead rate}\end{array} \right]$$

Numerical-

Calculate variable overhead variances from the following-

	Budgeted	**Actual**
Output (Units)	20,000	19,000
Hours	5000	4,500
Overhead - Fixed	10,000	10,500
Variable	5000	4,800

Solution-

Standard Variable Overhead Rate = $\frac{\text{Budgeted Overhead}}{\text{Budgeted Hours}} \quad \frac{\text{Rs. } 5000}{5000 \text{ hrs}}$

= Rs 1 per Hr

Standard Hours for Actual Output = $\frac{\text{Budgeted Hours}}{\text{Budgeted Output}}$ X Actual Output

$\frac{5000}{20000}$ X 19000

= 4750 hours

a) VOCV = (Std. hours for actual output X Std. Rate) - (Actual Variable

Overhead)

=(4750 X 1) - 4800

= Rs 50 (A)

b) VOBV = (Std. Rate X Actual Hours) - Actual Var. Overhead

= (1 X 4500) - 4800

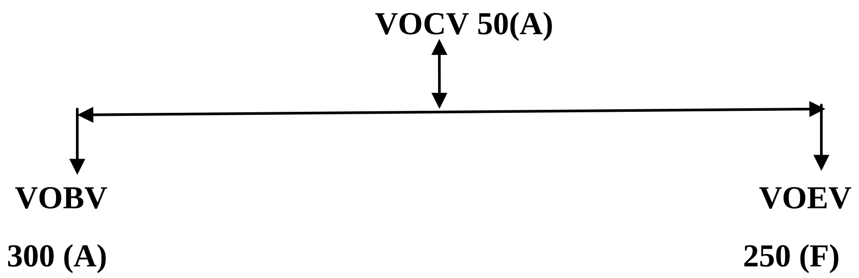
= Rs. 300 (A)

c) VOEV = (Std. hours for actual output - Actual hours) X Std. Rate

= (4750 - 4,500) X 1

= Rs. 250 (F)

Check:



12.6.3.2 Fixed Overhead Variances

1) **Fixed Overhead Cost Variance (FOCV):-** This variance indicates the difference between the actual fixed overhead cost and standard fixed overhead cost allowed for the actual output.

Formula-

$$\text{FOCV} = \left[\text{Std. Hours for Actual Output} \times \text{Std. Fixed Overhead Rate}\right] - \left[\text{Actual fixed overhead}\right]$$

a) **Fixed Overhead Expenditure or Budget Variance (FOBV):-** This variance arises due to the difference between budgeted fixed overhead and the actual fixed overhead. Also known as Spending Variance.

Formula-

$$\text{FOBV} = \text{Budgeted Fixed Overhead} - \text{Actual Fixed Overhead}$$

b) Fixed overhead Volume Variance (FOVV):- The difference between the standard fixed overhead cost allowed (absorbed) for the actual output and the budgeted fixed overhead based on the standard hours during the period is termed as fixed overhead volume variance.

<u>Formula-</u>

$$\text{FOVV} = \left[\begin{array}{c}\text{Std. Hours for}\\ \text{Actual Output}\end{array}\right] - \begin{array}{c}\text{Budgeted}\\ \text{Hours}\end{array} - \left[\text{Standard Rate}\right]$$

Volume Variance is further divided into-

1) **Efficiency Variance**

2) **Capacity Variance**

3) **Calendar Variance**

i) **Fixed Overhead Efficiency Variance (FOEV):-** It is that portion of volume variance which arises when actual hours of production used for actual output differ from the standard hours specified for that output. Thus, it shows the difference between actual quantity produced and standard quantity due to higher or lower efficiency of workers.

<u>Formula-</u>

$$\text{Efficiency Variance} = \left[\begin{array}{c}\text{Std. hours for}\\ \text{actual output}\end{array} - \begin{array}{c}\text{Actual}\\ \text{hours}\end{array}\right] \times \left[\begin{array}{c}\text{Standard}\\ \text{Rate}\end{array}\right]$$

ii) **<u>Fixed Overhead Capacity Variance (FOCV):-</u>** It is that part of fixed overhead volume variance which is due to the difference between the actual capacity worked (in hours) and budgeted capacity (expressed in hours) during a given period.

This variance represents idle time also, as when plant capacity actually utilised is more or less than the planned capacity due to factors such as idle time, power failure, strikes, under over customer demand etc, is known as Fixed Overhead Capacity Variance.

Formula-

$$\text{Capacity Variance} = \left[\text{Actual Hours worked} - \text{Budgeted Hours}\right] \times \left(\text{Standard Rate}\right)$$

Numerial-

From the following data, Calculate Efficiency Variance and Capacity Variance-

	Budgeted	**Actual**
a) Production (Units)	12000	11500
b) Man Hours	6000	5200
c) Overhead Costs (Fixed)	10500	12000

Solution-

$$\text{Standard Hours for Actual Output} = \frac{6000}{12000 \text{ units}} \times 11500 \text{ units}$$

$$= 5750 \text{ hrs}$$

$$\text{Standard Fixed Overhead Rate} = \frac{\text{Rs. } 12000}{6000 \text{ hrs}}$$

$$= \text{Rs. } 2$$

$$\text{Efficiency Variance} = \left[\text{Std. hours for actual output} - \text{Actual hours}\right] \times \left(\text{Standard Rate}\right)$$

$$= (5750 - 5200) \text{ X } 2$$

$$= \text{Rs. } 1100 \text{ (F)}$$

$$\text{Capacity Variance} = \left[\text{Actual Hours worked} - \text{Budgeted Hours}\right] \times \left(\text{Standard Rate}\right)$$

$$= (5200 - 6000) \text{ X } 2$$

$$= \text{Rs. } 1600 \text{ (A)}$$

$$\text{Fixed Overhead Volume Variance} = \left[\text{Std. Hours for actual Output} - \text{Budgeted Hours}\right] \times \left[\text{Standard Rate}\right]$$

$$= (5750 - 6000) \text{ X } 2$$

$$= \text{Rs. } 500 \text{ (A)}$$

Check:

FOVV 500 (A)

FOEV **FOCV**

1100 (F) **1600**
(A)

iii) **Calendar Variance:-** It is that portion of volume variance which is due to the difference between the number of actual working days in the period to which the budget is applicable and budgeted number of days in the budget period. This variance arises only in exceptional circumstances and is generally adverse because of extra holidays.

Formula-

$$\text{Calendar Variance} = \left[\text{Actual No. of working days} - \text{Std. No. of working days}\right] \times \left[\text{Standard Rate per days}\right]$$

Numerical-

From the following calculate Calendar Variance-

Standard no. of working days	=	25
Standard fixed overheads rate (per hour)	=	5
Budgeted hours	=	11,500
Actual hours	=	10,000
Actual no. of working days	=	22

Solution-

$$\text{Standard hours per day} = \frac{11{,}500}{25 \text{ days}}$$

$$= 460 \text{ hrs}$$

Standard Overhead rate per day = Standard hrs per day × Std. rate per hrs

460 × 5 = Rs. 2300

$$\text{Calendar Variance} = \left(\text{Actual No. of working days} - \text{Std. No. of working days}\right) \times \left(\text{Standard Rate per day}\right)$$

$= (22- 25) \text{ X } 2300$

$= \text{Rs. } 6900 \text{ (A)}$

Check your Progress C

Q.1. What is Calendar variance?

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Q.2. If budgeted output is 10,000 units, Actual output is 12,000 units, budgeted hours are 5,000, Actual Hours are 5,500 and budgeted variable overhead is Rs. 15,000, then what will be the amount of variable overhead efficiency variance?

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12.6.4 SALES VARIANCE

To obtain full advantage of standard costing system it is advisable to calculate sales variance. Sales variance refers to the variances that affect the budgeted profit due to difference in sales revenues i.e. change caused either by variation in selling prices or sales quantities.

Type of Sales Variance-

1) **Sales Value Variance:-** It is the difference between the budgeted value and the actual value of sales affected during a period.

Sales Value Variance = Actual sales - Budgeted sales

2) **Sales Volume Variance:-** It is that part of sales value variance which is due to the difference between the actual volume (quantity) and the standard volume of sales.

Sales Volume Variance= (Actual quantity- Budgeted quantity) x Std.

Price

= Standard sales - Budgeted sales

3) **Sales Price Variance:-** It is that part of the sales value variance which is due to the difference between the standard price specified and the actual price charged.

Sales Price Variance= (Actual Price - Standard Price) × Actual Quantity

4) **Sales Mix Variance:-** It is that portion of the sales volume variance which is due to the difference between the standard and the actual quantities of each product or group of product of which sales are composed.

Sales Mix Variance= (Actual quantity - Revised std. quantity) × Std.

Price.

$$\text{where, RSQ} = \frac{\text{Total actual quantity of all products}}{\text{Total standard quantities of all products}} \times \text{Std. quantity of one product}$$

5) **Sales Quantity Variance:-** It is the difference between the budgeted sales and revised standard sales.

Sales quantity variance=(Revised std. quantity-Budgeted quantity) x

Std. Price

Revise standard quantity (RSQ) means actual sales quantity in budgeted ratio of products. When the budgeted quantity is more than revised standard quantity, this variance is adverse and vice-versa.

Check-

i) Sales value variance= Price Variance + Volume Variance

ii) Sales Volume Variance = Mix Variance + Quantity Variance

i.e. Sales Value Variance = Price Variance + Mix Variance + Quantity variance.

12.7 SUMMARY

Variance means the difference between the standard level and the actual performance. Variance analysis is an important tool for measuring operational efficiency which helps in proper planning and suggesting corrective measures by identifying causes of variance. If actual cost is less than standard cost it is known as favourable variance and if it is more than standard cost then it is known as unfavourable or adverse variance. Variances can be classified on different basis. The most significant classification of variances is done on the basis of cost elements. According to it, there are three types of variances- material, labour and overhead variance. Material cost variance is the difference between the actual cost of direct materials used and the standard cost of direct materials specified for the output achieved. Material cost variance can be further classified into material price variance, material usage variance, material mix variance, material revised usage variance and material yield variance. Similarly, Labour Cost Variance can be divided into labour rate variance, labour efficiency variance, labour mix variance, labour yield variance and labour idle mix variance. Overhead cost variance can be divided into variable and fixed overhead variance.

12.8 KEYWORDS

Variance	Difference between standard and actual
Relative variance	Variance denoted as percentage of standard cost.

12.9. ANSWERS TO CHECK YOUR PROGRESS

'A'	
1.	MPV = (SP - AP) X AQ
2.	Increase in wastage, use of defective material, change in material mix.
3.	Material usage variance can be divided into three categories- **(i)** Material Mix Variance. **(ii)** Material Revised Usage Variance **(iii)**Material yield Variance
4.	MMV (x) = (RSQ - AQ) X SP = (100 - 105) X 10 = 50 (A)
'B'	

1.	Labour mix variance arises when more than one grade of workers are employed and the composition of actual grade of workers differ from those specified.
2.	Labour yield Variance = Standard labour cost per unit X (Actual yield - Standard yield)
3.	Labour idle time variance is always adverse.
'C'	
1.	It is that portion of volume variance which is due to difference between the number of actual working days and budgeted number of days in the budget period.
2.	Standard variable overable rate = $\frac{15,000}{5,000}$ = ☐ 3 per hour Standard Hours = $\frac{5,000}{10,000}$ X 12,000 = 6,000 hours Variance overhead efficiency variance = (6,000 - 5,500) X 3 = ☐ 1,500 (F)

12.10 TERMINAL QUESTIONS

Ques.1. Explain the meaning of 'Variance Analysis' and describe its significance.

Ques.2. What is Material Cost Variance in Standard Costing? Explain the possible causes for Material Price Variance and Material Usage Variance.

Ques.3. What is Labour Efficiency Variance?

Ques.4. From the following, you are required to calculate:

(A) Material Price Variance

(B) Material Usage Variance

(C) Material Cost Variance.

Quantity of material purchased	5,000 Units
Value of material purchased	Rs. 15,000
Standard quantity of material required for one ton of finished product.	25 Units
Standard rate of material	Rs. 2.5 per unit
Opening stock of material	Nil

Closing stock of material	500 Units
Sale of Finished goods during the period	160 ton
Closing stock of finished goods	20 ton

Ques.5. Calculate Labour Variance from the following data:

Standard time	4 hours per unit
Standard rate	Rs 6 per unit
Actual Production	2,000 units
Total hours taken	8,500 hours
Idle time	200 hours
Actual rate	Rs. 5.80 per hour

12.11. SUGGESTED READINGS

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MBA-1.3

Accounting For Management

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BLOCK

4

Ratio Analysis and Budgeting

UNIT-13

RATIO ANALYSIS

UNIT-14

LEVERAGE ANALYSIS

UNIT-15

BUDGETING AND BUDGETING CONTROL

UNIT-16

INVESTMENT APPRAISAL METHODS

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TESLA-016

UNIT-13 RATIO ANALYSIS

Structure

13.1 INTRODUCTION

Ratio Analysis is an important and powerful technique or method used for financial analysis. The term 'Financial Analysis is also known as analysis and interpretation of financial statements. Every management is interested in knowing the financial strengths to make their better use and spot out the weakness of the firm to take suitable corrective actions in time. Thus, a proper diagnosis of financial statement is required to judge the profitability, financial soundness of the firm and chalk out the way to improve existing performance.

13.2 OBJECTIVES

After studying this unit, you shall be able to understand:

- Meaning of financial ratio.
- Types of ratio.
- Advantages and limitations of ratio analysis.

13.3 Meaning of Ratio and Ratio Analysis

A financial ratio is a relationship between two accounting figures, expressed mathematically. Ratios help to summarise large quantities of financial data to make qualitative judgment about the firm's financial performance. They are the symptoms of health of an organisation. Ratio Analysis is applied to financial statements to analyse the success, failure and progress of a business.

13.4 TYPES OF RATIO

Ratios have been classified into 4 categories-

1) Liquidity Ratios

2) Turnover Ratios

3) Solvency Ratios

4) Profitability Ratios

13.4.1 LIQUIDITY RATIOS

Liquidity means ability of a firm to meet its current liabilities. A firm should ensure that it does not suffer from lack of liquidity and also does not have excess liquidity.

a. **Current Ratio-** This ratio is most commonly used to perform the short-term financial analysis. It is also known as working capital ratio, it matches the current assets of the firm to its current liabilities.

Formula-

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Meaning of Current Assets- These include all those assets which can be converted into cash within a year. They are stock, debtors, bills receivable, cash in hand and at bank, prepaid expenses, readily marketable securities.

Meaning of Current Liabilities- These include all obligations maturing within a year. They are sundry creditors, bank overdraft, outstanding expenses, unclaimed dividends etc.

Significance and Objectives- Current ratio is an indicator of firm's short-term financial position and policy. A relatively high current ratio indicates that the firm is liquid and has the ability to meet its current liabilities. While a relatively low current ratio indicates that the firm will find difficult to pay its liabilities. Ideal current ratio is 2:1. A very high current ratio is also not desirable because it indicates idleness of funds which is not a sign of efficient financial management.

b. **Quick Ratio**- It is also termed as Acid test ratio or liquid ratio. It is a more severe test of liquidity of a company than the current ratio. It shows the ability of a business to meet its immediate financial commitments. A comparison of current ratio with quick ratio shall indicate the inventory hold-ups.

Formula-

$$\text{Quick Ratio} = \frac{\text{Quick (or Liquid) Assets}}{\text{Quick Liabilities}}$$

Meaning of Quick assets and Quick liabilities- The quick assets include all current assets excluding stock and prepaid expenses because they cannot be immediately converted into cash. Quick liabilities refer to all current liabilities except bank overdraft.

Significance and Objective- When quick ratio is used along with current ratio, it gives a better picture of the firm's ability to meet its shot-term liabilities out of its short-term assets. This ratio is of great importance for banks and financial institutions. Generally quick ratio of 1:1 is considered satisfactory.

13.4.2 TURNOVER RATIOS

They are used to indicate the efficiency with which assets and resources of the firm are being utilized. These ratios are known as turnover ratios because they indicate the speed with which assets are being converted or turned over into sales. These ratios thus express the relationship between sales and various assets. A higher turnover ratio generally indicates better use of capital resources which in turn has a favourable effect on the profitability of the firm.

a. Stock Turnover Ratio- This ratio indicates the number of times the stock has been turned over during the period and evaluates the efficiency with which the firm is able to manage its inventory.

Formula-

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{Average Stock (or Inventory)}}$$

Significance and Objectives- This ratio indicates whether investment in inventory is efficiently used or not. This ratio gives the rate at which stocks are converted into sales and then into cash. A low inventory turnover ratio is an indicator of dull business, accumulation of inventory, over investment in inventory or unsaleable goods etc. While a high stock turnover ratio is considered better as it indicates brisk sales. But a high ratio is always not favourable , as it may be the result of a very low level of stock which results in frequent out-of-stock positions. This situation prevents company from meeting customer's demands and the company cannot earn maximum profits.

Thus a company should have optimum stock turnover ratio so that it is able to earn a reasonable profit.

b. Debtors Turnover Ratio- This ratio shows the rate at which cash is generated by the turnover of debtors. Debtors are an important constituent of current assets and therefore the quality of debtors determines a firm's ability to a great extent. It includes trade debtors and bills receivables.

Formula-

$$\text{Debtors Turnover Ratio} = \frac{\text{Net Credit Sales}}{\text{Average Debtors}}$$

$$\text{Debt Collection Period} = \frac{\text{Days in the Year}}{\text{Debtors turnover ratio}}$$

Significance and Objectives- This ratio indicates the efficiency of the management staff entrusted with collection of book debts. A higher debtors turnover ratio is considered better as it shows that debts are collected more quickly. This ratio also helps in Cash budgeting since flow of cash from customers can be worked out on the basis of sales.

c. **Creditors Turnover Ratio-** It is also known as creditors' velocity. In the course of business operations, a firm has to make credit purchases and incur short-term liabilities. So, a creditor or supplier of goods is interested in finding out how much time the firm is likely to take in repaying its trade creditors.

Formula-

$$\text{Creditors Turnover Ratio} = \frac{\text{Net Credit Purchase}}{\text{Average Trade Creditors}}$$

$$\text{Average Payment Period} = \frac{\text{No. of Working Days}}{\text{Creditors Turnover Ratio}}$$

Significance and Objectives- This ratio indicates the speed with which the payments for credit purchases are made to the creditors. A higher ratio signifies that creditors are being paid promptly, thus enhancing the creditworthiness of the company. However very favourable ratio to this effect also shows that business is not taking full advantage of creditors' facilities which can be allowed by the creditors.

d. **Fixed Assets Turnover Ratio-** This ratio indicates the efficiency with which the firm is utilizing its investments in fixed assets such as plant and machinery, land and building etc. It shows the extent to which investments in fixed assets contributes towards sales.

Formula-

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Net Fixed Assets}}$$

Net fixed assets means depreciated value of fixed assets.

Significance and Objectives- In general a high ratio indicates efficient utilization of fixed assets in generating sales and a low ratio may signify that the firm has an excessive investment in fixed assets.

e. Working Capital Turnover Ratio- Working Capital of a concern is directly related to sales. It is the difference of current assets and current liabilities.

Formula-

$$\text{Working Capital Turnover Ratio} = \frac{\text{Sales}}{\text{Average Working Capital}}$$

Significance and Objectives- This ratio indicates the number of times the working capital is turned over in the course of a year. This ratio measures the efficiency with which the working capital is being used by a firm. A higher ratio indicates efficient utilization of working capital and a low ratio indicates otherwise. But every high working capital turnover ratio is not a good situation for any firm. Hence care must be taken while interpreting the ratio.

f. Capital Turnover Ratio- This ratio shows the relationship between cost of sales and the total capital employed.

Formula-

$$\text{Capital Turnover Ratio} = \frac{\text{Sales}}{\text{Total Capital Employed}}$$

Total Capital employed = Equity Capital+ Pref. Capital+ Reserves+ Debentures+ Long- term Loans- Fictitious Assets- Non-operating investments

Fictitious assets include preliminary expenses, discount on issue of shares, debit balance of Profit and Loss Account, etc.

Significance and Objectives- This ratio shows the efficiency with which capital employed in a business is used. A high capital turnover ratio indicates the possibility of greater profit and a low capital turnover ratio is a sign of insufficient sales and possibility of lower profits.

Check your Progress A

Q.1. What is Quick Ratio?

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Q.2. Write the formula for computing capital employed?

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Q.3. Calculate Working Capital Turnover Ratio, if Current assets are ☐ 30,000, Current liabilities are ☐ 20,000 and sales are ☐ 50,000.

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13.4.3 SOLVENCY RATIOS

They are also known as Capital Structure ratios, Gearing ratios, Leverage ratios. The term 'solvency' refers to the ability of the concern to meet its long-term obligations. The long-term creditors of a firm like debenture holders, financial institutions etc. are mostly interested in knowing the firm's ability to pay regular interest on long-term borrowings, repayment of the principal amount at the maturity and the security of their loans. Accordingly, long–term solvency ratios indicate a firm's ability to meet the fixed interest and costs and repayment schedules associated with its long-term borrowings.

a. Debt-Equity Ratio- This ratio measures the relative claims of long-term creditors on the one hand and owners on the other hand, on the assets of the company.

Formula-

$$\text{Debt Equity Ratio} = \frac{\text{Long term debts}}{\text{Shareholders Funds}}$$

Long-term debts include debentures, long-term loans from financial institutions etc.

Shareholders' funds include Share Capital (both Equity and Preference), Securities Premium, General Reserve, Capital Reserve, and Other Reserves and Credit bal. of Profit & Loss Account. Past accumulated losses, preliminary expenses should be deducted while computing shareholders funds.

Significance and Objectives- This ratio indicates the proportion of owner's stake in the business. Excessive liabilities tend to cause insolvency. The ratio indicates the extent to which the firm depends on outsiders for its existence and also provide margin of safety to the creditors. Generally a debt-equity ratio of 1:1 is accepted. A low ratio implies a greater claim of owners on the assets of the company than the creditors. While a high debt equity ratio indicates that the claims of the creditors are greater than those of the owners.

b. Proprietary Ratio- It is also known as Equity Ratio or Net Worth to Total Assets ratio. It is an important ratio for determining long-term solvency of a firm and it establishes the relationship between Shareholders funds to total assets (tangible) of the firm.

Formula-

$$\text{Proprietary Ratio} = \frac{\text{Shareholders Funds}}{\text{Total Assets}}$$

Significance and Objectives- It focuses the attention on the general financial strength of the business enterprise. The ratio is of particular importance to the creditors who can find out the proportion of shareholders funds in the total assets employed in the business. A high proprietary ratio indicates greater long-term stability of the company and consequently greater protection to the creditors. However a very high ratio is not always better because if funds of outsiders are not used for long-term financing, a firm may not be able to take advantage of Trading on Equity.

c. **Interest Coverage Ratio-** This ratio is also known as Debt Service Ratio or Fixed Charges Cover. It indicates whether the business earns sufficient profit to pay the interest charges periodically.

Formula-

$$\text{Interest Coverage Ratio} = \frac{\text{EBIT}}{\text{Fixed Interest Charges}}$$

Fixed interest charges means interest on debentures and long-term loans.

Significance and Objectives- This ratio is very important from lender's point of view because it indicates the ability of a company to pay interest out of its profits. Also it shows the extent to which the profits of the company may decrease without affecting its ability to meet its interest obligations. The standard for this ratio is that interest charges should be covered six to seven times.

d. **Capital Gearing Ratio-** This is the ratio between the fixed interest bearing securities and equity share capital. Fixed income securities include debentures and preference share capital.

Formula-

$$\text{Capital Gearing Ratio} = \frac{\text{Fixed Income Securities}}{\text{Equity Shareholders' fund}}$$

Significance and Objectives- The gearing ratio is useful in indicating the extra benefits accruing to the Equity shareholders. As a company earns a certain rate of return on total capital employed but is required to pay to the preference shareholders and debenture holders only at a fixed rate. The surplus earned on their funds can be utilized for paying dividend to the Equity shareholders at a rate higher than the rate of return on the total capital employed in the company. Such a situation is called 'Trading on Equity'.

Thus a company is highly geared if this ratio is more than one. If it is less than one, it is low geared. If the ratio is exactly one, it is evenly geared. A highly geared company has the advantage of Trading on Equity.

13.4.4 PROFITABILITY RATIOS

Every business should earn sufficient profits to survive and grow over a long period of time. In the words of Lord Keynes, "Profit is the engine that drives the business enterprise." Infact, efficiency of a business is measured in terms of profits and profitability ratios serve this purpose.

Profitability of a business may be measured in two ways-

A. Profitability in relation to sales

B. Profitability in relation to investment

Profitability in relation to sales indicates the amount of profit per rupee of sales. Similarly, profitability in relation to investment indicates the amount of profit per rupee invested in assets. If a company is not able to earn a satisfactory return on investment, it will not be able to pay a reasonable return to its investors and the survival of the company may be threatened.

A. Profitability Ratios Based on Sales-

- **a)** Gross Profit Ratio
- **b)** Net Profit Ratio
- **c)** Operating Ratio

a) Gross Profit Ratio- This ratio expresses the relationship between gross profit and sales and is usually represented as percentage.

Formula-

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$$

Net Sales means sales minus sales returns. Gross profit is sales minus cost of goods sold.

Significance and Objectives- This ratio indicates the average margin on the goods sold. It shows whether the selling prices are adequate or not. It also shows the extent to which selling prices may be reduced without resulting in losses. A low gross profit ratio may indicate a higher cost of goods sold due to higher cost of production. It may also be due to low selling prices. While on the other hand a high gross profit ratio indicates relatively lower cost and is a sign of good management.

A gross profit ratio may be increased by taking following steps:

- Increasing selling prices, the cost of goods remaining constant.
- Lowering cost of goods sold, selling prices remaining constant.
- Increasing the sale of those goods which have a higher gross margin.

b) Net Profit Ratio- This ratio has two variations :

1. Net Operating Profit Ratio- Net operating profit is the gross profit minus all operating expenses. Operating expenses include Administrative expenses, like director's fees, legal expenses, rent, office salaries, insurance etc. Also it consist of Selling and Distribution expenses, like travelling expenses, advertising, salaries and commission of salesmen etc.

Formula-

$$\text{Net Operating Profit Ratio} = \frac{\text{Net Operating Profit}}{\text{Net Sales}} \times 100$$

Net Operating Profit = Gross Profit- Adm. And Selling Expenses

2. **Net Profit Ratio-** This is the ratio of net profit to net sales.

Formula-

$$\text{Net Profit Ratio} = \frac{\text{Net Profit}}{\text{Net Sales}} \times 100$$

The concept of net profit is different from net operating profit. In calculating the net profit, all Non-operating expenses and losses (e.g. loss on sale of assets, provision for legal damages etc.) are also deducted and all Non-operating incomes (e.g. dividend income, interest received on investments etc.) are added. Thus,

Net Profit = Net Operating Profit + Non-operating Incomes – Non- operating Expenses

OR, Net Profit = Gross Profit – All expenses + All other incomes

Significance and Objectives- It determines the efficiency with which affairs of the business are being managed. An increase in the ratio over the previous period indicates improvement in the operational efficiency of the business provided the gross profit is constant.

c) Operating Ratio- This ratio explains the relationship between cost of goods sold and operating expenses to net sales.

Formula-

$$\text{Operating Ratio} = \frac{\text{Cost fo goods sold} + \text{Operating expenses}}{\text{Net Sales}} \times 100$$

Cost of goods sold = Opening Stock + Purchases + Carriage Inward + Wages – Closing Stock

Significance and Objectives- It is the test of operational efficiency with which the business is being carried out. It shows the percentage of net sales that is absorbed by cost of goods sold and operating expenses. A high operating ratio is considered unfavourable because it leaves a smaller margin of profit to meet non-operating expenses. While, a low operating ratio is considered a good sign as it enable to leave a portion of sales to give a fair return to the investors.

B. Profitability Ratios Based on Investments-

a) Return on Investments (ROI)

b) Return on Equity (ROE)

a) **Return on Investments (ROI)-** It is also known as Return on Capital Employed (ROCE). It measures the overall profitability of a business. It is ascertained by comparing profit earned and capital employed to earn it. The ratio is expressed in percentage.

Formula-

$$\text{ROI} = \frac{\text{Profit before interest and taxes}}{\text{Capital employed}} \times 100$$

Capital Employed = Equity and Preference Share Capital + Reserves and Surplus + Long-term loans – Fictitious Assets (e.g. Preliminary expenses) – Non-operating Assets (e.g. Investments)

OR , Capital Employed = Fixed assets less depreciation + Net Working Capital (Current Assets- Current Liabilities)

Significance and Objectives- ROI is the only ratio which deals with the overall performance of a business from the point of view of profitability. It indicates how well the management has utilised the funds supplied by the owners and creditors. Also it measures the profit which a firm earns on investing a unit of capital i.e. 'Yield on Capital'. The higher the ROI, the more efficient management is considered to be in using the funds available. In fact, this ratio can also be used in judging the performance efficiency of different firms in different industries.

Business can survive only when the ROI is more than the cost of capital employed in the business.

b) **Return On Equity (ROE)-** This ratio establishes the relationship between the net profit available to equity shareholder and the amount of capital invested by them.

Formula-

$$\text{Return On Equity} = \frac{\text{Net profit after interest, taxes and preference dividend}}{\text{Equity Shareholders funds}} \times 100$$

Significance and Objectives- This ratio shows the profit percentage for equity shareholders. A high rate of return on equity shareholders funds is favoured by investors and a higher market valuation is placed on such shares. This ratio is used for inter-firm comparison to judge the comparative profitability of different firms.

Some other Profitability Ratios are as under-

$$\text{Earning Per Share} = \frac{\text{Net profit after taxes} - \text{Preference Dividend}}{\text{No. of Equity Shares}}$$

$$\text{Dividend Payout Ratio} = \frac{\text{Dividend Per Share}}{\text{Earning Per Shares}}$$

$$\text{Dividend Yield Ratio} = \frac{\text{Dividend Per Equity Share}}{\text{Market Price Per Equity Share}}$$

$$\text{Price Earning Ratio} = \frac{\text{Market Price Per Equity Share}}{\text{Earning Per Share}}$$

Check your Progress B

Q.1. What is Proprietary Ratio?

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Q.2. How will you calculate net operating profit?

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Q.3. What is ROI?

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13.5 ADVANTAGES OF RATIO ANALYSIS

Ratio analysis is one of the most important tools of financial analysis. It offers the following advantages-

1. **Useful in analysis of financial statements-** Ratio analysis is the most important tool available for analysing the financial statements i.e. Profit and Loss Account and Balance Sheet. Such analysis is made not only by the management but also by outside parties like bankers, creditors, investors etc.
2. **Useful in improving future performance-** Ratio analysis indicates the weak spots of the business. This helps management in overcoming such weaknesses and improving the overall performance of the business in future.
3. **Useful in inter-firm comparison-** Comparison of the performance of one firm with another can be made only when absolute data is converted into comparable ratios.
4. **Useful in judging the efficiency of a business-** As stated earlier, accounting ratio help in judging the efficiency of a business. Liquidity, solvency, profitability etc. of a business can be easily evaluated with the help of various accounting ratios.

5. **Useful in simplifying accounting figures**- Complex accounting data presented in Profit and Loss Account and Balance Sheet is simplified, summarized and systematized with the help of ratio analysis so as to make it easily understandable.

13.6 LIMITATIONS OF RATIO ANALYSIS

The following limitations should be kept in mind while making use of ratio analysis in interpreting the financial statements-

1. **Reliability of ratio depends upon the correctness of the basic data-** Ratio obviously will be only as reliable as the basic data on which they are based. If the balance sheet or profit and loss account figures are themselves unreliable, it will be a mistake to put any reliance on the ratios worked out on the basis of that Balance Sheet or Profit and Loss Account.
2. **Ratios are not always comparable-** When the ratio of two firms are being compared, it should be remembered that different firms may follow different accounting practices. Such differences will not make some of the accounting ratio strictly comparable.
3. **Ratios ignore qualitative factors-** Ratio are as a matter of fact, tools of quantitative analysis. It ignore qualitative factors which sometimes are equally or rather more important than the quantitative factors. As a result of this, conclusions from ratio analysis may be distorted.
4. **Change in price levels makes ratio analysis ineffective-** Changes in price levels often make comparison of figures for a number of years difficult.
5. **Ratios based on past financial statements are no indicators of future-** Accounting ratios are calculated on the basis of financial statements of past years. Ratios thus indicate what has happened in the past. Since past is quite different from what is likely to happen in future, it is difficult to use ratios for forecasting purposes.

Numerical-

	□
Cash	1,60,000
Sundry debtors	4,00,000
Temporary Investment	3,20,000
Stock	21,60,000
Prepaid expenses	12,000
Total current assets	30,52,000
Total assets	64,00,000
Current liabilities	8,00,000
10% Debentures	16,00,000
Equity share capital	20,00,000
Retained earnings	8,12,000

Statement of Profit for the year ended 31st March 2012

		☐
Sales		40,00,000
Less: Cost of goods sold	28,00,000	
Interest	1,60,000	29,60,000
Net profit		10,40,000
Less: Taxes @ 50%		5,20,000
		5,20,000

Dividend declared on equity shares ☐ 2,20,000

From the above figures, appraise the financial position of the company from the points of view of (i) Liquidity, (ii) Solvency, (iii) Profitability and (iv) Activity.

Solution-

(i) Liquidity Ratios

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$= \frac{30{,}52{,}000}{8{,}00{,}000} = 3.82 : 1$$

$$\text{Acid Test Ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}}$$

$$= \frac{8{,}80{,}000}{8{,}00{,}000} = 1.1 : 1$$

(ii) Solvency Ratios

$$\text{Debt Equity Ratio} = \frac{\text{Long term Debt}}{\text{Shareholders funds}}$$

$$= \frac{16{,}00{,}000}{28{,}12{,}000} = 0.57 : 1$$

$$\text{Interest Coverage Ratio} = \frac{\text{PBIT}}{\text{Interest Charges}}$$

$$= \frac{12{,}00{,}000}{1{,}60{,}000} = 7.5 \text{ times}$$

(iii) Profitability Ratios

$$\text{Net Profit Ratio} = \frac{\text{Net Profit after tax}}{\text{Sales}} \times 100$$

$$= \frac{5{,}20{,}000}{40{,}00{,}000} \times 100 = 13\%$$

$$\text{Return on Capital employed} = \frac{\text{PBIT}}{\text{Capital employed}} \times 100$$

$$= \frac{12,00,000}{44,12,000} \times 100 = 27.2\%$$

(iv) Activity Ratios

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{Average Stock}}$$

$$= \frac{28,00,000}{20,00,000} = 1.4 \text{ times}$$

$$\text{Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Total Assets}}$$

$$= \frac{40,00,000}{64,00,000} = 0.625 \text{ times}$$

13.7. SUMMARY

When relationship between two figures are expressed mathematically then it is known as a ratio. Ratio analysis helps in judging financial performance of a business. Financial ratios can be classified into liquidity, turnover, solvency and profitability ratios. Current ratio and quick ratio is included under the category of liquidity ratio which measures the ability of a firm to meet its current liabilities. This category includes stock turnover ratio, debtors turnover ratio, creditors turnover ratio, fixed assets turnover ratio, working capital turnover ratio and capital turnover ratio. The third category is solvency ratios which measure the ability of the concern to meet its long-term obligations. It mainly includes debt equity ratio, proprietary ratio, interest coverage ratio and capital gearing ratio. The last category, i.e. profitability ratios measures the efficiency of a business in term of profit. Profitability ratio can be computed on the basis of sales or on investment. Although ratio analysis is an important tool of financial analysis but it suffers from many limitations also such as ignoring qualitative factors, difficulty in comparison, dependence upon past data, etc.

13.8 Keywords:	
Current Assets -	Assets convertible into cash within a year.
Current Liabilities -	Obligations maturing within a year.
Working Capital -	Difference between current assets and current liabilities.
Solvency -	Ability of the concern to meet its long term obligations.
Shareholder’s Funds -	Share Capital + Securities Premium + All reserves + Credit balance of Profit and Loss

	Account – Preliminary expenses.
Capital gearing ratio -	Ratio between fixed interest bearing securities and equity share capital
Net operating profit -	Gross Profit – All operating expenses.

13.9 Answers to check your Progress:	
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1.	It is the ratio of quick assets to quick liabilities: Quick assets include all current assets excluding stock and prepaid expenses while quick liabilities refer to all current liabilities except bank overdraft.
2.	Capital employed = Equity Capital + Preference Capital + Reserves + Debentures + Long term Loans – Fictitious assets – Non-operating investments.
3.	Working Capital turnover ratio = $\frac{\text{Sales}}{\text{Average working capital}}$ $= \frac{50,000}{30,000 - 20,000} = 5$ times.
'B'	
1.	It is the ratio of shareholders fund to total assets of the firm.
2.	Net operating Profit = Gross Profit – All operating expenses
3.	Return on investment or ROI is the ratio of profit before interest and taxes to capital employed.

13.10 TERMINAL QUESTIONS

Question 1. What is meant by ratio analysis? Discuss its advantages and limitations.

Question 2. What are the important profitability ratios? How are they worked out? Explain and illustrate.

Question 3. Discuss the usefulness of the following financial ratio:-

(a) Current Ratio, (b) Sales to Fixed Assets, (c) profit to sales,

(d) Net worth to Fixed Assets.

Question 4. Examine the relationship between solvency, liquidity and profitability?

Question 5. From the information given below, calculate the following ratios;

(i) Quick Ratio (ii) Stock Turnover Ratio

(iii) Debt-Equity Ratio (iv) Return on Investment

Information: Current Assets ☐ 5,00,000, Opening Stock ☐ 50,000, Closing Stock ☐ 1,50,000, Cost of Goods sold ☐ 12,00,000, Gross Profit ☐ 2,00,000, Indirect expenses ☐ 20,000, Equity Share Capital ☐ 7,00,000, 10% Preference Share Capital ☐ 3,00,000, 12% Debentures ☐ 2,00,000, Current Liabilities ☐ 2,00,000, General Reserve ☐ 1,00,000.

[Ans- (i) Quick Ratio=1.75 : 1, (ii) Stock Turnover Ratio=12 times, (iii) Debt-Equity Ratio=2 : 11, (iv) Return on Investment=15.69%]

13.11. SUGGESTED READINGS

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UNIT-14 LEVERAGE ANALYSIS

Structure

14.1 INTRODUCTION

It is the duty of finance manager in every firm to estimate the requirement of funds and procure them at economic cost. There are various alternative sources to raise the funds. The finance manager has to determine the best mix of such funds or decide about the capital structure of the concern because it influences the risk and return of the firm. **Leverage analysis is the technique used by the business firms to quantify the risk return relationship of different alternative capital structure.**

14.2 OBJECTIVES

After studying this unit, you shall be able to understand:

- Concept of leverage.
- Types of leverage.
- Computation and utility of different types of leverage.

14.3 MEANING OF LEVERAGE

'Lever' is an inducing or compelling force and 'Leverage' is the action of a lever or the mechanical advantage gained by it. In the area of finance the term leverage is used to describe the firm's ability to use fixed cost assets to magnify the returns to owners. The use of 'debt' capital in financing the total assets is considered as lever. The use of excess debt capital or high fixed costs creates risk and thus to calculate the extent of such risk concept of Leverage is being used.

Definitions of Leverage-

According to **Solomon Ezra,** "Leverage is the ratio of the rate of return on shareholder's equity and the rate of return in total capitalization."

According to **Prof. S.C. Kuchchal**, "Leverage may be defined as meeting a fixed cost or paying a fixed return for employing resources or funds."

Concept of Leverage-

The term leverage, in general, refers to the relationship between two interrelated variables. In financial matters, one financial variable influences another variable. These variables may be cost sales, earnings before interest and tax (EBIT), earnings per share, output. In leverage analysis, the emphasis is on the measurement of the relationship of the two variables, rather than on measuring the variables.

$$\text{Leverage} = \frac{\text{\% Change in dependent variable}}{\text{\% Change in independent variable}}$$

14.4 TYPES OF LEVERAGE

Leverage is of three types-

1) Operating Leverage

2) Financial Leverage

3) Combined Leverage

14.4.1 OPERATING LEVERAGE

It is based on the theory of cost volume profit analysis. Operating leverage may be defined in terms of the ability of the concern to use fixed costs for increasing the effect of changes in sales volume on operating profit i.e. profit before interest and tax **Solomon Ezra** is of the opinion, "Operating leverage is the tendency of the operating profit to vary dis-proportionately with sales."

A firm is said to have higher degree of operating leverage if it employs a higher proportion of fixed costs and smaller proportion of variable costs in the cost structure and vice-versa. **Thus, the degree of operating leverage depends upon the proportion of fixed element in the cost structure.**

A. **Factors that influence Operating Leverage:-** Operating leverage is a function of three factors in any firm-

- The amount of fixed costs.

- The contribution margin.
- The volume of sales.

There will be no operating leverage, if there are no fixed costs and also if the ratio of fixed costs to total costs is nil. To such a firm, a given percentage of increase in sales produces the same percentage of operating profits, i.e. EBIT.

B. Degree of Operating Leverage:- The degree of operating leverage may be defined as the percentage change in operating profit, resulting from a percentage change in sales. It is calculated at a particular level of sales.

$$\text{Operating Leverage} = \frac{\text{Contribution}}{\text{EB IT}}$$

Where, Contribution= Sales - Variable Cost.

EB IT = Contribution - Fixed Cost

$$DOL = \frac{\%Change\ in\ EBIT}{\%Change\ in\ Sales}$$

$$Or, \quad = \frac{\Delta\text{EBIT}/\text{EBIT}}{\Delta Sales/Sales}$$

Where, Δ (called delta) is change.

Operating Profit & EBIT means the same.

C. Utility of Operating Leverage:- The operating leverage indicates the impact of change in sales on operating income.

D. Favourable and Unfavourable Leverage:- In case, contribution exceeds the fixed costs, there is favourable operating leverage. In reverse situation when fixed cost exceeds contribution, the operating leverage is termed as unfavourable leverage.

E. High Degree of Operating Leverage:- If a firm has a high degree of operating leverage, the percentage change in operating income will be more than the percentage change in sales. As operating income (EBIT) is affected, increase or decrease also results in net income. Similarly, when the sales of a firm fall, a smaller percentage of fall in sales results in a large percentage of fall in operating income.

F. Operating Leverage is a Double Edged Sword:- Operating profit of a highly leverage firm would increase at a faster rate for any given increase in sales. However, if sales fall, the firm with a higher operating leverage would suffer more loss than the firm with no or low operating leverage. This is a very risky situation.

Effects of Operating Leverage-

Operating leverage affects the business risk which may be viewed as the uncertainty inherent in the estimates of future operating income. A company using high technology and high fixed costs but low variable costs would have high degree of operating leverage its break-even point will relatively be higher and thus change in the sales level might have a magnified i.e. leveraged effect on profits. Thus, higher the degree of operating leverage, the greater will be the fluctuations in profits as response to change in sales/output volume.

Besides this, the degree of operating leverage has implications for a variety of business and financial policy decisions, such as.

i. High degree of operating leverage may suggest that the volume may be increased to gain a steep rise in profits.

ii. High degree of operating leverage may also suggest that profits will swing widely as volume fluctuates.

14.4.2 FINANCIAL LEVERAGE

Financing is a crucial matter in every business and there should be a proper mix of debt and equity capital. The use of long term interest/fixed dividend bearing securities such as debt and preference share capital along with equity share capital is called 'Financial Leverage'. In other words, when the rate of return available to equity shareholders is caused to rise by the use of debt and preference share capital, it is termed as financial leverage. Financial leverage is tested with reference to EBIT (Earnings before Interest and Tax) and EPS (Earnings Per Share) and therefore, sometimes it is called as EBIT-EPS analysis.

According to **Hampton,** "Financial leverage exists whenever a firm has debts or other sources of funds that carry fixed charges".

$$\text{Financial Leverage} = \frac{\text{EBIT}}{\text{EBT}}$$

Degree of Financial Leverage:-

Gitman has rather explained the financial leverage as the ability to magnify the EPS by changing EBIT. From this viewpoint, the degree of financial leverage may be obtained by-

$$\text{DFL} = \frac{\text{\% Change in EPS}}{\text{\% Change in EBIT}}$$

(A) Utility of Financial Leverage:- Financial leverage helps considerably the finance manager in designing the capital structure of the firm. Financial leverage shows the impact of operating income on taxable income.

(B) Favourable and Unfavourable Leverage:- The financial leverage is said to be favourable or positive, when the firm earns so much EBIT on assets acquired through the use of funds from sources which are more than the fixed cost of these sources. When EBIT from the use of funds from various sources is less than the fixed cost of these sources, it is a case of unfavourable or negative financial leverage.

(C) Relationship between Financial Leverage and Financial Risk:- For a given degree of variability of EBIT, the variability of EPS increases with more financial leverage. The variability of EPS by the financial leverage is called financial risk. The financial risks of two firms differ when the assets are financed, differently. Financial risk arises when the assets are financed by debt and they can be avoided if the firm decides to finance the assets, totally, with equity.

(D) Trading on Equity:- The process of increasing the shareholder's earnings through the usage of debt is called Trading on Equity, Financial Gearing and also Financial Leverage. It is derived from the fact that the owner's equity is used as a basis to raise debt. The objective is to give a high rate of return to the equity shareholders, above the general rate of earning on capital employed, in the company to compensate them for the risk they bear. But the term 'Trading on Equity' is used for the financial leverage only when the financial leverage is favourable because trading on equity is always positive.

(E) Financial leverage is a double-edged sword:- The finance manager has to bear in mind both return and risk, while finalizing the mix for raising funds. When the economic conditions are good and EBIT is increasing, EPS would grow faster with the increased debt in the capital structure. However, when economic conditions turn unfavourable and EBIT starts falling , the pace of EPS fall would be greater than the falling rate of EBIT. Thus, it is a double edged sword and finance manager has to remember its double edged impact and design the capital structure suitably. Favourable and unfavourable impact to equity shareholders can be presented in the following way-

ROI > Cost of Debt ↑ ROE & EPS
ROI < Cost of Debt ↓ ROE & EPS

Effects of Financial Leverage-

TESLA-016

The effect of financial leverage is measured through returns on equity or through 'earnings per share'. However, it may be noted that the effects of financial leverage are not always clear and identical in various states of profitability and debts proportion in capital structure. Moreover, the following points should be remembered-

i) Financial leverage in general is favourable when the return on assets exceeds the cost of debt capital.

ii) At zero debt-level, the after-tax return on total assets is likely to be equal to the after-tax return on equity.

iii) When the return on assets is high both net return on equity and earnings per share increases with a risk in debt ratio.

iv) The amount of interest affects the relationship of after-tax return on assets and the return on equity at different levels of leverages.

v) While higher amounts of leverage improve equity returns and EPS, they produce a higher degree of volatility also in such returns.

vi) Financial leverage magnifies the volatility of returns whether measured by net income or return on equity or earnings per share.

Relationship between Operating Leverage and Financial Leverage-

Operating Leverage and Financial Leverage are interrelated EBIT is dependent on sales. In turns, EPS is dependent on EBIT. **An ideal combination in a firm is to have low operating leverage and high financial leverage provided opportunities are available to utilize borrowed funds, profitably.** Lower operating leverage indicates low fixed costs and in consequence break-even point would be low and margin of safety would be high. High financial leverage gives the benefit of a higher percentage of EPS for a given change in EBIT.

Difference between Operating Leverage and Financial Leverage-

Operating leverage is concerned with the change of operating income with change in sales while financial leverage is concerned with change in earning per share with the change in operating income. High degree of operating leverage indicates large business risk and high degree of financial leverage shows large financial risk.

The ideal situation is to have a high financial leverage and low operating leverage provided profitable opportunities exist. The basic objective of both the leverages is to improve the profitability of the firm and earnings per share. Also both the leverage are to remain within the limits.

Check your Progress B

Q.1. What is Trading on Equity?

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Q.2. Differentiate between operating leverage and financial leverage.

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14.4.3 COMBINED LEVERAGE

Operating Leverage affects the business risk and it is measured in terms of changes in EBIT due to changes in sales. Similarly, financial leverage affects financial risk and is measured in terms of percentage change in EBT or EPS relative to percentage change in EBIT. Since both the leverages are closely related in ascertaining the ability of the firm to cover fixed charges, the mixture of the two would give combined or total leverage which will clarify the combined effect of operating and financial leverage. The combined leverage focuses the attention on the entire income of the concern. The formula for calculating combined leverage is-

$$\mathrm{CL} = \mathrm{OL} \times \mathrm{FL}$$

$$\mathrm{CL} = \frac{\mathrm{C}}{\mathrm{EBIT}} \times \frac{\mathrm{EBIT}}{\mathrm{EBT}} \quad ; \mathrm{C} = \text{Contribution}$$

$$\mathrm{CL} = \frac{\mathrm{C}}{\mathrm{EBT}}$$

Degree of Combined Leverage:- The degree of combined leverage can be computed the following formula-

$$DCL = DOL \times DFL$$

$$\mathrm{DCL} = \frac{\%\,\Delta \text{ in EBIT}}{\%\,\Delta \text{ in Sales}} \times \frac{\%\,\Delta \text{ inEBT/EPS}}{\%\,\Delta \text{ in EBIT}}$$

$$\mathrm{DCL} = \frac{\%\,\Delta \text{ in EBT or EPS}}{\%\,\Delta \text{ in Sales}} \quad ; \Delta = \text{Change}$$

Thus, the degree of combined leverage has its utility in explaining the effect of change in sales revenue on earning per share. Its use and utility are more in the case of selecting financial plan for new investments. If the firm is likely to increase business risk by new investment i.e. operating leverage is increased and there is no change in financial policy (i.e. capital structure) then the financial leverage will not change.

As a result, the combined leverage will be pushed up and total risk will also increase. Under such a situation, the firm has to lower down its financial leverage so that total risk is maintained at earlier level. In reverse situation, financial leverage has to be geared up.

Effects of Combined Leverage-

1) If operating leverage is 3 and financial leverage is 4, then combined leverage is 3 × 4 = 12. Thus, the extent of its being favourable or unfavourable will be 12 times. In such a situation, a definite percentage increase in sales will cause a increase 12 times in EBT. But a definite percentage decline in sales will equally cause a fall in EBT 12 times. This signifies that the credit/goodwill of such company will increase in the market in good years because the market value of its equity shares will unexpectedly rise due to maximisation of profit and dividend. On the other hand, the volume of profit may be too poor in bad years to bear with interest burden. As a result its equity shares may be issued only at discount.

2) If both the operating leverage and financial leverage of a company are very low the total risk will be too low which may indicate that the company is very cautious in raising the finances and its applications. However, such company often fails to avail of the good opportunities of making better investments because timely raising the required funds needed for growth, expansion and diversification becomes quite difficult for such company.

3) If operating leverage is high but its financial leverage is low, one's favourable nature to some extent will nullify the unfavourable nature of the other. The best situation will be one when the operating leverage of a company is low and its financial leverage is high because in such a case the company due to margin of safety of the first (operating leverage) may operate the business at high debt equity ratio and will be successful to earn maximum profits.

Numerical-

Calculate Operating, Financial and combined leverage from the following data of X. Ltd. and Y Ltd.-

Particular	**X. Ltd.**	**Y. Ltd.**
Sales	25,00,000	30,00,000
Variable Costs	40% of sales	40% of sales
Fixed Costs	5,50,000	3,50,000
Interest	1,25,000	1,60,000

Solution-

Particular	**X. Ltd.**	**Y. Ltd.**
Sales	25,00,000	30,00,000
Less: Variable Costs	10,00,000	12,00,000
Contribution (C)	15,00,000	18,00,000
Less: Fixed Costs	5,50,000	3,50,000
	9,50,000	14,50,000
EBIT	1,25,000	1,60,000
Less: Interest	8,25,000	12,90,000
EBT		

1) $$\text{Operating Leverage} = \frac{C}{EBIT}$$

$$\text{For X Ltd.} = \frac{15,00,000}{9,50,000} = 1.57 \;\; ; \;\; \text{For Y Ltd.} = \frac{18,00,000}{14,50,000} = 1.24$$

2) $$\text{Financial Leverage} = \frac{EBIT}{EBT}$$

$$\text{For X Ltd.} = \frac{9,50,000}{8,25,000} = 1.15 \;\; ; \;\; \text{For Y Ltd.} = \frac{14,50,000}{12,90,000} = 1.12$$

3) $$\text{Combined Leverage} = \text{Operating Leverage} \times \text{Financial Leverage}$$

$$\text{For X Ltd.} = 1.57 \times 1.15 = 1.81$$

$$\text{For Y Ltd.} = 1.24 \times 1.12 = 1.39$$

14.5 SUMMARY

Leverage is the firm's ability to use fixed cost assets to magnify the returns to owners. It is the ratio of the rate of return on shareholders' equity and the rate of return in total capitalization. Leverage is of three types- Operating, Financial and Combined leverage. Operating leverage indicates the impact of change in sales on operating income. If contribution exceeds fixed costs there is favourable operating leverage. In case of high degree of operating leverage, the percentage change in operating income will be more than the percentage change in sales. The use of fixed cost bearing securities such as debt and preference share capital for enhancing equity shareholders' earning is termed as financial leverage. If EBIT from the use of funds from various sources is more than the fixed cost of these sources then it is known as positive or favourable financial leverage. Combined leverage measures the effect of change in sales revenue on earning per share. Degree of combined leverage is the product of degrees of operating and financial leverage.

14.6 Keywords:	
DOL -	Percentage change in operating profit resulting from a percentage change in sales.
DFL -	Percentage change in EPS resulting from percentage change in EBIT
Trading on Equity -	Process of increasing shareholders' earning through use of debt.
EBIT -	Earnings before interest and tax or operating profit.
EPS -	Earnings per share.

14.7 Answers to check your Progress:	
'A'	
1.	Operating leverage is said to be favourable if contribution exceeds the fixed cost.
2.	$DOL = \frac{\%Change\ in\ EBIT}{\%Change\ in\ Sales}$
'B'	
1.	The process of increasing the shareholders' earnings through the use of debt is called trading on equity.
2.	Operating leverage is concerned with the change of operating income with change in sales while financial leverage is concerned with change in earning per share with the change in operating income.

14.8 TERMINAL QUESTIONS

Question. 1. What is meant by the Leverage? Also mention its types?

Question. 2. Explain the concept of Operating leverage. How will you measure the degree of operating leverage?

Question. 3. What is Financial leverage? Can all types of companies afford to maintain a high financial leverage in their capital structure?

Question. 4. Explain the Combined leverage. Discuss the effects of combined leverage.

Question. 5. Consider the following data of ABC Company-

	(Rs.)
Selling price per unit	60
Variable cost per unit	40
Fixed cost	3,00,000
Interest	1,00,000
Tax Rate	50%
Preference Dividend	50,000

Calculate the 3 leverage if the number of units sold are 1,00,000.

[Ans:- Operating leverage=1.18, Financial leverage=1.13, Combined leverage= 1.33]

14.9 SUGGESTED READINGS

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UNIT-15 BUDGETING AND BUDGETING CONTROL

Structure

15.1 INTRODUCTION

Before undertaking any work, it is essential to make a plan about the work. However, only making a plan is not sufficient, but it is also essential to carry on work in accordance with the plan and also to set that the entire work is being operated in accordance with it. Every business enterprise needs the use of control techniques for surviving in the highly competitive and changing economic world. For this, Budgets are the most important tool of profit planning and control.

15.2 OBJECTIVES

After studying this unit, you shall be able to understand:

- Different types of budget.

- Concept of Budgetary Control.
- Preparation of flexible budget.

15.3 Meaning and Definition of Budget

A budget refers to business plan and policies expressed in monetary or quantitative terms, relating to a definite future period of time.

According to The Chartered Institute of Management Accountants (CIMA), "A budget is a financial and/or quantitative statement prepared prior to a defined period of time, of the policy to be pursued during that period for the purpose of attaining a given objective."

In the words of **Brown and Howard,** "A budget is a pre-determined statement of management policy during a given period which provides a standard for comparison with the results actually achieved."

Features of Budget-

The following are the main features of a budget-

a) A budget is prepared either in monetary terms or in quantitative terms or in both.

b) A budget is primarily a planning device which also serves as a basis for performance evaluation and control.

c) The basic purpose of a budget is to implement the policies framed by the management for attaining the given objectives.

d) A budget is prepared for a definite future period.

Meaning and Definition of Budgeting-

Budgeting refers to the act of preparing budgets. Also we can say that budgeting is basically a technique for formulating various types of budgets.

According to **J. Batty**, "The entire process of preparing the budgets is known as budgeting."

15.4 Budgetary Control

Budgeting Control, like other techniques, is a technique of managerial control through budgets. The function of controlling the various budgets is called 'Budgetary Control.' This control function is exercised by the management by making comparison of the actual performance with the plan (budget) and taking corrective actions to achieve results.

According to CIMA, London, "Budgetary control is the establishment of budgets relating to the responsibilities of executives of a policy and the continuous comparison of the actual with the budgeted results, either to secure by individual action the objective of the policy or to provide a basis for its revision."

15.4.1 FEATURES OF BUDGETARY CONTROL

Following are the main features of budgetary control-

a) Establishing budgets for each function/ department of the organisation.

b) Comparing actual performance with the budgets on a regular basis.

c) Analysing the deviation of actual performance.

d) Taking suitable remedial action, where necessary.

e) Revising the budget in view of changes in conditions.

15.4.2 OBJECTIVES OF BUDGETARY CONTROL

Budgetary control serves many purposes. The main objectives of budgetary control are as under-

a) Budgetary control system aims at systematic planning and making policies. It forces management to think ahead, to anticipate and prepare for the situation.

b) To co-ordinate the activities of different departments. It means that there should be coordination in the budgets of various departments. Eg- production budget should be prepared in coordination with the purchase budget etc.

c) To operate various cost centres and departments with efficiency and economically.

d) To eliminate the wastes and increase the profitability. Also, to anticipate capital expenditures for future.

e) To motivate mangers to perform in line with the company objectives. If individuals have actively participated in the preparation of budgets, it acts as a strong motivating force to achieve the targets.

f) To evaluate the performance of managers and other employees that how well they are performing in meeting the targets already set. In many companies, there is a practice of rewarding employees on the basis of their achieving the budget targets or promotion of a manager may be linked to his budget achievement record.

15.4.3 ESSENTIALS OF BUDGETARY CONTROL SYSTEM

Pre-requisites for the successful implementation of a budgetary control system are as under-

1. **Organisation of Budgetary Control:-** The proper organisation is important for the successful preparation, maintenance and administration of budgets. A budgetary committee is formed which comprises the departmental heads of various departments. All the functional heads are entrusted with the responsibility of ensuring proper implementation of their respective departmental budgets. The Chief Executive is the overall incharge of budgetary system and Budget Officer is the convener of the budget committee who coordinates the budget of different departments.

2. **Creation of Budget Centres:-** A Budget centre is that part of the organisation for which the budget is prepared. A budget centre may be a department, section of a department or any other part of the department. Eg- in the preparation of purchase budget, the purchase manager has to be consulted. Also, the appraisal of performance of different parts of the organisation becomes easy when different centres are established.

3. **Budget Committee:-** In large concerns, the direction and execution of the budget is delegated to a budget committee which reports directly to the top management. The financial controller is appointed as the budget director. He is the incharge of preparing budget manual and accumulates the budget and actual figures for reporting. Each member prepares his own departmental budget(s) which are then considered by the committee for co-ordination. Whereas in small concerns the accountant is made responsible for preparation and implementation of budgets.

4. **Budget Manual:-** A budget manual is a statement of budget policies. It spells out the duties and also the responsibilities of the various executives concerned with the budgets.

   The Contents of a budget manual are-

   i) Description of the budget system and its objectives.

   ii) Responsibilities of operational executives, budget committee and budget director.

   iii) Procedure and forms to be used in budget preparation.

   iv) Method of accounting and account code in use.

   v) Budget calendar, specifying definite dates for the completion of each part of the budget and submission of the reports.

   vi) Procedure to be adopted in operating the system.

   vii) Follow-up procedure.

5. **Budget Period:-** A budget period is a length of time for which a budget is prepared and operated. The budget period depends upon number of factors. It vary between short term and long term and no specific period can be laid down for all budgets. It

may be different for different industries or even different in the same industry or business. A budget is usually prepared for one year. It is then sub-divided into quarters and in turn each quarter is broken down into three separate months. Budgets for capital expenditure are usually prepared on a long term basis.

6. **Budget officer:-** The Chief Executive who is at the top of the organisation, appoints some person as Budget Officer, who is empowered to scrutinise the budgets prepared by different functional heads and to make changes in them if the situation so demands. The actual performance of different departments is communicated to the Budget Officer. He determines the deviations in the budgets and takes necessary steps to rectify the deficiencies, if any.

7. **Determination of Key factor:-** Key factor, also known as limiting factors or governing factor means the factor which limits the size of output, that is it influences all other budgets. The key factor serves as the starting point for the preparation of budgets. Eg- when sales potential is limited, sales is the key factor. Therefore, sales budget should be prepared first. Thus a key factor determines priorities in functional budgets.

15.4.4 REQUISITES FOR A SUCCESSFUL BUDGETARY CONTROL SYSTEM

For making a budgetary control system successful, following requisites are required-

1. **Clarifying objectives:-** The budgets are used to realise objectives of the business. The objectives must be clearly spelt out so that budgets are properly prepared. In the absence of clear goals the budgets will also be of no use i.e. unrealistic.

2. **Proper delegation of authority and responsibility:-** Budget preparation and control is done at every level of management. Even though budgets are finalised at top level but involvement of persons from lower levels of management is essential for their success. This necessitates proper delegation of authority and responsibility.

3. **Continuous budget education:-** The employees should be properly educated about the benefits of budgeting system. They should be educated about their role in the success of this system. Budgetary control may not be taken only as a control device by the employees but it should be used as a tool to improve their efficiency.

4. **Participation by responsible executives:-** Those who are responsible with the performance of the budgets should participate in the process of setting the budget figures. This will ensure proper implementation of budget programmes.

5. **Flexibility:-** Flexibility in budgets is required to make them suitable under different circumstances. Budgets are prepared for the future and future is always uncertain. Even though

budgets are prepared by considering the future possibilities but still some occurrences later on may necessitate certain adjustments. Flexibility will make the budget more appropriate and realistic.

6. **Proper communication system:-** An effective system of communication is required for a successful budgetary control. The flow of information regarding budgets should be quick so that these are implemented. The performance reports of various levels will help top management in budgetary control.
7. **Integration with standard costing system:-** Where standard costing system is also used, it should be completely integrated with the budget programme, in respect of both budget preparation and variance analysis.
8. **Reasonable goals:-** The budget figures should be realistic and represent reasonably attainable goals. The responsible executives should agree that the budget goals are reasonable and attainable.

15.4.5 ADVANTAGES OF BUDGETARY CONTROL

The budgetary control system has the following advantage-

1. **Tool for measuring performance:-** By providing targets to various departments, budgetary control provides a tool for measuring managerial performance. The budgeted targets are compared to actual results and deviations are determined. The performance of each department is reported to the top management.
2. **Maximisation of Profit:-** The Budgetary control aims at maximising of profits of the enterprise. To achieve this goal, a proper planning and coordination of different functions are undertaken. In this way, the resources are also put to the best possible use.
3. **Economy:-** As a result of budgetary control system, there is economy in spending, the finances are put to optimum use. The resources are used economically and the wastages are eliminated.
4. **Co-ordination:-** The working of different departments and sectors is property coordinated. The budgets of various departments have a bearing on one another. The co-ordination of various executives and subordinates is important for achieving budgeted targets.
5. **Consciousness:-** It creates budget consciousness among the employees. By fixing targets for the employees, they are made aware of their responsibility. Everyone knows what he is expected to do beforehand and continues with his task.

6. **Corrective actions:-** The management is able to take corrective measures whenever there is any flaw in the performance. The deviations can be reported regularly so that necessary actions are taken as early as possible. Whereas, in the absence of budgetary control system, deviations can be determined only at the end of financial period.

15.4.6 LIMITATIONS OF BUDGETARY CONTROL

Despite many advantage, the budgetary control have following limitations-

1. **Based on estimates:-** Budgets are based on forecasts and forecasting cannot be an exact science. Thus, absolute accuracy is not possible in budgeting. Thus, while using this system, the fact that budget is based on estimates must be kept in view.
2. **Expensive technique:-** The installation and operation of a budgetary control system is a costly affair as it requires specialised staff and involves other expenditure which small concerns may find difficult to incur. However, it is important to note that the benefits derived from this system should always exceed the cost of its introduction and operation.
3. **Conflict among different department:-** Budgetary control may lead to conflicts among functional departments. As every department tries to get maximum allocation of funds and this raises a conflict among different departments.
4. **Danger of rigidity:-** A budget programme must be dynamic and continuously deal with the changing business conditions. Budget will lose much of their usefulness if they acquire rigidity and are not revised with the changing circumstances.
5. **Depends upon support of top management:-** The top management should be fully enthusiastic for the success of this system and should give full support for it. If any time there is lack of support from top management, then this system will collapse.

15.4.7 DIFFERENCE BETWEEN FORECAST AND BUDGET

i) Forecast is mainly concerned with probable events, but budget is concerned with planned events.

ii) Forecast may be done for longer time, but budget is prepared for shorter periods.

iii) Forecast is only a tentative statement and can be revised, but budget remains unchanged for the budget period.

iv) Forecast results in planning and the planning results in budgeting.

v) Forecast is the base while a budget is the structure built on the base.

vi) Forecast is not used for evaluating the efficiency of performance while a budget is always used for this purpose.

15.5 CLASSIFICATION AND TYPES OF BUDGETS

A. Classification Based on time:-

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

B. Classification Based on Functions:-

1. Operating Budgets
2. Financial Budgets
3. Master Budget

C. Classification Based on Flexibility:-

1. Fixed Budgets
2. Flexible Budget

The above classification of budget is explained as under:

15.5.1 CLASSIFICATION BASED ON TIME

1. **Long-term Budgets:-** Long-term Budgets are prepared to reflect long-term planning of the business. Generally, the long period varies between five to ten years. They are prepared by the top level management. Long-term budgets are prepared for specialised activities like capital expenditure, research and development, long-term finances etc. These budgets are useful for those industries where gestation period is long i.e. machinery, electricity, engineering etc.
2. **Short-term Budgets:-** These budgets are generally for a duration of one or two years and are expressed in monetary terms. The consumer goods industries like sugar, cotton, textile etc usually prepares there types of budgets.
3. **Current Budgets:-** The duration of current budget is generally in months and weeks. These budgets are prepared for the current operations of the business. As per **ICMA, London,** **"**Current budget is a budget which is established for use over a short period of time and is related to current conditions.**"**

15.5.2 Classification Based on Functions

1. **Operating Budgets:-** These budgets relate to the different activities or operations of a firm. The number of such budgets

depends upon the size and nature of business. Following are the commonly prepared functional budgets-

a. Sales Budget

b. Purchase Budget

c. Production Budget

d. Raw materials Budget

e. Labour Budget

The operating budget for a firm may be constructed in terms of programmes or responsibility areas, and hence may consist of -

i. **Programme Budget:-** It consists of expected revenues and costs of various products or projects that are termed as the major programs of the firm. Programme budgets are, thus, useful in locating areas where efforts may be required to reduce costs and increase revenues. Thus, this budget can be prepared for each project line or project showing revenues, costs and the relative profitability of various programmes.

ii. **Responsibility Budget:-** When the operating budget of a firm is constructed in terms of responsibility areas, it is called the responsibility budget. This budget shows the plan in terms of persons responsible for achieving them. It is used by the management as a control device to evaluate the performance of executives who are in-charge of various cost centres, viz, cost/expense centre, profit centre and investment centre.

2. **Financial Budgets:-** Financial budgets are concerned with cash receipts and disbursements, working capital, capital expenditure, financial position and results of business operations. Following are commonly used financial budgets-

a) Cash Budget

b) Capital Expenditure Budget

c) Working Capital Budget

d) Income Statement Budget

e) Budgeted Balance Sheet or Position Statement Budget

Some of the above budgets are discussed as under-

a. **Sales Budget:-** In the budgeting process, sales is a starting point, as sales is the key factor in many cases. **W.W.Bigg** writes, "This is probably most important budget, as it is usually the most difficult of forecast to attain."

b. **Production Budget:-** This budget is based on sales budget, unless production itself is the key factor. It shows the budgeted quantity of output to be produced during a specific period. It has two parts- one showing the output for the period and the other showing production costs.

c. **Materials Budget:-** This budget is prepared in coordination with production budget. Preparation of materials budget is useful and helpful in achieving continuous, uninterrupted production as the non-availability of materials at the right time can affect the production. Material budget consists of two parts- Consumption Budget and Materials purchase Budget.

d. **Labour Budget:-** Labour Budget is also a part of production budget. It is prepared by the personnel department. This budget consists of the following-

- Number of different grades of workers required.
- Rates of wages of workers.
- Labour hours needed for production.
- Labour cost for the period.

e. **Cash Budget:-** Cash Budget is an important budget, which estimates the amount of cash receipts and payments and the balance of cash during a specific budget period. The cash budget is based on forecasts of cash or estimates of cash showing what funds would be available at what times and whether the funds available would meet the requirements. It's objective is to provide for all cash requirements in time and avoid accumulation of excess cash.

f. **Research and Development Budget:-** This budget is prepared to estimate the research and development expenditure to be incurred during specific period. The budget is prepared in two parts, one is for revenue expenditure and another is to estimate the capital expenditure to be incurred.

g. **Capital Expenditure Budget:-** This budget is prepared to estimate the capital expenditure on fixed assets like, buildings, machinery, plant, furniture etc. It is generally a long-term budget. It is prepared for replacement of assets, expansion of production facilities, adoption of new technologies, diversification etc.

h. **Overhead Budget:-** Following budget are included in it-

i. **Production overhead budget:-** It is a budget if indirect costs in the form of indirect wages, indirect material and indirect expenses to be incurred in the factory. It is prepared with the help of production and labour budgets. It is prepared on the basis of past year's figures and future changes expected.

ii. **Administration overhead budget:-** This budget is prepared to estimate the expenditure to be incurred for planning, organising, directing and control functions of the management. The budget is based on the past year's expenditure incurred with expected future changes.

iii. **Selling and Distribution overhead budget:-** This budget is prepared to estimate expenditure to be incurred to sell the product and its distribution. It is based on sales budget. It is generally prepared in consultation with sales manager of each territory.

3. **Master Budget:-** This budget is a summary of various functional budgets. It encompasses the activities of the whole organisation. According to **ICMA London,** "The master budget is the summary budget incorporating its functional budgets." Master budget is prepared to coordinate the activities of various functional departments and also to help as a control device.

Check your Progress

Q.1. What is Budget Centre?

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Q.2. Define Financial Budget.

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Q.3. Differentiate between forecast and budget.

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15.5.3 Classification Based on Flexibility

1. **Fixed Budget:-** The fixed budgets are prepared for a given level of activity, the budget is prepared before the beginning of the financial year. If the financial year starts in January, then the budget will be prepared a month or two earlier i.e., in November or December. The changes in expenditure arising out of the anticipated charges will not be adjusted in the budget. There is a difference of about twelve months in the budgeted and actual figures.

   According to **ICMA, London,** "Fixed budget is a budget which is designed to remain unchanged irrespective of the level of activity actually attained." Fixed budgets are suitable under static conditions. If sales, expenses and costs can be forecasted with greater accuracy then this budget can be advantageously used.

2. **Flexible Budget:-** A flexible budget consists of a series of budgets for different level of activity. It is prepared after taking into consideration unforeseen charges in the conditions of the business. Thus, flexible budgets are useful where level of activity changes from time to time.

   According to **ICMA, London,** "Flexible budget is a budget which, by recognising the difference between fixed, semi-variable and variable costs is designed to change in relation to the level of activity attained.” This budget is more suitable when the forecasting of demand is uncertain and the undertaking operates under conditions of shortage of materials, labour etc."

Steps involved in preparing the flexible budgets-

1. **Classification of Cost:-** The cost is classified according to variability as variable cost, fixed and semi-variable cost.

   (a) Estimation of Variable Cost:- Variable cost comprises of all those costs which vary in direct proportion to the level of activity. Usually, all the direct costs and variable portions of the indirect costs are combinedly called 'Variable Cost.'

   (b) Estimation of Fixed Cost:- All those expenses which remain constant irrespective of the level of activity are fixed costs. They usually include all the fixed portion of the overheads. The total of such expenses has to be estimated.

   (c) Estimation of Semi-Variable Cost:- It remain fixed up to a particular level of capacity and there after it increases if the activity level goes up further. The semi-variable cost should be estimated for the chosen activity levels.

Example:-

Prepare a Flexible Budget at 80% and 100% activity-

1. Production at 50% capacity is 5000 units.
2. Raw material Rs. 80 per unit.
3. Direct Labour Rs. 50 per unit.
4. Direct Expenses Rs. 15 per unit.
5. Factory Expenses Rs. 50,000 of which 50% is fixed.
6. Administration expenses Rs. 60,000 of which 60% is variable.

Solution:-

Flexible Budget

Particular	Output: 8,000 units (80%)		Output: 10,000 units (100%)	
	Per Unit (Rs.)	**Amount (Rs.)**	**Per Unit (Rs.)**	**Amount (Rs.)**
Raw Material (+) Direct Labour (+) Direct Expenses	80 50 15	6,40,000 4,00,000 1,20,000	80 50 15	8,00,000 5,00,000 1,50,000
Prime Cost	**145**	**11,60,000**	**145**	**14,50,000**
(+) Factory Expenses Variable Fixed	 5 3.125	 40,000 25,000	 5 2.5	 50,000 25,000
Works Cost	**153.12**	**12,25,000**	**152.5**	**75,000**
(+) Administrative expenses Variable Fixed	 7.2 3	 57,600 24,000	 7.2 2.40	 72,000 24,000
Total Cost	**163.32**	**13,06,600**	**162.1**	**96,000**

Working Notes:-

1) Fixed Factory Expenses = $\frac{25,000}{8,000}$ = Rs. 3.125 per unit.

2) Variable Factory Expenses = $\frac{25,000}{5,000}$ = Rs. 5 per unit.

   = Rs. 5 × 8000 units.

   = Rs. 40,000.

Note:-

1) Total fixed cost for each level of activity remain unchanged.
2) Per unit fixed cost decreases when level of output increases and vice-versa.
3) Total variable cost increases in proportion to increase in output level.
4) Per unit variable cost remains unchanged at each level of activity.

15.6 ZERO BASE BUDGETING (ZBB)

Before preparing a budget a base is determined from which the budget process begins. Quite often current year's budget is taken as the base or the starting point for preparing next year's budget. This

TESLA-016

approach of preparing budget is called 'Conventional or Incremental Budgeting.'

Zero Base Budgeting is an alternative to conventional budgeting. It was introduced at **Texas Instruments in USA, 1969 by Peter Phyrr** who is known as father of ZBB. It is a managerial tool and gaining acceptance in business community. In this, the budget figures are developed with zero as the base which means budget will be prepared as if it is being prepared for a new company for the first time. The novel part of ZBB is requirement that budgeting process starts at zero with all expenditure completely justified.

Advantages of Zero Base Budgeting-

1) In ZBB, all the activities included in the budget are justified on Cost-Benefit considerations which promote more effective allocation of resources.

2) It facilities identification of inefficient and unnecessary activities and avoid wasteful expenditure.

3) Cost behaviour patterns are more clearly examined.

4) It is an educational process and can promote a management team of talented skillful people who tend to respond to changes in the business environment.

Disadvantages of Zero base Budgeting-

1) ZBB involves high cost of preparing budgets every year.

2) It requires high volume of paper work.

3) There is danger of emphasising short-term gains at the expense of long-term ones.

4) It has a tendency to regard any activity not foreseen and sanctioned in the most recent ZBB as illegitimate.

15.7 SUMMARY

Budget is a statement in monetary or quantitative terms for a definite future period. The process of preparing budget is known as budgeting. Budgets act as a guiding device for planning and control and for taking corrective actions. When actual performance is compared with budget it is termed as budgetary control. Budgetary control not only helps in measuring performance but it also helps in coordination of various departments. Budgets can be classified on different basis. Budgets can be classified as fixed budget and flexible budget on the basis of flexibility. A flexible budget consists of a series of budgets for different level of activity. If it remains unchanged irrespective of the actual level of activity then it is known as fixed budget. When budgets are prepared on the basis of different functions or operations it is termed as operating budget. Budgets concerned with cash receipts and disbursements, working capital, capital expenditure, financial position are called financial budgets. An alternative of conventional budgeting is zero base budgeting. Under this approach, budgets are prepared with zero as its base.

15.8 Keywords:	
Budget -	Future planning statement expressed in monetary or quantitative terms.
Budgeting -	Act or process of preparing budget.
Budgetary Control -	Function of controlling various budgets.
Zero base budgeting -	Budgeting process with zero as its starting point.
Budget manual -	Statement of budget policies.
Master Budget -	Summary of various functional budgets.

15.9 TERMINAL QUESTIONS

Question.1. Compare Budget, Budgeting and Budgetary control?

Question.2. What is 'Budget Period' and 'Budget Manual'?

Question. 3. What do you understand by Budgetary Control? What are the advantages of this system.

Question. 4. What is meant by Zero Base Budgeting? How it is useful to the business.

Question. 5. The budgeted expenses for the production of 10,000 units in a factory are furnished below:-

	Per unit (Rs.)
Materials	70
Labour	25
Variable Overheads	20
Fixed Overheads (1,00,000)	10
Direct Variable Overheads	5
Selling expenses (15% fixed)	13
Distribution expenses (20% fixed)	7
Administrative expenses (Rs 50,000)	5
	155

Prepare a budget for the production of 8,000 units.

[Ans.- Cost per unit Rs 159.58; Total Cost Rs. 12,76,700]

Hint:- Administrative expenses should be taken as fixed.

15.10 SUGGESTED READINGS

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UNIT -16 INVESTMENT APPRAISAL METHODS

Structure

16.1 INTRODUCTION

An efficient allocation of capital is the most important finance function in the modern times. It involves decisions to commit the firm's funds to the long-term assets. The acquisition and improvement of fixed assets require long-term capital and hence investments in such assets are called 'Capital Investments'. An investment may be defined as an expenditure in cash or its equivalent during one or more time periods in anticipation of enjoying a net inflow of cash or earnings in some future time period. Thus for a successful operation of any business it is important that such investments of funds should be made in such a way so as to bring best possible returns.

16.2 OBJECTIVES

After studying this unit, you shall be able to understand:

- Concept of Capital budgeting.
- Methods of Investment Appraisal.
- Acceptance rules for capital expenditure proposals.

16.3 TYPES OF CAPITAL INVESTMENTS

Following are the types of capital expenditures that are incurred in a large business concern:

a) **Ordinary Capital Investment-** They are incurred for normal operation of the business. Eg. expenditures on new plant layout, on replacing old machines by new ones etc.

b) **Capital Investment on Giant Plan-** Such investments are incurred on the new plants and buildings for introducing a new product or increasing the market potentialities of the existing product i.e. for the progress and improvements of the business.

c) **Capital Investment on Research and Development-** Various types of research are conducted covering the various aspects of the business operations and all such researches require some sort of expenditures. Investments on advertisement, publicity, exploration of new markets etc. are included under the development category.

d) **Capital Investment on Housekeeping Projects-** The investments on the projects indirectly related to production and also those required under some legal obligations are included in this category. Eg. welfare projects, health and safety projects, training and education projects.

16.4 MEANING OF CAPITAL BUDGETING

It means designing and carrying out a systematic investment programme that involves the planning of such investments which provide yields over a number of years. Under Capital Budgeting, proposed capital investments and their financing are considered and projects assuring the most profitable use of given resources are undertaken. Thus, capital budgeting is also considered as a managerial decision making process.

Capital Budgeting Process-

A capital budgeting process may involve a number of steps depending upon the size of the concern, nature of projects, their numbers, complexities and diversities, etc. The various steps suggested by Quinin G. David and Gitman L J are as under-

1. **Project Generation-** Capital expenditure proposals may be of two types: (i) proposals expanding the revenues (ii) proposals reducing the costs. Under first category, proposals to add new products and to expand the capacity in existing lines may be included. Under second category, replacement proposals are included. Such proposals are designed to bring savings in cost in existing lines without changing the scale of operations.

2. **Project Evaluation-** This step in the process of capital budgeting involves (i) estimating the costs and benefits in terms of cash flows (ii) selecting an appropriate criteria for judging the desirability of the projects. As regards the estimate of benefits and costs, it is advisable that this task should be assigned to a group of experts who are impartial and have no motive.

3. **Project Selection-** This step is related to the screening and selecting the projects. Though the final approval of the projects may be given by the top management, projects under consideration may be screened at various levels of management. Moreover, top management may delegate the authority to approve certain types of projects.

4. **Project Execution-** When capital expenditures proposals are finally selected, funds are allocated for them. It is the duty of the top management or executive committee to ensure that funds are spent in accordance with the allocation made in the capital budgets.

5. **Follow-up-** Finally, a system of following up the results of completed projects should be established. Such follow-up comparison of actual performance with budgeted data will ensure better forecasting and will also help in sharpening the technique of forecasting.

16.5 INVESTMENT APPRAISAL METHODS

Capital expenditure decisions have great importance in the future development of the concern. Thus, a sound appraisal method should be used to measure and evaluate the economic worth of a capital expenditure project. The most important and commonly used methods for evaluating the capital expenditure proposals are as under-

1. Pay-back Period Method
2. Internal Rate of Return Method
3. Present Value Method
4. Net Present Value Method
5. Accounting Rate of Return Method
6. Terminal Value Method
7. Profitability Index Method

8. Equivalent Annual Cost Method

9. Urgency Method

The above methods are discussed as follows and they are based on the assumption that the minimum rate of return is given, risk and uncertainty are same for all proposals and the financing and dividend decisions are constant.

16.5.1 Pay-back Period Method (P.B)

This is one of the most popular and widely recognised method of evaluating investment proposals. Payback is the number of years required to recover the original cash outlay invested in a project. It shows the relationship between annual savings (cash inflow) and total amount of capital expenditure (investment). It means this method represents the period which is required to get back the original cost of investments by annual savings.

Formula

$$P.B. = \frac{\text{Initial Investment}}{\text{Annual Cash Inflow}}$$

Acceptance Rule- The project would be accepted if its payback period is less than the maximum or standard payback period set by management. As per the ranking, it gives the highest ranking to the project, which has the shortest payback period and lowest ranking to the project with highest payback period.

16.5.2 Internal Rate of Return (I.R.R)

This method measures the rate of return which earnings are expected to yield on investments. This rate of return will be a rate of discount at which the net present value of the project is exactly equal to zero. In other words, it is the rate at which present values of annual savings is just equal to cost of investment.

Formula-

$$I.R.R = L + \frac{A}{(A - B)} (H - L)$$

Where:

L = Lower discount rate at which NPV is positive.

H = Higher discount rate at which NPV is negative.

A = NPV at lower discount rate L.

B = NPV at higher discount rate H.

Acceptance Rule- Accept the project when rate of return is greater than the cost of capital and reject the project when rate of return is less than the cost of capital. Management may accept the project when rate of return is equal to the cost of capital.

16.5.3 Present Value Method (P.V)

This is one of the discounted cash flow method. This method recognises that cash inflows and outflows at different time periods differ in value and can be compared only when they are expressed in terms of common denominator, that is they are converted to present values. The following steps are involved in this method-

- Determination of Cash Outflows and Cash Inflows for different periods.
- Determination of discounting rate i.e. cut-off rate.
- With the help of discounting rate, P.V. of cash inflows at different periods may be calculated. Present value factor (P.V.F.) is taken from the annuity tables.
- P.V. of all cash inflows for different periods are added together.

Formula-

P.V. = Cash inflow × P.V.F

Acceptance Rule- The present value of total cash inflows should be compared with present value of cash outflows. If the present value of cash inflows are greater than or equal to the present value of cash outflows, the project would be accepted. If it is less, then the proposal will be rejected.

16.5.4 Net Present Value Method (N.P.V)

This is the best method of evaluating the investment proposals and is just a variation of Present Value Method. Under this method, all cash inflows and outflows are discounted at a given rate and their present values are ascertained. It may be noted that if all cash outflows are made in the initial years, their present values will be equal to initial investment outlay. Present value of cash outflows are then deducted from the present values of cash inflows.

Formula-

$$NPV = \left[\frac{R_1}{(1+i)^1} + \frac{R_2}{(1+i)^2} + \frac{R_3}{(1+i)^3} + \ldots \right] - \text{Initial Investment}$$

Where,

i is the target rate of return per period;

R_1 is the net cash inflow during the first period;

R_2 is the net cash inflow during the second period;

R_3 is the net cash inflow during the third period, and so on ...

Acceptance Rule- If N.P.V is positive or zero the project is accepted and if NPV is negative the project is rejected. The N.P.V method can be used to select between mutually exclusive projects, the one with the higher N.P.V should be selected. Using this method, projects would be ranked in order of net present values, that is first rank will be given to the project with highest positive net present value.

16.5.5 Accounting Rate of Return Method (A.R.R)

It is also known as Return on Investment and uses accounting information as revealed by financial statements to measure the profitability of an investment. The accounting rate of return is the ratio of the average after tax profit divided by the average investments. Also it may be calculated by the following formula-

Formula-

$$\text{A.R.R.} = \frac{\text{Average Income}}{\text{Average Investment}}$$

Or,

$$\text{A.R.R.} = \frac{(\text{OS} - \frac{\text{NI}}{\text{n}})}{\text{NI}/2} \times 100$$

Here, OS i.e. Operating Savings is taken to be the average earnings. It means total earnings before depreciation for whole period of economic life is divided by the number of years of economic life. The amount of depreciation as represented by NI/n is deducted from operating savings to provide for depreciation in entire period of economic life of the asset.

Acceptance Rule- All those projects whose A.R.R is higher than the minimum rate established by the management will be accepted and those whose A.R.R is less than the minimum rate will be rejected. This method will rank the project as number one if it has highest A.R.R and lowest rank will be assigned to the project with the lowest A.R.R.

16.5.6 TERMINAL VALUE METHOD (T.V)

This method is based on the assumption that operating savings (cash inflows) of each year is reinvested in another outlet at a certain rate of return from the moment of its receipt till the end of the economic life of the project. The compounded values of cash inflows should be determined on the basis of compounding factor which may be obtained from compound interest table or by the following formula-

Formula-

$$A = P(1 + i)^{n}$$

Acceptance Rule- The present values of compounded cash inflows should be compared with present values of cash outflows. If present values of compounded cash inflows are higher than present values of cash outflows the project should be accepted, otherwise it should be rejected. If both are equal the management will be indifferent. Also if net terminal value is positive the project should be accepted.

16.5.7 Profitability Index Method (P.I.) - This method is also based on time adjusted technique and is also known as Benefit Cost Ratio method. Profitability Index is the ratio of the present value of cash inflows, at the required rate of return, to the initial cash outflow of the investment. This ratio B/C is either expressed in per rupee or in percentage. Also this ratio may be between P.V of cash inflows and P.V of cash outflows or it may be between Excess Present Values (E.P.V) and cost. Since it is a ratio, therefore, it happens to be a relative measure and may be used in evaluating the proposals requiring different initial investment.

Formula-

Based on Total Present Values:

$$\text{P.I(in rupees)} = \frac{\text{P.V.of Cash Inflows}}{\text{P.V. of Cash Outflows}}$$

$$\text{P.I(in \%)} = \frac{\text{P.V. of Cash Inflows}}{\text{P.V.of Cash Outflows}} \times 100$$

Based on E.P.V:

$$\text{P.I(in rupees)} = \frac{\text{E.P.V.}}{\text{P.V. of Cash Outflows}}$$

$$\text{P.I(in \%)} = \frac{\text{E.P.V.}}{\text{P.V.of Cash Outflows}} \times 100$$

Acceptance Rule- When the PI of a project exceeds one it will be accepted and will be rejected if less than one. It means higher the ratio, more desirable will be the project. As per the ranking, a project having highest rank will be most profitable.

16.5.8 EQUIVALENT ANNUAL COST METHOD (E.A.C)

Under this method, present values of annual operating costs will be calculated at given discounting rate. The present value of salvage receivable at the end of project's life should be deducted from the total of present values of annual costs. In this way, total discounted cost can be obtained. Then, this discounted cost should be converted into Equivalent Annual Cost by the following formula-

Formula-

E.A.C= Total Discounted Cost × Capital Recovery Factor

OR,

$$E.A.C. = \frac{\text{Total Discounted Cost}}{\text{Cumulative P.V.F}}$$

Acceptance Rule- The project involving less Equivalent Annual Cost should be preferred. This method has a very limited use and cannot be applied in all cases. Its practical significance is also limited.

16.5.9 Urgency Method

Any decision on capital expenditure on the basis of urgency should be taken only if it is fully justified by the particular situation arisen in the operating life of the concern. E.g. if a plant stops working leading to complete breakdown and disruption in the production, it will be justified to replace immediately by a new one even without comparing the cost and future benefits.

Numerical-

X. Ltd. has purchased patent rights for Rs. 60,000 which are to run for a period of three years. The future earnings after tax are given below:

Year	EAT in Rs.
1	10,000
2	10,000
3	10,000

Compute the following:

1) Pay-back period.

2) Average Rate of Return

3) Internal Rate of Return

4) N.P.V. at 15% rate of discount, P.V. of Rs.1 for 3 years at 15% is 2.283.

Solution-

Earnings after tax before Dep.=10,000 + 20,000 = Rs. 30,000.

$$1)\ \ \text{Pay back period} = \frac{60,000}{30,000} = 2 \text{ years}$$

$$2)\ \ A.R.R. = \frac{(OS - \frac{NI}{n})}{\frac{NI}{2}} \times 100$$

$$= \frac{(30,000 - \frac{60,000}{3})}{\frac{60,000}{2}} \times 100$$

$$= \frac{10,000 \times 100}{30,000} = 33\frac{1}{3}\%$$

3) I.R.R.-

$$\text{Present Value Factor} = \frac{60{,}000}{30{,}000} = 2$$

Present Value of 2 from cumulative P.V. table:

Rate	P.V
23%	2.011
24%	1.981

$$\text{I.R.R.} = 23 + \frac{2.011 - 2}{2.011 - 1.981}(24 - 23)$$

$$= 23 + \frac{0.011}{0.030} \times 1 = 23.37\%$$

4) N.P.V.:

	Rs.
Total Present Value (30,000 × 2.283)	68,490
Less: Cash outflows	60,000
N.P.V.	8,490

Check your Progress

Q.1. What is Pay-back period?

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....
....
....
....

Q.2. When a project is accepted under Present Value Method?

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....

Q.3. What is Accounting Rate of Return?

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Q.4. Write the formula for computing profitability index.

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....

16.6 CAPITAL RATIONING

Capital rationing refers to the situation where the management has more acceptable investment proposals requiring more amount of finance than available to the concern. A concern may not be able to accept all profitable investment proposals, if and when capital rationing is imposed. All investment proposals falling into accepting criterion should be ranked according to profitability (I.R.R. or P.I.). Investment proposals are selected/accepted in descending order of profitability until the budgeted funds are exhausted.

Since the concern would have to reject certain profitable investment proposals due to lack of funds under capital rationing, it would not be able to maximise its value. In fact, maximisation of value is subject to budget constraint. For this reason, the management should choose that combination of investment proposals which gives the maximum net present values. Application of this principle may force the management not to accept proposals strictly in descending order of profitability. It means that management may accept several less profitable proposals (as per I.R.R. or P.I.) with positive N.P.V. making highest N.P.V.

16.7 NEED OF CAPITAL BUDGETING

A systematic use of plan in respect of capital expenditures is a basic need. The following factors further increase the need of such capital expenditure plan or capital budgeting-

1) Capital projects require huge amount of investment and therefore their proper budgeting is necessary.

2) Amount invested in capital projects is a permanent commitment and money cannot be recovered quickly without any material loss.

3) These capital projects affect the earnings of many future years.

4) Long-term capital projects carry with them a high degree of risks and uncertainty.

16.8 IMPORTANCE OF CAPITAL BUDGETING

The following points indicate the importance of capital budgeting-

1) It highlights upon the possibilities of additions to production facilities to cover up the additional sales shown by the sales budget.

2) Adequate information about the various alternatives available to replace an obsolete asset or wasting asset.

3) It helps in the formulation of long-term policy about plans.

4) It is needed for cash forecasts and budget.

5) It also helps in following a sound policy with regard to depreciation and replacement of assets.

6) It renders help in considering the methods of profit-control and methods of cost reduction.

7) On the basis of this budget, it can be observed whether machines in place of men would be profitable or not.

8) An estimate about the cost of capital of improvements in working conditions and safety measures may be made with the help of this budget.

16.9 SUMMARY

Capital budgeting is a managerial decision making process under which proposed capital investments and their planning are considered and projects assuring the most profitable use of given resources are undertaken. Various methods can be used for evaluating capital investment proposals. Pay-back period, Internal rate of return, Net Present Value, Profitability Index, etc, are some of the popular methods of capital budgeting or investment appraisal. Acceptance rules for proposals differ in various methods.

Pay-back period method represents the period which is required to get back the original cost of investments by annual savings. Highest ranking is given to the project with shortest pay-back period. Internal rate of return is the rate at which present value of annual savings is equal to cost of investment. The project is accepted when the rate of return is greater than the cost of capital. Net Present Value method is the most popular method in this context. Under this method, all cash inflows and outflows are discounted at a given rate and their present values are ascertained. Present value of cash outflows are deducted from the present value of cash inflows. If NPV is positive or zero the project is accepted.

Capital rationing is imposed when acceptable investment proposals are more than the available fund. Investment proposals are selected in descending order of profitability.

16.10 Keywords

Internal Rate of Return (IRR) -	Expected rate of return on investment.
Accounting Rate of Return (ARR) -	Ratio of average income to average investment.

16.11 Answers to Check your Progress:	
1.	Pay-back period is the number of years required to recover the original cash outlay invested in a project.
2.	If the present value of cash inflows are greater than or equal to the present value of cash outflows, the project would be accepted.
3.	It is the ratio of average after tax profit to average investment.
4.	Profitability Index = $\frac{\text{Present value of Cash Inflows}}{\text{Present value of Cash Outflows}}$

16.12 TERMINAL QUESTIONS

Question 1 What is Capital Budgeting? Highlight its significance.

Question 2 Give a comparative description of various methods of ranking investments proposals.

Question 3 Compare and contrast Internal Rate of return and Net Present Value methods of project evaluation.

Question 4 Define Capital Rationing? Does capital rationing lead to sub-optimal investment decisions?

Question 5 ABC Company has to invest Rs. 30000 in project with the following expected cash-inflow:

Year	**C.F. (Rs.)**
1	4,000
2	4,000
3	4,000
4	4,000
5	4,000
6	7,000
7	9,000
8	12,000
9	9,000
10	2,000

Using 10% as the cost of capital, determine the following:

(a) Pay-back period, (b) N.P.V. at 10%, (c) Profitability Index at 10% and

(d) I.R.R. with the help of 10% and 15% discounted factors

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MBA-1.3

Accounting For Management

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BLOCK

5

Working Capital Management

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UNIT-17 MANAGEMENT OF WORKING CAPITAL

Objectives

The objectives of this unit are to familiarize you with the:

- concepts and component of working capital
- significance and need for working capital
- determinants of the size of working capital
- criteria for efficiency in managing working capital

Structure

17.1 INTRODUCTION

Working capital management is significant in financial management due to the fact that it play an important role in keeping the wheels of a business enterprises running. It is concerned with short term financial decision. Lack of effective and efficient utilisation of working capital leads to earn low rate of return on capital employed. Working capital means meeting day to day requirements. The requirements of working capital changes from time to time and firm to firm depending upon nature of business, market conditions, production policy etc. Working capital to a company is like the blood to human body. So working capital management if carried out effectively, efficiently will assure the health of an organisation.

17.2 SIGNIFICANCE OF WORKING CAPITAL

The flow of working capital in a business organisation can be compared to the flow of blood in the human body. Like blood is necessary for functioning of the human body, working capital is necessary to run the current operation of a business. The facilities created in a business to manufacture goods and generate service remain unutilised so long as the current assets necessary to put these facilities into use are not acquired.

Even a firm equipped with latest and sophisticated technology can not produce results without acquiring sufficient working capital. Working capital in a business is needed to ensure an adequate supply of raw materials to process, payment of wages and other expenses in time, to keep sufficient stock to finished goods so as to supply them on demand and credit sales to customer to combat the credit policies of the competitors. An adequate supply of working capital can do much to ensure the success of a business, while its inadequate supply can not only lead to loss of profits but also to the ultimate downfall of what otherwise might be considered as a promising concern.

17.3 MEANING OF WORKING CAPITAL

Every business organisation comes into existences to serve the society by selling goods and services. For this purpose it has to create facilities to manufacture goods and/or generate services. These facilities are created by acquiring fixed assets like land and buildings, plant and machinery and furniture and fixture. To make effective use of these fixed assets it becomes necessary to acquire certain current assets. The current assets are necessary to run the current operations of the business. Current asset include the funds blocked in raw materials, stores and spares, finished goods, receivables for credit sales, prepaid expense and marketable securities. Further a portion of the funds of the business would also be kept in ready cash for routine expenses like payment of wages and salaries, telephone bills, purchase of stationary etc. A part of the funds blocked in the current assets is financed by current liabilities like accounts payables for credit purchases, outstanding expenses and temporary loans and another part of the current assets is financed from long term sources of capital i.e. equity capital, retained earnings and long term loans.

Investment of a business in current assets is known as its Gross Working Capital. Excess of current assets over current liabilities is known as Net Working Capital. Management of working capital covers management of both current assets as well as current liabilities.

Definitions

1- "Circulating capital means current assets of a company that are changed in the ordinary course of business from one form to another, as for example, from cash to inventories, inventories to receivables, receivables into cash."

- Gerstenberg

2- "Working capital is descriptive of that capital which is not fixed. But the more common use of working capital is to consider its as the difference between the book value of the current assets and the current liabilities."

- Hoagland

3- "The sum of current asset is the working capital of a business."

- J.S. Mill

4- "Total of current assets is working capital.

- I.M. Pandey

In accounting sense, working capital is excess of current assets over current liabilities and Gross working capitals is sum total of all current assets.

17.4 OPERATING CYCLE

The operating cycle refers to the length of time between purchase of inventory items, raw materials or finished goods and their conversion into cash. It is also known as working capital cycle. The sequence of events which comprise an operating cycle depends upon the nature of activities carried on by the firm. In the case of manufacturing firms following events would comprise the operating cycle:

- Purchase of raw materials for cash.
- Conversion of raw materials into work in process.
- Conversion of work in process into finished goods.
- Conversion of finished goods into debtors by selling on credit.
- Receipt of cash from debtors.

The operating cycle of a trading concern such as the wholesalers and the retailers would be different from that of a manufacturing concern. It would not have a manufacturing phase but would have a direct conversion of cash into inventory which would be converted into debtors/receivable and then into cash.

The operating cycle of a service organisation such as a consultancy firm or financial company would be further shorter as it would not involve any dealing in goods. In a service organisation services are produced and are sold for cash. At the most services may be sold on credit.

17.5 SOURCES OF WORKING CAPITAL

Investment in working capital requires financing as does investment in fixed assets. The sources of finance for meeting working capital needs can be classified into two categories: short term and long term. Short term sources of working capital meet the firm's requirement for a very short period usually less than one year whereas the funds received from long term sources of working capital are at the disposal of the firm for a considerable period.

Sources of Working Capital

Short Term	**Long Term**
□ Short terms loans from	□ Equity shares
commercial banks	□ Preference
shares	
□ Cash credit and Bank overdraft	□ Debentures
□ Trade credit	□ Public Deposits
□ Installment credit	□ Retained
earnings	
□ Customer's advances	□ Loans
from Financial	
□ Public Deposits	Institutions

17.6 KINDS OF WORKING CAPITAL

For the proper management of working capital, it is classified into two categories.

- On the basis of concept
- On the basis of time.

On the basis of concept

Working capital has two concepts viz. gross concept and net concept. Let us understand the meaning and significance of these two concepts.

I. Gross working capital

Gross working capital refers to the total of funds invested in the current assets. Current assets are the assets which are converted into cash in normal course of the business of a firm. Viewed differently current assets are those assets which are converted

TESLA-016

into cash during one accounting year (or operating cycle). Current assets consists of the stock of raw materials, stores and spares and finished goods, accounts receivables, marketable securities, prepaid expenses and cash.

The focus of gross working capital concept is on individual current asset and their relative proportion in the total of all of them. This concept is used by the management to evaluate the current working capital position and to ensure the optimum investment in individual current asset. In case the investment in current assets is inadequate, it would hamper the normal functioning of the business and effective utilisation of fixed assets. The excessive investment in current assets would lead to a decline in the profitability since a proportion of current assets would remain idle.

The gross working capital concept also focuses the attention on the requirements of arranging funds to finance the current assets at the right time. In case the size of operations of a business increases the additional requirement of working capital should be met quickly. If certain funds become idle for a short period, these should not be allowed to remain unutilised. Arrangement should be made for their temporary investment.

The gross working capital concept has the following advantages –

- This concept is helpful in determining the correct amount of working capital at the right time;
- This concept helps in planning and control of individual current asset;
- It helps a firm to maximise return on investment;
- It helps in fixation of financial responsibility.

II. Net working capital

Net working capital refers to the excess the total of all current assets over the total of current liabilities. Current liabilities include accounts payables, short term bank loans outstanding expenses and other payables and accruals becoming due within a year.

Net working capital concept is a qualitative concept as it establishes a relationship between current assets and current liabilities. It is that part of the total investment in current assets which comes from long term sources. It is used by the external parties such as banks and suppliers to determine liquidity position of the firm. In order to protect their interest they always like a firm to maintain its current assets higher than the level of its current liabilities. There is a rule of thumb to keep the investment in current assets twice the level of current liabilities. However it is important to give the consideration to the relative quality of the current assets (ability to be converted into cash) while determining the amount to be invested in current assets. The net working capital concept seeks to have an optimum balance among risk return and liquidity objectives of a firm.

The investment in working capital has to be determined in the light of assuming minimum possible risk, while maximising the return and maintaining sufficient liquidity. One objective should not be given priority over other. The proposition of assuming lesser risk would require more investment in current assets. It would improve the liquidity position of the firm but its profitability would be adversely affected because it may have idle funds.

Lesser investment in working capital may result into negative working capital as the level of current assets may become lower than that of current liabilities. The situation of negative working capital would be disastrous for the firm as it would not be in a position to satisfy the claims of the creditors on due dates.

The net working capital concept is a more useful concept because working capital management is concerned with the problems that crop up in managing the interrelationship between current assets and current liabilities. It is the excess of current assets over current liabilities which enables the creditors and investors to assess the short-term solvency i.e. liquidity of the firm.

It is the net working capital which can be relied upon to meet contingencies since it is financed out of long term sources of capital and hence not liable to be returned in the near future. This concept helps the management to look for permanent sources for its financing since working capital under this approach does not increase with increase in short term borrowings. It is also useful for those who are interested in determining the amount and nature of assets that may be used to discharge the current liabilities.

(B) On the basis of time

1. Permanent working capital

Permanent working capital is the minimum investment in current assets which is essential to carry on the business of a firm even during the dullest period. It is needed to ensure the circulation of current assets through the operating cycle. The investment in permanent working capital is locked up so long as the firm is a going concern. For example every manufacturing organisation needs to keep certain minimum investments in raw materials, work in progress, finished goods, loose tools and spares. This minimum level is in effect, every bit as permanent as the firm's fixed assets.

The requirement of permanent working capital is related with the size of operations of the business. For increasing the size of operations a firm needs to increase the investment in fixed assets. Increase in fixed assets leads to increase in sales volume which necessitates increase in permanent working capital.

2. **Variable working capital**

Variable working capital is needed by the firm to meet liquidity needs that arise only temporarily. The need for variable part of the working capital requirements arises to meet the seasonal changes or abnormal or unanticipated conditions. The seasonal working capital is the additional amount of working capital which is required during the more active business season of the year. As soon as the busy season is over the requirement for season of working capital also disappears. The temporary rise in the price level may require additional working capital to be invested in raw materials and work in progress. Additional doses of working capital may be required to face the cut throat competition and such other contingencies like strikes and lockouts. A special campaign introducing the new products in the market, or increasing the sales of existing products is needed to be financed by additional working capital.

Temporary working capital

- **Seasonal Working Capital.** Seasonal working capital is that working capital which is required during particular season when the production takes place. Sugar industry provides a good example where this type of working capital is needed.

Special Working Capital: It is that part of working capital which is needed to finance special operation. In case of competition it may be necessary to spend extra amount on advertisement campaign. In order to capture more markets it may become necessary to speed up working mechanism.

Check Your Progress

Q1. State three short term sources of working capital.

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Q2. What is gross working capital?

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Q3. Give classification of working capital on the basis of time.

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17.7 COMPONENTS OF WORKING CAPITAL

From the discussion of the meaning of working capital, we have understood that there are two components of working capital: Current assets and current liabilities. Current assets are those assets which are converted into cash in the normal course of activity of a firm usually one year. Current liabilities are the short term obligations of a business which are needed to be discharged during the next accounting year. The typical items comprising current assets and current liabilities are as given:

A. Current Assets

- Cash
- Short term investments
- Fixed deposits with banks for less than one year.
- Receivables arising out of credit sales.
- Raw materials and components used in manufacturing process.
- Work in process and consumable stores.
- Finished goods.
- Advance payment for tax and prepaid expenses.

B. Current Liabilities

- Short term borrowings.
- Public deposits maturing within one year.
- Sundry creditors for credit purchase of raw materials & stores.
- Advance payments from customers.
- Installments on long term loan payable within one year.
- Outstanding expenses.
- Provision for taxation.
- Dividends payable.

17.8 IMPORTANCE OF WORKING CAPITAL MANAGEMENT

Working capital is essential to maintain the smooth running of every business just as circulation of blood is essential in the human body for maintaining life.

According to Husband and Dockery, "The Prime object of management is to make profit. Whether or not this is accomplished in most business depends largely on the manner in which the working importance of Adequate Working Capital is administered."

No business can run successfully without an adequate amount of working capital. The main advantages of working capital are as under:

1. **Goodwill in supplier market.** Adequate working capital ensures timely payments to supplies of goods and services. It ensures regular supply of raw materials and continuous production. Adequate working capital also enables a concern to avail cash discount on purchases and hence it reduces cost.

2. **Goodwill among employees.** A company having adequate working capital can make regular payment of salaries, wages and other day to day commitments which raises the morals of its employees, increase their efficiency, reduces wastages and cost and enhances production and profits.

3. **Better relations with financial institution.** Regular and timely payments of both principal amount and interest, high solvency and good credit standing helps company to arrange loans from banks and others on easy and favourable terms.

4. **Ability to face crisis.** Adequate working capital enables a concern to face business crisis in emergencies such as depression because during such periods, generally, there is much pressure on working capital.

5. **Quick and regular return on investment.** Sufficiency of working capital enables a concern to pay quick and regular dividends to its investors as there may not be much pressure to plough back profits. This gains the confidence of its investors and creates a favourable market to raise additional funds in future.

6. **Increased High Production Efficiency.** If adequate working capital is maintained in the business, the firm can successfully run out its operations and development programmes etc. which help in increased production efficiency. It would also enable the company to discharge its social responsibility towards the society.

7. **Distribution of dividend.** If the adequate working capital is not maintained in business, the firm can not distribute the dividend to its shareholder inspite of sufficient profits. On the contrary, if working capital is adequate, sufficient dividend can be decreased and distributed. It increases the market value of share.

8. **Increase the efficiency of Fixed Asset.** The adequate working capital increases the efficiency of Fixed Asset of business because of its proper maintenance. Without working capital, fixed assets are like a gun which can not shoot as there are no cartridges.

9. **Meeting contingencies and adverse changes.** If the working capital is adequate then a company can easily face certain business and economic crises e.g. the demand for goods

decrease during depression period and the payment of credit sale is also made after a long period. In this case, companies with adequate working capital can only successfully meet the adverse situations. The contingencies such as business oscillations, financial crisis arising from heavy losses etc. can be successfully met by a company having adequate working capital.

10. **High Morale.** Adequacy of working capital creates an atmosphere of security and confidence. The workers are confident of getting their wages regularly and in time. The suppliers are sure to get prompt payments. This boosts the morale of management and workers. So we can say that ample working capital builds high morale of employee and employees. This sense of security, atmosphere of certainty and confidence is a must for industrial Prosperity.

11. **Off-Season Purchasing.** Usually customers are offered off-season discount by supplier. It is seen that saving in terms of off-season discount earned is more than the extra storage cost. But only those concern will be in a position to save on this score which have adequate working capital.

17.9 FACTORS DETERMINING THE WORKING CAPITAL REQUIREMENTS

There are a large number of factors which determine the working capital requirements of a firm. It is very difficult for the management of a firm to rank these factors in the order of importance as the individual influence of these factors in the determination of working capital requirements changes over time. There is no single set of factors which determine the working capital requirements of all the firms. The management of a firm should identify the factors influencing its working capital needs. It should also review them at periodical intervals so as to comprehend the changes in their relative impact. Some of the pertinent factors having an overall view of the forces affecting working capital needs have been discussed below :

1. **Nature of Business.** The nature of business of a concern is one of the basis determinants of its working capital needs. A trading concern has to invest proportionately high amount in working capital as it has to carry a large stock of variety of goods to satisfy the varied and continuous demand of its customers. Public utilities have a high investment in fixed assets but their working capital needs are limited as they offer cash sales only and supply services only (not products) and as such no funds are blocked in receivables and inventories.

   Some of the manufacturing concerns like Tobacco manufacturers and construction companies have to invest sizable amount of funds in working capital and a nominal amount in fixed assets. Certain other manufacturing concerns have to invest heavily both in fixed assets as well as in working capital. Generally speaking trading & financial firms need relatively large investment in working capital whereas public utilities require small amount of working capital. The working capital requirements of most manufacturing firms fall in between the two extremes.

2. **Size of Business.** The size of business measured in terms of scale of its operations has an important impact on its working capital needs. Generally larger the scale of operations larger would be the requirements of working capital. A smaller size business would require lesser investment in working capital. In certain cases a small business may also have more working capital due to high overhead charges and inefficient use of available resources. It is also possible that a larger concern may have comparatively lesser investment in working capital due to efficient management of its resources.

3. **Production Policy.** The production policy of a firm has an important impact on its working capital needs. In the case of a firm having seasonal changes in the demand for its product the production could be either kept steady permitting inventories to build up during off season periods with a view to meet high demand during the peak period or the production could be varied according to the changes in the demand. In the former case the requirement of working capital during the slack season would be comparatively more ; in the later case the finance manager would be required to constantly adjust his working capital according to the volume of production.

4. **Length of Production Cycle.** In manufacturing business the length of the production cycle has an important bearing on the determination of working capital needs. The production cycle starts with the purchase of raw materials and ends with the production of finished goods. The longer is the period of manufacturing cycle, the larger is the amount of working capital required. In a longer manufacturing time span, the raw materials and other supplies have to be carried for a longer period in the processing with progressive addition of labour and other manufacturing costs before the final product is obtained. Thus if alternative processes for the same product are available then the process with the shortest manufacturing cycle should be selected. It should be ensured that the manufacturing cycle is completed within the stipulated time since any delay in the completion of manufacturing cycle would result into accumulation of inventories in work in progress. This would adversely affect the profitability of the firm.

5. **Seasonal Availability of Raw Materials.** In industries like sugar and cotton textile raw materials are not available throughout the year. Firms in such industries need to make purchases of raw materials in bulk during a specific season to ensure the uninterrupted flow of production process during the entire year. This necessitates additional working capital during the period when purchases of raw materials have to be made.

6. **Business Fluctuations.** There is a functional relationship between the volume of sales and working capital requirements. Higher volume of sales requires larger investment in working capital and vice versa. The demand for the output of all the firm does not remain stable. Most firms experience seasonal and cyclical fluctuations in the demands for their products and services. During an upward swing in the level of demand, sales will increase, necessitating more working capital investment in inventories and book-debts. On the other hand when there is a downward trend in the demand the sales would decline and consequently the need for investment in inventors and book-debts would also decline.

7. **Credit Policy.** The credit policy adopted by a firm affects the investment in working capital to a significant extent. Although the credit terms granted by a firm to its customers depend upon the industry norms and practices to which it belong yet it can shape its own credit policy within the industry norms and practices. A liberal credit policy would require more working capital as more funds would be blocked in book-debts. On the other hand a concern selling its products/services on cash requires lesser amount of working capital. In order to ensure that unnecessary funds are not blocked in book debts the firm should follow a rationalised credit policy. Depending upon credit-worthiness different customers may be granted different credit terms.

   Customers with better credit-worthiness may be extended liberal credit terms and those whose credit worthiness is poor may be refused credit. The firm should carefully evaluate the credit standing of the new customers and review the credit-worthiness of the exiting customers at periodical intervals. The collection of book debts at the right time should be given priority since a delayed collection of book debts will not only result into blocking of investment in idle funds but also increase the bad debt losses.

8. **Credit Policies of the Suppliers.** The credit policies followed by the suppliers of raw materials and other accessories of a firm significantly affects its working capital requirements. A firm to which liberal credit terms are available from its suppliers, would require lesser working capital. On the other hand a firm buying its requirements on cash would need larger amount of working capital.

9. **Availability of Credit from Banks.** The ability of a firm to borrow money from banks depends upon its credit-worthiness and its relationship with the banks. A firm which can borrow from banks on favourable terms can operate with lesser investment in working capital than a firm whose credit standing in the eyes of banks is poor.

10. **Growth in the Size of Business.** A growing firm requires larger amount of working capital. It is difficult to establish an exact relationship between the rate of growth of a business and

additional working capital requirements. However it can be said that for normal growth in the volume of business we may finance additional working capital needs from retained profits but a faster growing firm need to arrange additional working capital from outside sources. A faster growing firm requires funds for investment in fixed assets to sustain its growing production and sales. This requires increase in the volume of investment in current assets to make effective use of enlarged facilities created by additional fixed assets.

11. **Earning Capacity and Appropriation of Profits.** The earning capacity of firms differs from one another depending upon the quality of their products, level of demand and monopoly conditions etc. Firms with high earning capacity contribute to their working capital to the extent they earn profits in cash. Such firms can fulfill their working capital needs through the internally generated funds. The way the profits are appropriated also influence the working capital position.

    The amount of cash generated from operations can be used for a variety of purposes ; meeting working capital needs ; acquisition of fixed assets and payment of dividend etc. If a firm maintains a high steady rate of dividend irrespective of the volume of cash profits it will require more working capital than the firm which retains a large portion of its profits and does not pay a high rate of dividend.

12. **Operating Efficiency.** Operating efficiency of a firm directly influences its working capital needs. An efficient firm can reduce the length of its manufacturing cycle and thus avoid the blocking of working capital in work in progress. It can avoid over investment in the stock of raw materials and finished goods through proper planning and scheduling. It can also control the blocking of funds in receivables by pursuing carefully designed credit policy and toning up the debt collection mechanism. In this way the affective utilisation of available resources improve the profitability of the firm and release the pressure on working capital.

13. **Price Level Changes.** Price level changes also influences the working capital needs of a firm. Generally a rise in the price level will require more investment in working capital to maintain the same current assets. The effect of rising prices on the working capital needs will be different for different firms depending upon the relative changes in the prices of their current assets. Firms which revise their product prices with rising price level may not face any severe working capital problem. Those firms which cannot revise their product prices due to the market competition are hit hard by the rising prices in terms of their working capital needs.

14. **Co-ordination in Organisation.** If a firm in working with project co-ordination then there is bound to be less need of working capital as compared with a firm where there is no proper co-ordination. In a co-ordinated firm obviously cash will

be quickly collected and all problems which comes in the way will be quickly removed.

15. **Labour Intensive Vs Capital Intensive Industries.** In labour intensive industries, large working capital is required because of regular heavy wage bill and more time taken for completing the (production process) manufacturing processes. On the other hand the capital intensive industries lesser amount of Working Capital because of heavy investment in fixed assets and shorter period in manufacturing process.

16. **The proportion of the Cost of Raw Material to Total Cost.** Industries where the proportion of cost of raw material to total cost are more or where costly raw material is used, the requirement of Working Capital will be large. But if the proportion of raw material is small, the requirements of working capital will naturally be small.

17. **Terms of Purchases.** If continuous credit is supplied by the supplier, payment can be postponed for some time and can be made out sales proceeds of the goods produced. In such a case, the requirement of working capital will be reduced. The period of credit received also determine the working capital requirements of the enterprise.

18. **Rate of Stock Turnover.** Turnover represents the speed with which the working capital is recovered with the sale of goods. In some concerns sales are made quickly so that stocks are soon exhaustive and new purchases to be made. In this way a small amount of money is needed for sales of much larger amount. It will reduce the requirements of more working capital otherwise vice versa.

19. **Need for Stock Pilling.** These concerns which need large sales stock of raw material and finished goods (requirements) requires greater amount of working. Sometimes the nature of industry is such that it requires large stock of raw material to be kept. In concerns where the material is bulk and is required to be purchased in large quantities, greater working capital will be needed. In those industries where coal is used as basic raw material e.g. steel industry, cement industry stock pilling of raw material is usual and natural.

20. **Other Factors.** There are certain other factors which also influence the working capital needs. If the means of transport and communication are not properly developed there would be greater demand for working capital because the industries would require larger investment to maintain big inventories so as to ensure the uninterrupted flow of production.

The import policy of the Govt. will surely influence the working capital needs of those industries which process the imported raw material as they have to arrange funds to import raw material on specific times. The uncertainties and hazards specific to a particular industry also influence the working capital needs of the firms in that industry.

7.10 ESTIMATING WORKING CAPITAL NEEDS

Working capital can be regarded as life blood of every business. Every financial manager should make efforts to ensure adequate supply of working capital. To achieve this objective there is a need for preparing an estimate of working capital needs. An estimate of working capital is based upon the factors determining requirement of working capital.

The amount of working capital needed by a firm is generally dependent upon the volume of sales. Most firms experience seasonal fluctuations in the volume of demand for their products. Therefore the estimate of working capital needs will differ from season to season. However it would be worthwhile to make an estimate of average working capital requirements and then adjust it for the effect of seasonal changes.

For making an estimate of working capital needs the finance manager must look to behaviour of working capital needs in the past. The information relating to the variables determining the working capital needs should be collected and adjusted for expected future changes. A functional relationship between different variables and the investment in working capital should be established. Thereafter the estimate of working capital is made by taking into consideration this functional relationship and the volume of future business operations. For estimating the working capital needs of a manufacturing organisation usually the following factors are taken into consideration :

- Budgeted volume of production and sales.
- Raw Material period (the length of time for which raw materials remain in store before being issued to production department).
- Expected raw material cost.
- Work in progress period (the length of time taken to convert raw material into finished goods).
- Expected expenditure on direct wages and overhead .
- Finished goods period (the length of time for which finished goods remain in store before being sold).
- Average collection period (the length of time for which receivables remain uncollected).
- Expected credit sales.
- Amount of cash needed to meet day to day expenses and to make advance payments.
- Credit period allowed by suppliers.
- Expected credit purchases.
- Average amount of expenses remaining outstanding throughout the year.

In a trading concern, variables 1 to 6 mentioned above would not be there as such concern do not manufacture goods but deal in finished goods only. In a service organisation concern, variable 7 would also be missing in addition to the variables 1 to 6. This is so because service organisation do not deal in goods but sell the services generated by them.

Process of preparing estimation of working capital –

Once the analyst has gathered information relating to variables determining working capital needs he is set to prepare the estimate of investment needed to finance different current assets. He can also determine the contribution of current liabilities such as accruals and payables in financing current assets. The process of preparing estimates for important and major current assets and current liabilities is explained below:

1. **Raw Materials.** The amount of investment needed to finance raw materials would be depended upon the average daily consumption of raw material and the length of time for which the raw material remains in store before being issued to the manufacturing departments.

   $$\text{Raw Materials} = \frac{\text{Annual Consumption of Raw Materials}}{365} \times \text{Raw Materials Period}$$

   In case the raw material period is given in weeks or months the figure 365 would be replaced by 52 or 12 respectively.

2. **Work in Progress.** In a manufacturing concern considerable amount of investment is blocked in work in progress. The amount of work in progress is dependent upon the cost of production and the conversion period. There are three components of work in progress i.e., raw materials, wages and overheads.

   Usually work in progress is considered to be 100 per cent complete with regard to raw material cost on the assumption that all raw materials needed for the manufacture of goods remain in manufacturing process. For computing the direct wages and overheads component of work in progress these costs are usually taken at half on the assumption these costs accrue evenly during the time production is in progress. The computation of different elements of work-in-progress is shown below:

(a) Raw Material

$$= \frac{\text{Annual Consumption of Raw Materials}}{365} \times \text{Conversion Period}$$

(b) Wages

$$= \frac{\text{Annual Direct Wages Cost}}{365} \times \text{Conversion Period} \times 1/2$$

(c) Overheads

$$= \frac{\text{Annual Overhead Expenses}}{365} \times \text{Conversion Period} \times 1/2$$

In case conversion period is given in weeks or months the figure 365 would be replaced by 52 or 12 respectively.

3. **Finished Goods.** The average investment in finished goods of concern would be a function of expected cost of production and the finished goods period i.e., the time gap for which finished goods remain in store before being sold.

$$\text{Finished Goods} = \frac{\text{Expected Cost of Production}}{365} \times \text{Finished Goods Period}$$

In the above equation if the finished goods period is given in weeks or months the figure 365 would be replaced by 52 or 12 as the case may be.

4. **Debtors/Receivables.** The amount of money needed to finance debtors/receivables would be dependent upon the volume or credit sales and the collection period i.e., the period for which debts remain uncollected on an average.

Debtors/Receivables

$$= \frac{\text{Annual Credit Sales}}{365} \times \text{Collection Period}$$

Some authorities on the subject argue that in the above equation the amount of annual credit sales should be replaced by the annual cost of goods sold since the finance manager has to arrange the funds to invest in receivables at cost of production only. The difference between selling price and the cost of goods sold does not require any funds. If the collection period is given in weeks or months then in the above equation the figure 365 would be replaced by 52 or 12 respectively.

5. **Payables for Credit Purchase.** The amount of payables contributing towards financing of current assets is a function of credit purchases and the average payment period i.e. the credit period extended by the suppliers.

$$\text{Payable or Sundry Creditors} = \frac{\text{Annual Credit Purchases}}{365} \times \text{Average Payment Period}$$

In case of those situations where the average payment period is given in months or weeks the figure of 365 would be replaced by 12 or 52 as the case may be.

6. **Accruals or Outstanding Expenses.** The contribution of accruals or outstanding expenses towards financing of current assets would depend upon the amount of each item of expenses and the time lag in its payment. For example the amount of outstanding wages at a point of time would be computed with the help of following equation:

$$\text{Outstanding Wages} = \frac{\text{Total Annual Wages}}{365} \times \text{Time lag in Payment of Wages}$$

In the time lag in the payment of wages is given in weeks or months the figure of 365 is replaced by 52 or 12 as the case may be.

17.11 WORKING CAPITAL MANAGEMENT UNDER INFLATION

It is desirable to check the increasing demand for capital for maintaining the existing level of activity. Such a control acquires even more significance in time of inflation. In order to control working capital needs in periods of inflation, the following measures may be applied.

Greater disciplines on all segments of the production front may be attempted as under:

a) The possibility of using substitute raw materials without affecting quality must be explored in all seriousness. Research activities in this regard may be undertaken, with financial assistance provided by the Government and the corporate sector, if any.

b) Attempts must be made to increase the productivity of the work force by proper motivational strategies. Before going in for any incentive scheme, the cost involved must be weighed against the benefit to be derived. Though wages in accounting are considered a variable cost, they have tended to become partly fixed in nature due to the influence of various legislative measures adopted by the Central or State Governments in recent times. Increased productivity results in an increase in value added and this has the effect of reducing labour cost per unit.

The managed costs should be properly scrutinised in terms of their costs and benefits. Such costs include office decorating expenses, advertising, managerial salaries and payments, etc. Managed costs are more or less fixed costs and once committed they are difficult to retreat. In order to minimise the cost impact of such items, the maximum possible use of facilities already created must be ensured.

Further the management should be vigilant in sanctioning any new expenditure belonging to this cost area.

The increasing pressure to augment working capital will, to some extent, be neutralised if the span of the operating cycle can be reduced. Greater turnover with shorter intervals and quicker realisation of debtors will go a long way in easing the situation.

Only when there is pressure on working capital the management becomes conscious of the existence of slow-moving and obsolete stock. The management tends to adopt ad hoc measures which are grossly inadequate. Therefore, a clear cut policy regarding the disposal of slow-moving and obsolete stocks must be formulated and adhered to. In addition to this, there should be an efficient management information system reflecting the stock position from various standpoints.

Consequently it increases the bargaining power of the firm regarding period of credit for payment and other conditions. Projections of cash flows should be made to see that cash inflows and outflows match with cash other. If they do not, either some payments have to be postponed or purchase of some avoidable items has to be deferred.

17.12 EFFICIENCY CRITERIA FOR EVALUATION OF WORKING CAPITAL MANAGEMENT

Proper management of working capital is of paramount importance for a firm as it improves both the profitability and credit worthiness. What is the meaning of effective working capital management? It is an important question. The overall position of working capital is analysed by outsiders as well as the management of the firm. The outsiders interested in the working capital position of a firm include trade creditors, banks and financial institutions. They need information to evaluate the firm in terms of its long term solvency and its ability to repay the current debt.

The internal management needs to keep an eye on the working capital position so as to ensure that its management is consistent with firm's basic objectives. The above discussion brings home the fact that there cannot be a single parameter to evaluate the efficiency in the management of working capital. Some of the important criteria to evaluate the management of working capital are discussed below:

1. **Ability to Repay Debt on Maturity.**

   A firm should be capable of discharging its dept on maturity. If a firm does not discharge its liabilities on due dates it is going to suffer in the form of fall in its credit worthiness. Subsequent borrowing may be available at higher rates of interest only. A situation may arise that no trade credit is available to the firm and it has to arrange cash to purchase raw materials and other supplies. These factors are surely going to reduce the profitability of the firm. Following rations are usually suggest of measuring the liquidity ability to discharge current obligations of a firm :-

(i) **Current ratio.** Current ratio establishes a relationship between current assets and current liabilities of a firm. It is also known as working capital ratio.

$$\text{Current Ration} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

The higher the current ratio, the more liquid is the firm and vice versa. However a higher current ratio often leads to decline in profitability as some of current assets may become idle. Though 2:1 is considered as an ideal current ratio, it has to be modified according to specific requirements of the industry to which the firm belongs. Industry average of the current ratio is another yardstick which can be used for determining the liquidity of a firm.

(ii) **Quick assets ratio Acid-test ratio.** This ratio establishes a relationship between quick assets (current assets other than inventories and prepaid expenses) and current liabilities. The reason for exclusion of inventories is that it takes some time for conversion of inventories into cash. Under forced selling, there may be loss also. Since prepaid expenses can never be realised in cash, therefore these are also excluded for computing quick ratio.

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

Higher the quick ratio greater the ability of the firm to discharge its obligations on time. 1:1 is considered as an ideal quick ratio. However the peculiar characteristics of the industry to which the firm belongs have also to be seen. The ratio is relatively a more sensitive guide to the liquidity of firm as it excludes inventories and prepaid expenses from current assets.

(iii) **Absolute liquidity ratio.** This ratio establishes a relationship between those current assets which can be converted into cash without the loss of any time. This ratio excludes inventories, prepaid expenses and receivables from the list of current assets. For this ratio only cash and marketable securities are considered.

$$\text{Absolute Liquidity Ratio} = \frac{\text{Cash + Marketable Securitas}}{\text{Current Liabilities}}$$

This ratio is more rigorous test of liquidity as compared to both current ratio and quick ratio. The acceptable norm for this ratio is 0.5:1. Its interpretation is similar to current ratio and quick ratio.

2. Credit available from suppliers –

A firm should receive as such credit from suppliers as is possible since trade credit is almost free. The availability of trade credit is dependent upon the credit worthiness of the firm and its relations with the suppliers. General supply conditions in the market are also important. The availability of credit can be analysed from two angels: (a) quantum of credit and (b) the period of credit. Following ratios are used to analyse the credit available to a firm.

(i) **Credit purchase to total purchases ratio.** This ratio establishes a relationship between credit purchases and total purchases.

$$\text{Credit purchases to total purchases} = \frac{\text{Credit Purchases}}{\text{Total Purchases}} \times 100$$

This ratio should be compared with the industry average since the pattern of purchases is usually dependent upon the industry characteristics.

(ii) **Creditor turnover ratio.** This ratio relates amount of credit purchases to creditors.

$$\text{Creditors Turnover Ratio} = \frac{\text{Net Credit Annual Purchases}}{\text{Average Trade Creditors}}$$

The ratio indicates the velocity with which the creditors are turned over in relation to credit purchases. This ratio should be compared with the industry average. Generally higher this ratio better would be the credit – worthiness of the firm.

(iii) **Average payment period.** The average period represents the average number of days taken by the firm to pay its creditors.

$$\text{Average Payment Period} = \frac{\text{Trade Creditor}}{\text{Net annual Credit Purchases}}$$

A longer payment period implies greater credit period enjoyed by the firm. Therefore longer the credit period, greater the benefits reaped from credit suppliers. But one needs to be careful in interpreting this ratio since a longer credit period may be the result of lesser discount availed or higher price for the purchase made on credit.

3. Credit extended to customers

To remain competitive a firm should extend credit to its customers as per the norms of the industry to which it belongs. If the firm does not extend credit to its customers it is going to suffer in the form of reduced sales. On the other hand a too liberal credit policy is also not good as it will result into reduced profitability due to blocking of funds in receivables and increased bad debts losses. To evaluate the credit policy of the firm generally two ratios debtor turnover ratio and Average collection period are used.

1. **Debtor Turnover Ratio.** Debtor turnover ratio indicates the number of times debtors/receivables are turned over in one year.

$$\text{Debtor Turnover Ratio} = \frac{\text{Annual Credit Sales}}{\text{Average Investment in Trade Debtors}}$$

Generally, the higher the debtor turnover ratio the more efficient is the management of debtors. However a precaution should be exercised while interpreting a very high debtor turnover ratio. This ratio may be high not because of the efficiency in the management of debtors but due to the inability of the firm to sell on credit. To evaluate the ability of a firm in extending credit, its debtor turnover ratio should be compared with that of competitors and industry average.

2. **Average Collection Period.** Average collection period refers to the number of days of a firm has to wait before receivables are converted into cash.

$$\text{Average Collection Period} = \frac{\text{Trade Debtors}}{\text{Annual Credit Sales}} \times 365$$

A short collection period is considered better since it implies quick payments by the debtors. A longer collection period implies need or an efficient management of receivables as its absence adversely affects the liquidity of the firm. Moreover longer the collection period more are the chances of bad debts. A very short collection period less than the industry averages may also not be always good since it may be short not because of efficient management of receivables but due to the inability of the firm to extend credit to its customers.

3. **Efficiency in the utilisation of working capital –**

Working capital is arranged to affect the most profitable use of facilities created through the investment in fixed assets. How effectively the working capital is utilised will be dependent upon the level of operations of the firm and its investment in working capital. It is determined by relating the working capital or its components to the level of turnover achieved by a firm.

Usually four ratios, viz. inventory turnover, debtor turnover, current assets turnover and working capital turnover are used to assess the efficiency of the firm in the utilisation of working capital. We have already discussed the debtor turnover ratio. Let us state remaining three ratios.

(I) Inventory Turnover

$$= \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

(II) Current Assets Turnover

$$= \frac{\text{Cost of goods sold}}{\text{Average investment in current assets}}$$

(III) Working Capital Turnover

$$= \frac{\text{Cost of goods sold}}{\text{Net working capital}}$$

The above mentioned turnover ratios indicate the amount of sales generated by investing one rupee in a particular current assets debtors turnover, inventory turnover or in total current assets current assets turnover or in net working capital working capital turnover in one year. Higher the turnover ratios more efficient is the utilisation or working capital. But very high turnover ratios may also mean lack of resources with the firm to invest in the current assets which is not a good situation for any firm.

4. Levels of investment in working capital

Investment in working capital should neither be excessive nor inadequate. Excessive working capital would lead to decline in the profitability due to blocking of funds in idle assets. On the other hand inadequate working capital would retard the efficiency of working capital in the utilisation of its productive capacity. Following ratios are used to assess the adequacy or otherwise of working capital.

(i) Working capital to sales ratio. This ratio establishes a relationship between the average investment in working capital and the sales generated in one year. It is usually expressed as a percentage.

Working Capital to Sales Ratio

$$= \frac{\text{Average Investment in Working Capital}}{\text{Annual Sales}} \times 100$$

This ratio signifies that for any amount of sales a relative amount of working capital is needed. If any increase in sales in future is contemplated the management must arrange additional funds to make the investment in working capital consistent with the volume of sales.

(ii) Current Assets to Total Assets. This ratio relates investment in current assets to total assets. We have already discussed this ratio while analysing the risk-return characteristics of investment in current assets. This ratio should be compared with the industry average and the similar ratio of the competitors of the firm. A very high current assets to total assets ratio would mean excessive investment in working capital. On the other hand extremely low value of this ratio would be indicative of inadequate investment in current assets.

17.13 SELF-ASSESSMENT QUESTIONS

1. Discuss the concept of working capital. Are the gross and net concepts of working Capital exclusive? Explain.
2. Distinguish between fixed and fluctuating working capitals. Wht is the significance of such distinction in financing working needs of an enterprise?
3. Discuss the significance of working capital management in a business enterprises. What shall be the repercussions if a firm has (a) shortage of working capital and (b) excess working capital?
4. A firm desires to finance its current assets entirely with short-term loans. Do you think this pattern of financing would be in the interest of the firm? Support your answer with cogent arguments.
5. What factors a financial manager would ordinarily take into consideration while estimating working capital needs of his firm?
6. What is an operating cycle and how a close study of the operating cycle is helpful?
7. How would you as a Finance Manager control the need of increased working capital on account of inflationary pressures? Narrate some real-life examples you might have come across.
8. How would you judge the efficiency of the management of working capital in a business enterprise? Explain with the help of hypothetical data.

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UNIT-18 MANAGEMENT OF CASH

Objectives

The objectives of this unit are to acquaint you with the:

- Importance of maintaining adequate liquidity
- Concept of optimum cash balance
- Importance of cash management and the usefulness of cash budgeting as a technique of liquidity planning.

Structure –

18.1 INTRODUCTION

There is no need of cash management if during a year the cash inflows of a firm balance exactly with its cash outflows, but unfortunately this does not normally happens, so a Financial Manager is required to manage the cash flows both inflows and outflows of cash. Cash Inflows depends upon sales forecast and cash outflows depends upon costs etc. But cash management does not end here and the 'Financial Manager' is also required to identify the sources from where cash may be procured.

18.2 WHY IS CASH NEEDED?

Broadly Cash Management has two major objectives:

- To provide cash needed to meet the obligation.
- To Minimize the idle cash held by the firm.

  For this the Financial Manager has to strike an acceptable balance between holding too much cash and too little cash. In fact an efficient CASH MANAGEMENT is to deal specially with:

- The Inflow and Out flow of Cash.
- To see the Cash Inflows with the firm.
- The Cash Balance held by the firm at any point of time by financing deficit or Investing Surplus cash.

Scope of Cash Management –

Cash Management has to look after different aspects of cash while designing cash strategies.

1. **Cash Planning.** It is a technique to plan and control use of cash. It protects the financial condition of the firm by developing a "Projected Cash Statement" from the forecast of expected Cash Inflows and Outflows for a given period.

   Cash planning can help to anticipate the future cash flows and needs of the firm and reduces the possibility of idle cash balances which reduce the firm's profitability and Cash Deficits which may lead to firm's failure.

2. **Cash Forecasts and Budgeting.** There can be short-term and long-term cash forecasts. The short-term cash forecast can be made with the help of cash flow projections i.e. the estimates of likely receipts in the near future and the expected disbursement in that period.

   Likewise the long-term cash forecast is also very important for proper Cash Planning which may be for three, five and more years. In fact short-term and long-term cash forecast may be made with the help of these methods and techniques.

   (A) Receipt and Disbursement Method. Here an estimation of cash receipt and disbursement is made. Generally cash receipts are from:

   - Cash Sales.
   - Sales of fixed Assets.
   - Collection from Debtors.
   - Receipt of Dividend.
   - Income of all other items.

   Likewise cash disbursement may be made for:

   - Cash Purchases.
   - Payment to the Creditors.
   - Purchase of Fixed Assets.
   - For meeting different operating expenses e.g. wages, rates, taxes, Rent, Dividend to shareholders and other daily expenses etc.

It is always desirable that there should always be balance between receipts and disbursement of cash. In case of any short fall in receipt will have to be met from banks or from other sources. Likewise surplus cash may be invested in Risk free marketable securities.

   (B) Adjusted Net Income Method. Some Financial Experts also called this method as "Sources and Uses Approach Method." This method helps in projecting the company's need for cash at some future date and to see whether the company will be able to generate sufficient cash or not. If not then it will have to decide about borrowing or issuing of shares etc. This method helps in keeping a control on working capital and anticipating financial requirements.

18.3 DETERMINING OPTIMUM LEVEL OF CASH BALANCE

A smart and foresighted Finance Manager should maintain only that much amount of Cash Balance as is just sufficient to satisfy transaction requirements as well as to meet precautionary and speculative motives. As carrying of Excess cash balance leads to loss of interest earnings to the firm and thus causes low profitability. On the other hand maintaining a small Cash Balance makes the firm's liquidity position weak. So there must be suitable level of cash holdings. Financial Experts here designed Cash Management Models to decide the optimal level of cash balance. These are some of the important models:

I. BAUMOL MODEL

William J. Baumol suggested this model. As per this model optimum cash level is that level of cash where the carrying costs and transactions costs are the minimum.

Carrying cost refers to the cost of hold cash namely, the interest foregone on marketable securities. They may also be termed as opportunity cost of keeping cash balance.

Transaction cost refers to the cost involved in getting the marketable securities converted into cash. This happens when firm falls short of cash and has to sell the securities resulting in clerical brokerage and registration and other costs.

In fact there is an inverse relationship between the two costs. When one increase, the other decrease. Hence optimum cash level will be at that point where these two costs are equal.

Formula for determining Optimum Cash Balance

$$C = \sqrt{\frac{2A \times F}{O}}$$

Whereas = C = Optimum Cash Balance

A = Annual or Monthly cash disbursement

F = Fixed Costs per Transaction

O = Opportunity cost of one rupee p.a.

For Example:

Monthly cash requirement	= Rs. 5,00,000
Fixed cost per transaction	= Rs. 25
Interest rate on Marketable Securities	= 15 p.a.

SOLUTION :

$$C = \sqrt{\frac{2A \times F}{O}}$$

$$= \frac{2 \times 5{,}00{,}000 \times 25}{.15} = Rs.\,12{,}910$$

Assumptions of Bamoul Model.

- The firm is able to forecast cash need with certainty.
- The firm's cash payments occur uniformly over a period of time.
- The opportunity cost of holding cash is known it does not change.
- The firm will spend some transaction cost when it converts securities to cash.

II. Miller Orr-Model –

This model helps in determining the optimum level of cash when the demand for cash is not steady and cannot be known in advance. It deals with cash management problem under the assumption of random cash flows by laying down control limits for Cash Balances.

These limits consist of an upper limit (h), lower limit (o) and return point (Z). When cash balance reaches the upper limit a transfer of cash equal to "h-Z" is effected to marketable securities. When it touches the lower limit, a transfer equal to "Z-o" from marketable securities to cash is made. No transaction between cash and marketable securities to cash is made during the period when the cash balance stays between these high and low limits.

From the analysis of the chart it can be seen that when cash balance reaches the upper limit, and amount equal to "h-Z" is invested in the marketable securities and Cash Balance comes down to 'Z' level. When cash balance touches the lower limit marketable securities of the value of "Z-o" are sold and cash balance goes upto 'Z' level.

The upper and lower limits are set on the basis of opportunity cost of holding cash, degree of likely fluctuation in cash balance and the fixed costs associated with a securities transaction. The optimal value of 'Z', the return point for securities transaction can be determined by the formula

$$Z = \sqrt{\frac{3F + \sigma^2}{4i}}$$

Whereas

F = Fixed cost associated with a security transaction.

σ = Variance of daily net cash flows.

i = Interest rate per day on marketable securities.

Motives For Holding Cash –

The firm need to hold cash may be attributed to the following motives:

- **The Transaction Motives**
- **The Precautionary Motives**
- **The Speculative Motives.**

1. **Transaction Motives.** The firm needs cash for making transaction in the day to day operation like purchase of raw material, taxes, dividend etc. But there is no perfect match occurs between cash receipt and payment.

   Sometimes cash receipt exceeds payment or vice-versa. If more cash is needed for payment than receipt, it may be raised through Bank Overdraft. On the other hand if there are more cash receipt than payment. It may be spent on marketable securities. The maturity of securities may be adjusted to payment in future such as interest, dividend etc.

2. **Precautionary Motive.** The precautionary motive is the need to hold cash to meet contingencies in the future. It provides a buffer to meet unexpected contingencies. The precautionary amount of cash depends upon the predictability of cash flow. If cash flow can be predicted with accuracy less cash will be maintained for emergency. The precautionary balance may be kept in cash and Marketable Securities. The unexpected cash need at short notice may result of

   (i) Flood, strikes, and failure of important customer.

   (ii) Unexpected slow down in collection of Bill receivable.

   (iii) Cancellation of some order.

   (iv) Sharp increase in cost of Raw Material.

2. **Speculative Motive.** The speculative motive relates to holding cash for investing in profitable opportunities as and when they arise. Because speculative opportunities do not care in a regular manner e.g. If the prices of raw material may fall temporary and such opportunities can be availed of it if a firm has cash balance with it.

Check Your Progress

Q1. What is carrying cost?

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Q2. What are the assumptions of Bamoul Model?

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Q3. State three motives for holding cash.

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18.4 CASH MANAGEMENT

Strategies of Cash Management: The efficient management of cash employ the following strategies:

- Pay Accounts payable as late as possible without damaging the firm's credit rating but take advantage of any favourable cash discount.
- Turn over Inventory as quickly as possible avoiding stock outs that might result in shutting down the production line or a loss of sale.
- Collect Account receivable as quickly as possible without losing future sale because of high Pressure Collection techniques. Cash discount if they are economically, Justifiable may be used to accomplish these objectives.

Steps in Cash Management –

An effective management of cash balance requires the following steps:

Step – I Cash Planning that is the Projection of Cash balance requirement

↓

Step – II Toning up of the Procedure of Cash inflow & outflow

↓

Step – III Determination of the ratio between cash and near cash asset.

So Management of Cash is also important because it is difficult to predict cash flow accurately and there is no perfect confidence between Inflow and outflow.

Facets of Cash Management –

The firm should need strategies regarding the following facets of Cash Management.

(1) Cash Planning: Cash Planning is a technique to plan and control the use of cash. It protects the financial condition of the firm by developing a projected cash statement from a forecast of expected cash inflow and outflow for a given period. So Cash Planning may be done as daily, weekly or monthly basis. As firm grows and business operation becomes complex, Cash Planning becomes inevitable for continuing success.

18.5 CASH FORECASTING & BUDGETING

Cash Budget is most important device for the control of receipt and payment of cash. Cash budget is a summary statement of company expected cash inflow and outflow over a projected time period. This information helps the Financial Manager to determine the future cash need of the firm.

Cash forecast are needed to prepare cash budget. It may be done long term or short term basis. The short term forecast can be made with the help of cash flow projections. The long term forecasts are essential for proper cash planning.

I. Short term forecast: Includes

- To determine operating cash requirement.
- To anticipate short term financing.
- To manage investment of surplus cash.

The short term forecast help in determining the cash requirement for a pre-determined period to run a business. If the cash requirement are not determined, it would not be possible for the management how much cash balance is to be kept in mind ; to what extent bank financing be depend upon and whether surplus funds would be available to invest in Marketable Securities.

With the help of short term forecast, it will not be difficult for the financial manager to negotiate short term financing arrangement with banks. The short term forecast is to help in managing the Investment of Surplus Cash in marketable securities.

Short term forecast may be made with the help of following methods.

(1) Receipt and Payment Method.

(2) Adjusted Net Income Method.

(1) Receipt and Payment Method: The Receipt and Payment method is generally employed to forecast limited period such as week or months. In this method receipt and payment of cash are estimated. The cash receipt includes cash sale, collection from debtors, Sale of Fixed Asset, Other Income etc. and Payment may be made for Cash Purchase, Purchase of Fixed Asset, Rent, rates, taxes, dividend to share holder etc. Any shortage in Receipt will have to met from bank and surplus may be invested in risk free marketable securities. Consider an example as under:

Prepare a cash budget for the month of May, June, July 2013 on the following information.

Months	Credit Sale	Credit Purchase	Wages	Manufacturing expense	Office expense	Selling expense
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
March	60,000	36,000	9,000	4,000	2,000	4,000
April	62,000	38,000	8,000	3,000	1,500	5,000
May	64,000	33,000	10,000	4,500	2,500	4,500
June	58,000	35,000	8,500	3,500	2,000	3,500
July	56,000	39,000	9,500	4,000	1,000	4,500
August	60,000	34,000	8,000	3,000	1,500	4,500

(1) Cash balance on 1 May 2013 Rs. 8,000.

(2) Plant costing Rs. 16,000 is due for delivery in July, payable 10% on delivery and balance after 3 months.

(3) Advance Tax of Rs. 8,000 each is payable in March and June.

(4) Period of credit allowed (i) by supplier – Two months and (ii) to customer – One Month.

(5) Lag in Payment of manufacturing expenses – 1/2 month.

(6) Lag in Payment of Office and Selling expenses – One month.

SOLUTION

CASH BUDGET

Particulars	**May 2013**	**June 2013**	**July 2013**
	Rs.	Rs.	Rs.
Opening Balance	8,000	13,750	12,250
<u>**Cash Receipt**</u> :			
Debtors (Cr. Sale)	62,000	64,000	58,000
	70,000	**77,750**	**70,250**

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<u>Cash Payment</u> :			
Creditors (Cr. Purchase)	36,000	38,000	33,000
Wages	10,000	8,500	9,500
Manufacturing expenses	3,750	40,00	3,750
Office expenses	1,500	2,500	2,000
Selling expenses	5,00	4,500	3,500
Plant-Payment in delivery	-	-	1,600
Advance Tax	-	8,000	-
Total			
Closing balance			
	56,250	**65,500**	**53,350**
	13,750	**12,250**	**16,900**

Advantage :

(1) It is a sound tool of managing daily cash operation.

(2) Help in determining expected cash flow.

Disadvantage :

(1) It reliability is reduced due to uncertainty of cash forecast e.g. collection may be delayed.

(2) It fails to highlights the significant movement in the Working Capital Item.

(2) **Adjusted New Income Method:** This method is sometimes called sources and uses approach. The adjusted net Income method helps in projecting the company's need for cash at future date and to see whether the company will be able to generate funds internally; if not how much will have to be borrowed or issuing shares. For this purpose, projected Cash Flow Statement will be prepared.

Advantage :

- This help in keeping control on working capital.
- It helps in anticipating a firm's financial requirement.

Disadvantage :

- It fails to trace cash flow.
- Its utility in controlling daily cash operation is limited.

Long term forecasting : Long term forecast may be made for two, three or five years. These forecast all prepared to give an idea of financial requirement in the distant future. The long term forecast helps to evaluate proposed capital project and improve Corporate Planning.

18.6 SELF-ASSESSMENT QUESTIONS

1. What are the motivations behind holding cash? Explain briefly.

2. "In managing cash the Finance Manager faces the problem of compromising the conflicting goals of liquidity and profitability". Comment. What strategy should the Finance Managers develop to solve this problem?

3. What is optimum cash balance and how can it be arrived at?

4. What is cash cycle and how can it be reduced?

5. If a firm estimates that it will have some idle cash balances from time to time, what advice would you render to the firm?

6. What is cash budget and in what way can it be helpful in liquidity planning?

7. How would you judge the efficiency of cash management of a company?

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UNIT 19 CAPITAL STRUCTURE

Objective

The objectives of this unit are to:

- Explain the importance of decisions regarding capital structure
- Identify the factors that have a bearing on determining the capital structure
- Explain the concept of a appropriate capital structure

Structure –

19.1 INTRODUCTION

Capital structure planning is one of the basic financial decisions directed towards the achievement of maximization of shareholders' wealth. Capital structure refers to the makeup of the capitalization long term capital of a firm. It is the proportion existing between various sources of long term capital such as equity capital, preference capital and debentures raised in a firm.

19.2 WHAT IS CAPITAL STRUCTURE

The term Capital Structure is used to represent the proportionate relationship between debt and equity. In the business, capital comes from many forms- long and short term debts, secured and unsecured debts, preference shares, equity shares, retained earnings and other things. To decide upon the ratio of these securities in the total capitalisation is to decide capital structure. Because the funds are inadequate the business suffers but if the funds are not properly managed the whole of the organisation suffers. The decision relating to capital structure is very much important. In short, capital structure means financing mix. There may be following patterns of capital structure.

- Equity shares only
- Equity shares & Preference shares
- Equity shares & Debentures
- Equity, preference shares & Debenture etc.

Whatever the mix of capital structure depends upon the nature and circumstance of business. But the two basic principles must be considered first, the ratio of funded debt to equity should always be geared to the degree of stability of earning. Second, the capital structure must be balanced with adequate equity cushion to absorb the shocks of the business cycle and to afford flexibility. Capital structure decision affects the shareholder's return & risk. Due to this the market value of shares may be affected by the capital structure decision.

Definitions –

"Capital structure includes long-term debts, preference shares, capital reserves and surpluses etc."

- I.M. Pandey

"The term capital structure is frequently used to indicate the long-term sources of funds employed in a business enterprise."

- R.H. Wassel

"Capital Structure of a capital refers to the composition or make up of its capitalisation and it includes all long term capital resources, viz., loans reserves, shares and bonds."

- Gerstenberg

"Capital structure is the combination of debt and equity securities the comprises a firm's financing of its Assets."

- John. T. Hampton

Capital structure is concerned with the decision making about the mix of debt and equity securities. The financial manager has to determine how much will be the equity capital representing the funds owned by the equity shareholders in the enterprise? How much will be the preference capital? How much capital would be raised through the issue of debt? In corporate enterprises, some combinations of different sources of capital go well together, other do not. Therefore considerable attention is needed for the designing of the capital structure of a firm.

Importance of capital structure –

The importance of capital structures lies in the fact that different sources of capital have different risk-return characteristics and certain sources are more costly but lesser risky whereas other are lesser costly but more risky. For example equity is the least risky capital as it is not to be returned to the shareholders during the life time of the company and it does not involve fixed commitment regarding payment of dividend but it is the most costlier source of capital as the return expected by the equity shareholders is higher than the return expected by other investors.

On the other hand debt is most risky capital (as it involves fixed commitment for the payment of interest and the creditor can go to the court to recover the principal and interest thereon) but least costly (as rate of interest is usually lower than the rate of dividend and interest is paid out of before tax profits). Preference capital lies between equity and debt in terms of risk return considerations. It is moderately risky and costly. It is also known as a hybrid security as it possesses certain characteristics of debt and certain characteristics of equity.

Having regard to the difference in the risk return characteristics of different sources of capital, capital structure decision is important in financial decision. Capital structure decision is important due to the following reasons:

- Capital structure affects the financial risk assumed by the firm.
- Capital structure affects the firm's cost of capital.
- Capital structure affects the value of firm by affecting either its expected earnings or the cost of capital or both.
- Capital structure decision of a firm represents the attitude of its management towards risk and return.

Optimal Capital Structure

The term capital structure refers to the mix of long term funds, such as equity capital, retained earnings, preference share capital, debentures and long term debt. Theoretically, a firm should make an effort to design an optimum capital structure. The optimal capital structure is one when the total market value of the firm and the market value per share is maximum. The value will be maximised when the marginal real cost of each source of funds is same and the average cost of capital is the lowest. In theory one can speak of an optimum capital structure but in actual practice designing of an optimum capital structure is a formidable task. There are significant differences among industries and among companies in the same industry in terms of capital structure.

There are a number of factors, both quantitative and qualitative which have a bearing on the capital structure of a firm. These factors are highly complex and cannot be fit into a theoretical framework. Moreover personal judgment of the person making a capital structure decision plays a crucial role.

Consequently, two similar companies may have different capital structures. Therefore from the operational standpoint what should be done is to design an appropriate capital structure given the facts of a particular situation. In the present chapter and efforts has been made to examine the factors affecting the appropriate mix of debt and equity in the capital structure of a firm.

19.3 FEATURES OF AN APPROPRIATE CAPITAL STRUCTURE

An appropriate capital structure is one which is most advantageous to the company. This can be designed by taking care of all relevant factors having a bearing on the company's capital structure. Generally capital structure is designed keeping in view the interests of the shareholders and the financial requirements of the company. From shareholder's point of view the capital structure maximising the market value of the shares would be best.

From company's point of view the capital structure providing adequate funds at the lowest cost and lowest risk would be the best. While designing capital structure, the interest of other groups like, customers, employees, creditors, society and government should also be given due consideration. Depending upon the relative importance of different factors an appropriate capital structure differs from one company to another. However some general features of an appropriate or sound capital structure are as follows:

- **Profitability –** Capital structure should provide for maximum profitability. Maximum use of debt should be made at the lowest cost within the given constraints.
- **Solvency –** Capital structure should ensure the solvency of a firm. Excessive use of debt increases the risk and thus threatens the solvency of a firm. Debt should be used to the extent it does not poses significant risk. Beyond this the use of debt should be avoided.
- **Flexibility.** A capital structure should be one in which appropriate change can be made in case of need. It should be possible for a company to change its capital structure at minimum cost and delay if warranted by a changed situation. Use of debt has more flexibility in the capital as compared to use of equity as debt can be redeemed and reissued in case of need but equity cannot be redeemed during the life time of a company.
- **Debt Bearing Capacity.** Capital structure should take care of debt bearing capacity of a firm, and this capacity should not be exceeded. Debt capacity of a firm depends upon its operating earnings and cash inflows in future.
- **Control.** Capital structure should involve minimum possible loss of control. For the purpose of retaining control of the company in the hands of present board of directors, the issue of debt should be preferred to the issue of equity capital to fulfill further financial needs of the company.
- **Avoidance of Unnecessary Restrictions.** The capital structure should involve minimum possible restrictions on the company. From this angle term loans from financial institutions should be avoided as these institutions impose a number of restrictions while lending money.

Check Your Progress

Q1. Define optimal capital structure.

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Q2. State three important features of an appropriate capital structure.

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19.4 DETERMINANTS OF CAPITAL STRUCTURE

As stated earlier, capital structure of a firm depends upon a large number of factors. These factors differ in intensity from one industry to another in the same industry. Consequently the capital structure decision of a firm is highly individualistic in nature. Therefore while deciding the design of capital structure of a company its financial manager should give due consideration to relevant factors affecting such decision. The factors affecting the capital structure are discussed below:

- **Cost of Capital.** Cost of different sources of capital is an important consideration in the design of the capital structure. Different sources of capital should be combined in such a manner so that the overall cost of capital is lowest. Debt is cheaper source of funds as compared to preference share capital and equity capital due to (i) rate of interest on debt is lower than the rate of dividend on preference or equity capital and (ii) interest payment on debt is tax deductable whereas dividend on preference and equity capital is payable out of post tax profits. Cost of equity capital is highest as the firm has to pay high rate of dividend to satisfy the equity shareholders' expectations of higher return on their investment. The cost of preference share capital lies between the cost of debt and equity capital. Thus from the point of view of cost of capital debt is preferable to equity.

- **Risk.** Capital structure of a firm should involve minimum possible risk. From risk point of view, equity capital is the least risky source of funds as there is no fixed obligation to pay dividend on equity capital and it has not to be returned to the equity shareholders except at the winding up of the company and that too after paying all obligations.

  On the other hand debt is most risky source of funds due to

  - fixed amount of interest irrespective of operating income of the company has to be paid on debt,
  - In case of default in interest payment or repayment of loan the creditor can ask for the winding up of the company. Preference share capital involves medium degree of risk, it is more risky than equity but less risky than debt. Thus the riskiness of different sources of capital should be given due consideration so that the overall financial risk is within risk bearing capacity of the firm.

- **Growth and Stability of Sale:** The nature and pattern of sales has an important influence on the capital structure of a firm. If the sales of a company are fairly stable and are expected to remain so in future the firm can use more debt in its capital structure. Stability of sales ensures stability in operating income of a firm. Thus firm can meet its fixed commitments of interest and repayment of debt without any difficulty. Generally greater is the rate of growth in sales, more is the ability of a firm to use more debt. On the other hand if the sales of a firm are highly fluctuating, it is advisable to use more equity then debt in the capital structure.

- **Ability to Serve Debt.** Ability to serve debt will determine the extent to which debt is raised by a firm. A firm which is able to generate stable and larger cash inflows from operations can employ more debt than a firm whose cash inflows are meager. Therefore a firm before raising additional debt should estimate its future cash inflows. Generally two ratios (i) interest coverage ratio and (ii) cash to debt service ratio are computed to measure the debt service ability of a firm.
- **Age and Size of a Firm.** Age and size of a firm have a distinct bearing on its capital structure. For the firms in their early years of establishment, equity capital and debt raised from outside are the principal sources of funds. As a firm grows in size the rate of internal expansion declines and retained earnings replaces outside debt. Small companies have to mainly depend upon owned capital due to lack of access to the capital market. On the other hand a large company can raise long term loans and issue debentures and equity capital to the public very easily.
- **Flexibility.** Flexibility as explained earlier is an important requirement of an appropriate capital structure. Capital structure should be such as can be modified to suit the changing conditions. The firm should have the ability to replace one form of financing with another. From flexibility point of view debt is the best source of financing as it can be redeemed and reissued in case of need. However there is no such flexibility with equity capital. Equity capital once issued cannot be called back during the life time of the company. Like debt redeemable preference shares capital is also better than equity capital in terms of flexibility.
- **Operational Characteristics:** Businesses differ in their operational characteristics and need for funds. Manufacturing firms require heavy investment in fixed assets. Fixed costs constitute a major proportion of total costs in such firms and thus these firms have more risk. Therefore these firms should prefer equity capital to debt to keep the overall risk within manageable limits. On the other hand trading firms do not have to invest much in fixed assets. These firms mainly operate with current assets. Fixed costs of these firms are comparatively lesser than that of manufacturing firms. These firms assume lesser risk due to lower amount of fixed costs. Thus, these firms can afford to use more of debt capital.
- **Purpose of Financing.** Purpose of financing has a significant impact on the capital structure. If the funds are required for a productive purpose such as expansion of business the firm can issue debentures as interest can be paid out of the funds generated from investment. On the other hand if the funds are

needed for an unproductive purpose like meeting social obligations, the firm should issue equity capital.

- **Period of Finance.** For how long funds are needed is an important question which should be taken care of while designing the capital structure of a firm? If the funds are needed permanently or for a long period issue of equity shares, preference shares or irredeemable debentures should be preferred; on the other hand if the funds are needed for a medium term the issue of redeemable preference shares or redeemable debentures should be preferred.

- **Capital Market Conditions.** Conditions prevailing in the capital market have a bearing on the capital structure of a company. If the conditions are favourable, the company can issue different kinds of securities like equity shares, preference share and debentures in the market to raise the necessary capital. On the other hand if the conditions are depressed company cannot go for public issue of its securities. In such a situation it will have to tie up with financial institutions to fulfill its funds requirement.

- **Cost of Floatation.** Cost of floatation of different securities should also be considered while raising funds. The cost of floatation included commission and brokerage payable to brokers, bankers and other intermediaries and expenses of printing of promotional materials, preparation of prospectus etc. Generally cost of floating a debt is lower than that of equity. Thus from floatation costs point of view debt is preferable to equity.

- **Requirements of Investors.** Requirement of investors are also taken care of while designing capital structure. Capital structure of a company should cater to the requirement of institutional and other investors. Institutional investors require a steady return on their investment. For them such securities should be issued which carry a stable return.

  Investors can be classified on the basis of risk attitude into two categories; (i) Aggressive and (ii) Conservative. Aggressive investors are prepared to assume higher risk for higher return. For them issues of equity shares must be preferred. On the other hand conservative investors are not prepared to assume higher risk. They require a stable return on their investment. For these investors the issue of debt or preference shares is preferred.

- **Attitude of Management.** Attitude of management toward risk and return has a distinct bearing on the capital structure of a company. Aggressive management is prepared to assume higher risk for higher return. Therefore they will depend upon more on debt than on equity. On the other hand conservative managements are satisfied with lower return but are disinterested in assuming risk. They will prefer more equity than debt in their capital structure.

- **Corporate Tax Rate.** Presence of corporate taxes makes debt as an attractive source of funds as compared to equity and preference share capital. This is because the interest payments on debt are tax deductible. Higher the tax rate greater the advantage of using debt capital as compared to equity or preference capital.
- **Legal and other Requirement.** Lastly, the capital structure of a company should also take care of relevant provisions of various laws framed by the government. It should also take care of norms set by the financial institutions, the Securities and Exchange Board of India (SEBI) and stock exchanges.

19.5 SELF-ASSESSMENT QUESTIONS

1. What is capital structure? Explain the importance of capital structure and planning?

2. What are the features of an appropriate capital structure?

3. What are the determinants of capital structure? Explain briefly.

4. Do you think that different factors affecting capital structure decision will be viewed differently by different companies? Support your answer with suitable example.

5. Make a comparative assessment of different types of securities from the point of view of capital structuring. Under what conditions different types of securities would be considered more suitable?

6. Write notes on the following:

  a. Trading on equity

  b. Cost of capital

  c. Flexibility in capital structure

  d. Closely held company

SUGGESTED READING

- Gupta, Shashi K., Sharma, R.K, Management Accounting, Kalyani Publishers, New Delhi,
- Lal, Jawahar, Advanced Management Accounting, S.Chand & Co.Pvt. Ltd., New Delhi,
- Maheshwari, S.N., Financial and Management Accounting, Sultan Chand & Sons, New Delhi,

UNIT 20 DIVIDEND DECISION

Objectives

The objectives of this unit are:

- To acquaint you with the meaning, types and purpose of divided
- To highlight the various factors which influence the determination of dividend policy

Structure –

20.1 INTRODUCTION

The term dividend refers to the reward paid to shareholders of a joint stock company. It is paid in cash out of profits after depreciation and tax requirement have been met. In addition the distribution of debentures and deposit certificates without consideration and advances and loans by a company to its shareholders under specific circumstances are also deemed to be dividend under section 2(22) of the Indian Income-Tax Act 1961.

20.2 FORMS OF DIVIDENDS

Dividends can be classified on the basis of four criteria:

- **Type of shares held by the shareholders ;**
- **Source of dividend ;**
- **Timing of payment and**
- **Form in which dividend is paid.**

Lets us describe the meaning of different kinds of dividend falling in these classes.

Types of shares hold

On the basis of type of share, dividend can be classified into equity dividend and preference dividend.

Sources of Dividends

Dividend can be paid either out of revenue profits or out of capital profits of a company.

(a) Dividend out of Revenue Profits. This type of dividend refers to the payment of dividend out of either.

- Current profits of the company or
- Its accumulated profits of past years and
- Profits from subsidiary companies.

(b) Dividend out of Capital Profits. Capital profits arise on the sale of fixed assets, mergers, purchase of the shares of subsidiaries, issue of shares at a premium, revaluation of assets and redemption of long term liabilities. Generally a company is not allowed to pay dividend out of capital profits. Such dividend can be paid only if the following conditions are satisfied :

- Memorandum and Articles of association of the company contain no restriction on such payment.
- Revaluation of assets results in a surplus.
- Revaluation of assets does not affect the interest of debenture holders and creditors.
- Capital profit/surplus is realised in cash.

Timing of Payment of Dividend –

On the basis of the medium used for the distribution of dividend there can be different kinds of dividend: cash dividend, stock dividend, script dividend, property dividend, bond dividend etc.

- **Cash Dividend.** Cash dividend is paid in cash. This is the usual form of payment of dividend. Cash reduces the net-worth of the company therefore it requires careful planning on the part of the management. As a rule cash dividend is paid out of the cash generated from operations. However some management may pay cash dividends out of borrowed money due to their unimaginative planning. Such type of situation should be avoided since borrowed money is meant for productive uses and not for the payment of dividend.

Section 205(3) of the Companies Act 1956 declares that no dividend shall be paid except in cash. However section 205(5) of the companies Act permits the payment of dividend by cheques or warrants sent through the post direct to the registered addresses of the shareholders entitled there to, or to such persons and to such addresses as the shareholders may in writing direct. Dividend once declared has to be paid within 42 days. Every director of the company who is knowingly a party to the non-payment of dividend in time is punishable.

- **Stock Dividend.** Stock dividend is also known as issue of bonus shares. Stock dividend is paid in the form of additional shares in the company. These shares may be preference shares or equity shares. The Shareholders have a complete freedom in the matter of dealing with such shares in any manner. They can sell such shares or these can be retained by them.

Stock dividend i.e., issuing bonus shares is the capitalisation of profits and not the distribution of profits. Stock dividend has no effect on the assets of the company as it does not involve any payment in cash or kind. However stock dividend increases the number of shares of the company in the hands of the shareholders. Therefore the management of the company deciding to issue bonus shares must make sure that previous rate of cash dividend per share would be maintained on increased number of shares after the bonus issues.

Bonus shares are usually issued out of accumulated profits although there is no bar on the issue of such shares out of current profits. Bonus shares can also be issued out of capital profits provided such profits have been earned in cash. Issuing bonus shares out of reserves created for specific purpose, share premium received in kind and reserve created on account of revaluation of assets is not permitted. Share premium received in cash and capital redemption reserve arising on the occasion or redemption of preference shares under sections 78(2) and 80(5) respectively of the Companies Act, 1956 can be used for issuing bonus shares.

- **Script Dividend.** Script dividend is paid by a company to its shareholders in the form of shares and debentures of other companies. It can also the given in the form of promissory note promising the payment of dividend in cash at a future date. The note is called dividend certificate or script. Such dividend scripts are issued by a company when its position for paying dividend in cash is not sound. However dividend script can be used as a security to raise loans from banks.

  The companies (Amendment) Act 1960 strictly prohibits the distributing of script dividend by companies in India. This was done with a view to stop the practice of some companies of passing on of non-remunerative shares and debentures held by them in other companies to their shareholders in lieu of dividends in cash.

- **Property Dividend.** Property dividend is paid in the form of property of the company other than cash. It is paid under unusual circumstances, like reorganisation of the company. Such event is non-recurring in nature and may be once in the life time of the company. Property dividend is distributed by a company in the form of property no more needed by it, securities of its subsidiary companies or the securities of its parent company.

- **Bond Dividend.** Bond dividend involves issue of bonds (debentures) in lieu of cash dividend. The debentures so issued bear interest and are redeemable after a prescribed period. Bond dividend is distributed by a company when it is facing the problem of liquidity and it needs to conserve cash. In India, Companies Act 1956 does not allow the distribution of bond dividend.

- **Composite Dividend.** Here the dividend is paid purely in the form of cash and partly in the form of property.
- **Optional Dividend.** Instead of giving composite dividend company can give option to shareholder to take dividend in cash or in property.
- **Special Dividend.** When the director of company do not want to change dividend separately when the company have good cash and reserve. This dividend is given with the regular dividend but separately.

20.3 DIVIDEND POLICY

Dividend policy determine what portion of earning will be paid to shareholder and that what portion will be retained in business to finance long term growth and future contingencies.

According to **Weston & Bringham,** "Dividend Policy determines the division of earning between payment to shareholder and retained earnings."

Dividend policy refers to the following of a consistent approach to the decision involving distribution versus retention of profits rather than making the decision on a purely ad-hoc basic from year to year. It also takes care of the timing and magnitude of the payment of dividend. Formulating a suitable dividend policy requires a considerable amount of thinking on the part of management as it influences growth of the company and price of equity shares in the market.

Dividend policy decision is one of the three interrelated decisions in the financial management of a company; the other two being investment and financing. Investment decision is concerned with the selection of assets (both fixed as well as current) for the company. Financing decision involves selection of a suitable capital structure of financing mix for the company. It relates to making of a decision regarding the proportion of different sources of finance in the total financial requirement of a company.

The dividend policy decision influences the financing mix decision of the company through retained earnings. Given the amount of profits retained in the business the financing decision would relate to the amount of funds to be raised from external sources which would in turn depend upon the investment requirement of the company.

For a given amount of investment requirements, it can be said that the larger the amount of retained earning the lesser the need for external financing. The need for external financing is also dependent upon the stage of growth of a company. Companies which lack growth opportunities, even with smaller amounts of retained earning high pay-out ratio may not require much of external financing. The above discussion brings home the fact that the three financial decisions, Investment, Financing and Dividend are all dependent upon each other. Therefore these decisions should be taken jointly so that an optional combination of these decisions aiming at the maximisation of the wealth of the owners (shareholders) is arrived at.

Alternative Dividend Policies

There could be many alternative dividend policies which an imaginative financial manager could establish. Following are the three important policy options available for distributing dividend:

1. **Stable Dividend per Share Policy.** This kind of dividend policy aims at maintaining relatively stable amount of dividend per share every year irrespective of the quantum of earnings. Under stable dividend per share policy, the stream of dividend is fairly constant. However there can be increase or decrease in the amount of dividend per share provided the increase or decrease in the level of earnings is persistent.

   The objective of stable dividend policy is to ensure a certain minimum rate of return on the investment of shareholders irrespective of the level of earnings of the company. Selection of a stable dividend per share policy will result into fluctuations in the payout ratio. Under this policy the payout ratio would be higher when the level of earnings is lower and vice versa. This is because the company needs to pay proportionately higher amount of reduced current earnings and proportionately lower amount of increased current earnings to pay the fixed rate of dividend per share.

2. **Constant payout Ratio Policy.** A constant payout ratio policy involves the payment of a fixed proportion of current earnings as dividend. Under this policy dividend per share will fluctuate with earnings per share.

3. **Smoothed Residual Dividend Policy.** The residual dividend policy discussed above is based on the promise that the shareholders prefers the companies to retain earnings rather than pay them out in the form of dividends as long as there is the availability of investment opportunities promising higher return than the return shareholders can obtain elsewhere on investment of similar risk. However in practice, the investors are generally averse to fluctuating dividends for various reasons. Therefore, there is a need to modify the residual dividend policy resulting into some kind of stability in dividend payment. This modification is provided by smoothed dividend policy. Under this policy the dividends are varied gradually over a period of time. The level of dividend is so set that over the planning period the amount of dividend payments is equal to the total of earnings less the projected investments.

Regular Stock Dividend Policy. Under this policy, the company does not pay dividend in cash but the dividends are paid in the form of stock called bonus share. The company adopts such policy because :

- When the firm intends to finance its modernisation and expansion with its own generated earning.

- When the firm has shortage of funds despite its high earning. If the firm follows this policy for a longer period then its EPS will decline sharply.

Irregular Dividend Policy. According to this policy, the firm does not pay fix dividend per share regularly. **The amount of dividend changes with the change in the level of Income.** For example large earnings mean higher dividend and vice-versa. The company may follow this policy due to uncertainty of earnings, lack of liquid resources etc.

20.4 ROLE OF FINANCE MANAGER

Disposal of earnings (withholding the earnings in the business for reinvestment or distribution among the shareholder) is one of the major issues in financial management. Disposal of earnings should be done by striking a proper balance between the shareholders' expectations for higher dividends and investment needs of the company. The financial manager of a company plays an important role by advising the management (board of directors) in the formulation of the dividend policy of the company. He must evaluate the effects of alternate dividend decisions on the value of the company and the wealth of the shareholders.

In case of growing companies, it is in the interest of the shareholders that the payout ratio is minimum (retaining earnings in the business rather than paying them out as dividends). In such cases it is advisable to capitalise earnings (issuing bonus shares) rather than paying out cash dividend. This point can be explained with the help of an example. Let us take the case of xyz Ltd. which is a growing company having favourable reinvestment opportunities. Its current earnings after tax are Rs. 2,00,000. It has decided to distribute 100 percent of its earnings as dividend is stated below

		Rs.
1.	Amount of dividend paid	2,00,000
2.	Less Income tax (assuming all the shareholders are in the tax slab of 40%)	80,000
3.	Net Amount available to shareholders for reinvestment (1 minus 2)	1,20,000
4.	Less reinvestment cost (Commission and brokage @6%)	7,200
5.	Net reinvestment of the shareholders	1,12,800

The above illustration bring home the fact that the amount of reinvestment is larger in case earning are retained in the business as compared to reinvestment if the dividends are paid. If dividends are not paid, the entire Rs. 2,00,000 of the earnings is available to the company for reinvestment in the business. On the other hand if earnings are used to pay dividends, the amount of reinvestment in Rs. 1,12,800 only. From the above facts it can be stated that if the company is having sufficient reinvestment opportunities and the shareholders are prepared to reinvest their earnings it is in the interest of both shareholders and the company that maximum possible proportion of earnings is retained in the business.

The financial manager should also bear in mind that the dividend decision of the company has an information value. If reflects the financial soundness of the company. Shareholders usually have preference for larger and stable amounts of dividend. If the track-record of a company in the payment of dividend is good its shares command higher market prices. The financial manager should also view the conditions prevalent in current market. He should evaluate the cost of retained earnings in comparison to the alternate sources of financing. There may be occasions when financing through retained earnings is costlier as compared to other sources. Therefore the financial manager should keep a close look at the developments in the capital market and the tax policies of the government in additions to the investment needs of the company while advising the Board of Directors in the formulation of dividend policy.

Check Your Progress

Q1. What is stock dividend?

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Q2. Define constant payout ratio policy.

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Q3. Differentiate between composite dividend and optional dividend.

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20.5 BOARD OF DIRECTORS AND DIVIDEND POLICY

The power to make decision about the payment of dividend is vested in the Board of Directors of a company. The rate of dividend is also determined by the Board of Directors. Although the rate and mode of payment is finally approved by the shareholders in the Annual General Meeting of the company, the shareholders do not enjoy the power to increase the rate of dividend as proposed by the board of directors. If the directors of a company refuse to pay any dividend, the shareholders can not insist on the payment of dividends even if the profits are very large.

While determining the amount of profits to be paid as dividend the Board Of Directors has to strike a balance between the conflicting objectives of payment of a fair return on the investment of shareholders as dividends and ensuring the growth of the company through the reinvestment of internally generated funds (i.e., by not declaring dividends). The payment of return to shareholders requires that the rate of dividend should be as high as possible whereas growth objective of the company requires withholding of as much of the profits as it possible. Since these two objectives are conflicting, the determination of payout ratio (i.e. the percentage of profits to be distributed as dividends) requires lot of brainstorming, thinking and sound judgment.

The Board of Directors of a company can exercise discretion with regard to the payment of dividend to the shareholders. However this discretion can be exercised subject to the restrictions dictated by law or prudence. Therefore, it is necessary to comprehend the provisions of law governing the payment of dividend.

Legal Aspects of Dividend –

In India, the amount of dividend which can be legally distributed is mainly governed by the Companies Act 1956. In addition, judicial pronouncements in leading cases and contractual restrictions have to be given due consideration. The important provisions of the Company Act 1956 pertaining to the distribution of dividend by a company are described below:

- Companies can pay dividends in cash only (except the issue of bonus shares). Companies are permitted to pay dividends through cheques or warrants sent through the post directed to the registered addresses of the shareholders.
- No dividend can be paid out of capital. Dividend can be paid only out of the profits earned during the financial year after providing the depreciation as required under the Companies Act and after transferring to reserves a specified percentage of profits as required by law.

  The Companies (Transfer of Profits to Reserve) Rules 1975 state that the percentage of profits of the year to be transferred to reserve would depend upon the rate of dividend to be paid. The percentage of profits to be transferred to reserves for different rates of dividends is as follows:
- at least 2.5% of the profits of a year if the proposed dividend for the year exceeds 10% but not 12.5% of the paid up capital;
- at least 5% of the profits of a year if the proposed dividend for the year exceeds 12.5% but not 15% of the paid up capital;
- at least 7.5% of the profit of a year if the proposed dividend for the year exceeds 15% but not 20% of the paid up capital; and

- at least 10% of the profits of a year if the proposed dividend exceeds 20% of the paid up capital.

  In case of inadequacy of current profits dividend can be paid out of accumulated profits. The Companies (Declaration of Dividend out of Reserves) Rules govern the payment of dividend out of accumulated profits. The conditions stipulated under the said rules are as under :

- The rate of dividend declared shall not exceed the average of the rates of dividends in the last five immediately preceding years, or 10% of the paid up capital, whichever is lower.
- The amount drawn from the accumulated profits of the previous year cannot exceed 10 percent of the paid up capital and free reserves of the company and the amount so drawn would be first utilised in meeting the losses of the current year if any before paying any dividend on preference or equity shares.
- The balance of accumulated profits after such withdrawal shall not be less than 15% of the paid up capital and free reserves of the company.

  Once the dividend is declared dividend warrants must be posted to the shareholders within 42 days. Within a period of 7 days after the expiry of 42 days the unpaid dividend must be transferred to a separate account in a schedule bank. If some dividend is not claimed within 3 years from the date of such transfer, it would be transferred to the general revenues of the Central Government. Those shareholders who could not claim dividend in time can lodge their claim with the Government.

Dividends cannot be paid for the past year for which the account has been closed.

A company which has issued shares for raising money to be spent on any construction of work or plant; may pay interest out of capital (it would not be termed as dividend) even though there are no profits, with the previous sanction of Central Government and subject to certain other conditions.

Students are advised to go though the relevant sections of Companies Act, 2013 for further knowledge.

20.6 FACTORS AFFECTING DIVIDEND POLICY

The dividend policy of a firm aims at satisfying the expectations of its shareholders for larger dividends and ensuring the welfare of the company by meeting its investment needs out of retained earnings. For this purpose a decision has to be made about how much of the profits is to be distributed as dividend and how much is to be retained in the business. There are a number of factors which influence this decision. We now turn to discuss some of such important factors :-

1. **Interests of Shareholders.** Dividend policy of a company should take care of the interest of majority of its shareholders. In case of a closely held company where the number of shareholders is fairly small it is not difficult to identify the interests of shareholders. On the other hand, the identification of interests of shareholders of a large company with a fairly decentralised ownership becomes very difficult. Therefore, formulation of the dividend policy of a closely held company is an easier job as compared to that of a widely held company.

   Shareholders invest their money either for dividend or capital gains shareholders requiring more in the form of dividends have to be satisfied by liberal dividend policy and those requiring capital gains can be served with lower payout ratio. The preference for dividends or capital gains depends upon the economic status of the shareholders and effect of tax differential on their dividend income and capital gains. Capital gains are taxed at a lower rate as compared to the dividend income. A wealthy shareholder who is in the high tax bracket would prefer capital gains to dividend income whereas a shareholder in low tax brackets whose main source of income is dividend would prefer regular dividend income.

   Shareholders' preference for regular dividend or capital gains is also dependent upon age and sources of income. Those shareholders, who are young and have other sources of income also in addition to the dividend income, prefer capital gains to dividends. On the other hand, the retired and old persons generally invest in shares to get a regular income. These persons select the shares of those companies for investment which have a track record of paying regular and liberal dividends.

   Shares of joint stock companies are also purchased by institutional shareholders. Therefore the dividend policy of a company should take care of the interests of these shareholders also. These institutional investors purchase large blocks of shares to hold them for a fairly long period of time. Most institutional investors are concerned with profitable investment rather than speculative gains. Therefore these investors prefer a stable dividend policy.

   The above discussion reveals that the desires of different shareholders are often conflicting. It is very difficult to reconcile these conflicting desires. However the board of directors should take care of the interests of all major groups of shareholders so as to satisfy the demands of the shareholders. The dividend policy once communicated and established should be followed for a fairly long time because in the absence of a definite dividend policy new investors may not be attracted and the financing needs of the company may not be fulfilled.

2. **Investment Needs.** Many companies establish their dividend policy on the basis of their foreseeable investment needs. The growing companies (those having abundant investment

opportunities) retain a large portion of their profits for reinvestment in the business. This causes the dividend payout to be relatively lower. On the other hand companies having fewer investment opportunities often retain lesser portion of profits resulting into higher payout ratio.

3. **Access to the Capital Markets.** Another factor that can strongly influence dividend policy of a company is the extent to which it has access to the capital markets. A well established company having a track record of profitability can easily raise funds in the capital market. Therefore such a company can easily pay dividends and meet its investment needs. On the other hand a company having tight cash position and no access to the capital market will not be able to pay dividends.

4. **Management Considerations.** The attitude of management affects the dividend policy of a company to a significant extent. If the management of company has favourable image and a good commanding position, it may favour retention of a major portion of its earnings. Though such an approach may easily meet the future needs for funds of the company, it deprives the shareholders of a legitimate return on their investment. On the other hand liberal organisations feel that shareholders are entitled to an established rate of dividend as long as the company is financially sound. Between these two extremes there can be number of variations of the dividend policy.

   The objective of maintaining control over the company by the existing management can affect its dividend policy to a significant extent. If a company pay large dividend, it will have to issue more shares to meet its investment needs. This will lead to the dilution of the control of the existing shareholders if they do not buy the additional shares. The management of a company desirous of retaining control will pay lesser dividends and finance investment needs with retained earnings.

5. **Legal and Contractual Constraints.** The dividend policy of a company must be formulated by taking into consideration the legal constraints. Law does not permit payment of dividend out of capital. Dividend can be paid either out of current profits or out of accumulated profits. Thus the intention of law is to protect the interest of preference shareholders and creditors since if dividend on equity share capital is paid out of capital then the preferential position of preference shareholders and creditors about repayment of capital at the time of liquidation of the company is eroded.

   Loan agreements and bond often contain provisions that restrict the amount of dividends the company may pay without approval of the trustees of the creditors or debentureholders. Therefore restrictive covenants imposed by debenture- holders can effectively limit the dividend policy of a company.

6. **Nature of Business.** The dividend policy of a company is significantly affected by the nature of its operations. The nature of the business operations of a company influences its earnings

stream which in turn determines the dividend policy. Consumer goods industries usually have stable demand for their products and suffer less from fluctuations in income. Similarly public utilities also have stable earnings. The companies having stable earnings stream can pay higher rate of dividend. On the other hands, companies facing fluctuations in earning stream tend to set dividend levels that they can be reasonable sure of meeting.

7. **Composition of Shareholders.** The composition of shareholding significantly influences the dividend policy of a company. In a closely held company the personal objectives of the directors and the expectations of the majority of the shareholders govern the dividend policy. On the other hand in case of widely held company the dividend policy is formulated with a greater sense of responsibility by adopting a more formal and systematic approach.

8. **Financial Solvency and Liquidity.** The need of maintaining financial solvency and liquidity also influences the dividend policy. Companies may desire to build up reserves by retaining their earnings which would enable them to withstand down swings of a business cycle. They will build up reserves and conserve cash resources to face future uncertainties.

   Sometimes a company may not have sufficient liquidity to pay dividends inspite of good amount of earnings. Therefore in such cases, the cash position of the company is an important consideration in paying dividend. More is the availability of cash with a company greater its ability to pay dividend. A mature company usually has sufficient cash and therefore can pay large amount of dividend. On the other hand a growing company faces the problem of liquidity because of need for additional funds to finance expansion programmes. Therefore a growing firm may not be able to pay high dividend inspite of good earnings.

9. **Inflation.** Inflation also influences the dividend policy of a company. During inflation funds generated from depreciation are not adequate to replace worn out machinery and equipment. This is due to the fact depreciation is provided on historical cost whereas the replacement cost of assets keeps on increasing during inflation period. Therefore to ensure the replacement of worn out assets the company has to depend upon retained earnings as a source of funds. This will reduce the payout ratio of the company.

   During inflationary period the profits of a company are overstated because of provision of depreciation on historical cost. The amount of overstated profits if used as a basis for dividend payment may lead to the liquidation of the company since the dividend may be paid out of capital. Therefore a discerning management will try to maintain the financial health of the company by retaining sufficient earnings during the period of inflation.

10. Dividend Policies of other Companies in the Industry. The dividend policy of a company is also influenced by the dividend policies of its competitors. This is done in order to make the investment in the shares of the company competitive.

11. Stage of business cycle. The demand for capital expenditure money, supply etc. change during different stages of business cycle. As a result, dividend policy may fluctuate from time to time.

12. Age of firm. Because of its growth and experience an established firm may be able to distribute its earning more safely than a comparatively younger organisation.

13. Management attitude. Some organisation may not believe in dividend payment while other may be liberal. The organisation who do not believe in dividend payment believe that their step will facilitate their expansion. Liberal organisation believes that shareholders are entitled to claim the established dividend rate as long their financial condition is reasonably sound.

The factor stated above should not be considered in isolation while formulating the dividend policy of a company. Their overall effect has to be seen on the welfare of the company and its shareholders.

The above discussion brings home the fact that desires of the shareholders are in conflict with the financial needs of the company. The dividend policy should strike a balance between the conflicting needs. A company should neither follow a practice of paying 100 percent dividend nor a practice of retaining 100 percent earnings. It should have a minimum pay-our ratio.

If the investment opportunities are not available then it can pay some extra dividend but still retaining some earnings for the continued existence of the company. Also if company is having highly profitable investment opportunities, it should not retain entire earnings for reinvestment in the business. It should pay reasonable dividend to its shareholders and finance its expansion needs through the issue of fresh shares and debt. It will help in keeping the expectations of shareholders for dividends satisfied.

20.7 SELF-ASSESSMENT QUESTIONS

1. What is dividend and why is dividend decision important?

2. "While formulating a dividend policy the management has to reconcile its own needs for funds with the expectations of shareholders". Explain the statement. What policy goals might be considered by management in taking a decision on dividends?

3. Discuss the role of financial manager in the matter of dividend policy. What alternatives he might consider and what factors should he takes into consideration before finalising his views on dividend policy?

4. "Dividend can be paid only out of profits". Explain the statement. Will a company be justified in paying dividends when it has unwritten-off accumulated losses of the past?

5. What factors a company would in general consider before it takes a decision on dividends?

SUGGESTED READING

- Gupta, Shashi K., Sharma, R.K, Management Accounting, Kalyani Publishers, New Delhi,
- Lal, Jawahar, Advanced Management Accounting, S.Chand & Co.Pvt. Ltd., New Delhi,
- Maheshwari, S.N., Financial and Management Accounting, Sultan Chand & Sons, New Delhi,