FINANCIAL STATEMENTS ANALYSIS

PGDF-203

BLOCK 1:
INTRODUCTION TO FINANCIAL ACCOUNTING AND FINANCIAL STATEMENTS

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FINANCIAL STATEMENTS ANALYSIS

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ROLE OF SELF INSTRUCTIONAL MATERIAL IN DISTANCE LEARNING

The need to plan effective instruction is imperative for a successful distance teaching repertoire. This is due to the fact that the instructional designer, the tutor, the author (s) and the student are often separated by distance and may never meet in person. This is an increasingly common scenario in distance education instruction. As much as possible, teaching by distance should stimulate the student's intellectual involvement and contain all the necessary learning instructional activities that are capable of guiding the student through the course objectives. Therefore, the course / self-instructional material are completely equipped with everything that the syllabus prescribes.

To ensure effective instruction, a number of instructional design ideas are used and these help students to acquire knowledge, intellectual skills, motor skills and necessary attitudinal changes. In this respect, students' assessment and course evaluation are incorporated in the text.

The nature of instructional activities used in distance education self-instructional materials depends on the domain of learning that they reinforce in the text, that is, the cognitive, psychomotor and affective. These are further interpreted in the acquisition of knowledge, intellectual skills and motor skills. Students may be encouraged to gain, apply and communicate (orally or in writing) the knowledge acquired. Intellectual-skills objectives may be met by designing instructions that make use of students' prior knowledge and experiences in the discourse as the foundation on which newly acquired knowledge is built.

The provision of exercises in the form of assignments, projects and tutorial feedback is necessary. Instructional activities that teach motor skills need to be graphically demonstrated and the correct practices provided during tutorials. Instructional activities for inculcating change in attitude and behavior should create interest and demonstrate need and benefits gained by adopting the required change. Information on the adoption and procedures for practice of new attitudes may then be introduced.

Teaching and learning at a distance eliminates interactive communication cues, such as pauses, intonation and gestures, associated with the face-to-face method of teaching. This is particularly so with the exclusive use of print media. Instructional activities built into the instructional repertoire provide this missing interaction between the student and the teacher. Therefore, the use of instructional activities to affect better distance teaching is not optional, but mandatory.

Our team of successful writers and authors has tried to reduce this.

Divide and to bring this Self Instructional Material as the best teaching and communication tool. Instructional activities are varied in order to assess the different facets of the domains of learning.

Distance education teaching repertoire involves extensive use of self-instructional materials, be they print or otherwise. These materials are designed to achieve certain pre-determined learning outcomes, namely goals and objectives that are contained in an instructional plan. Since the teaching process is affected over a distance, there is need to ensure that students actively participate in their learning by performing specific tasks that help them to understand the relevant concepts. Therefore, a set of exercises is built into the teaching repertoire in order to link what students and tutors do in the framework of the course outline. These could be in the form of students' assignments, a research project or a science practical exercise. Examples of instructional activities in distance education are too numerous to list. Instructional activities, when used in this context, help to motivate students, guide and measure students' performance (continuous assessment)

PREFACE

We have put in lots of hard work to make this book as user-friendly as possible, but we have not sacrificed quality. Experts were involved in preparing the materials. However, concepts are explained in easy language for you. We have included may tables and examples for easy understanding.

We sincerely hope this book will help you in every way you expect.

All the best for your studies from our team!

FINANCIAL STATEMENTS ANALYSIS

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FINANCIAL STATEMENTS ANALYSIS

BLOCK 1: INTRODUCTION TO FINANCIAL ACCOUNTING AND FINANCIAL STATEMENTS

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Block Introduction

Financial statement analysis is considered to be one of the important topic in the field of accounting and finance as it is the subject which measures the actual performance of the business. It is only because of this subject that we are able to measure the performance of the business, compare it with our standard or with our past performance and take corrective measure accordingly.

In this block we will get a detailed information about financial accounting. We will get a basic idea of what actually accounting is? What is the role of accountancy in our society? How did it evolve and why is it really required?

We will even learn that accounting seems to be a very new subject but it is one of the oldest subjects and accounting has been into the practice of human society from a very way back. In the second unit we will discuss about the financial statements and there use. Role and importance of financial statements and how they help in making analysis. Although the financial statements have not been discussed in very detail but you will get the basic idea of the topic here in the second unit. And the detailed information could be found in the later sections of the book. Through the study of this block we will get a basic idea of the financial accounting, financial statements and what is their role in accounting and this information shall be helpful to us in understanding the latter units of the block

Block Objective

After learning this block, you will be able to understand:

- The growth and evolution of accounting.
- Role and importance of accounting.
- Types of accounting.
- Know about financial statements.

- Role and importance of financial statements.
- Analysis of financial statements.

Block Structure

Unit 1: Introduction to Financial Accounting

Unit 2: Financial Statements

UNIT 1: INTRODUCTION TO FINANCIAL ACCOUNTING

Unit Structure

1.0 Learning Objectives

After learning this unit, you will be able to understand:

- Accounting and trace the origin and growth of accounting.
- Distinguish between book-keeping and accounting.
- The nature and objectives of accounting.
- The branches, role and limitations of accounting.

1.1 Introduction

Accounting has rightly been termed as the language of the business. The basic function of a language is to serve as a means of communicationAccounting also serves this function. It communicates the results of business operations to various parties who have some stake in the business viz., the proprietor, creditors, investors, government and other agencies. Though accounting is generally associated with business but it is not only business which makes use of accounting. Persons like housewives, government and other individuals also make use of an accounting. For example, a housewife has to keep arecord of the money received and spent by her during a particular period. She can record her receipts of money on one page of her "household diary" while paymentsfor different items such as milk, food, clothing, house, education etc. on someother page or pages of her diary in a chronological order. Such records will help her in knowing about:

(i) The sources from which she received cash and the purposes for which it was utilised.

(ii) Whether her receipts are more than her payments or vice-versa?

(iii) The balance of cash in hand or deficit, if any at the end of a period.

In case the housewife records her transactions regularly, she can collect valuable information about the nature of her receipts and payments. For example, she can find out the total amount spent by her during a period (say a year) on different items say milk, food, education, entertainment, etc. Similarlyshe can find the sources of her receipts such as salary of her husband, rent from property, cash gifts from her relatives, etc. Thus, at the end of a period (say a year) she can see for herself about her financial position i.e., what she owns and what she owes. This will help her in planning her future income and expenses (ormaking out a budget) to a great extent.The need for accounting is all the more great for a person who isrunning a business. He must know: (i) What he owns? (ii) What he owes? (iii) Whether he has earned a profit or suffered a loss on account of running a business? (iv) What is his financial position i.e. whether he will be in a position to meet allhis commitments in the near future or he is in the process of becoming a bankrupt.

Origin and Growth of Accounting

Accounting is as old as money itself. However, the act of accounting was not as developed as it is today because in the early stages of civilisation, the number of transactions to be recorded were so small that each businessman was

able to record and check for himself all his transactions. Accounting was practised in India twenty three centuries ago as is clear from the book named "Arthashastra" written by Kautilya, King Chandragupta's minister. This book not only relates to politics and economics, but also explain the art of proper keeping of accounts. However, the modern system of accounting based on the principles of double entry system owes it origin to Luco Pacioli who first published the principles of Double Entry System in 1494 at Venice in Italy. Thus, the art of accounting has been practised for century's but it is only in the late thirties that the study of the subject 'accounting' has been taken up seriously.

Financial accountancy (or financial accounting) is the field of accountancy concerned with the preparation of financial statements for decision makers, such as stockholders, suppliers, banks, employees, government agencies, owners and other stakeholders. Financial capital maintenance can be measured in either nominal monetary units or units of constant purchasing power. The central need for financial accounting is to reduce the various principal-agent problems, by measuring and monitoring the agents' performance and thereafter reporting the results to interested users.

1.2 Financial Accounting

The main purpose of accounting is to ascertain profit or loss during a specified period, to show financial condition of the business on a particular date and to have control over the firm's property. Such accounting records are required to be maintained to measure the income of the business and communicatethe information so that it may be used by managers, owners and other interested parties. Accounting is a discipline which records, classifies, summarises and interprets financial information about the activities of a concern so that intelligent decisions can be made about the concern. The American Institute of Certified Public Accountants has defined the Financial Accounting as "the art of recording, classifying and summarising in as significant manner and in terms of money transactions and events which in part, at least of a financial character, and interpreting the results there of". American Accounting Association defines accounting as "the process of identifying, measuring, and communicating economicinformation to permit informed judgements and decisions by users oftheinformation".

From the above the following attributes of accounting emerge:

1. **Recording**: It is concerned with the recording of financial transactions inan orderly manner, soon after their occurrence In the proper books of accounts.
2. **Classifying**: It is concerned with the systematic analysis of the recordeddata so as to accumulate the transactions of similar type at one place. This functionis performed by maintaining the ledger in which different accounts are opened towhich related transactions are posted.
3. **Summarising**: It is concerned with the preparation and presentation ofthe classified data in a manner useful to the users. This function involves thepreparation of financial statements such as Income Statement, Balance Sheet, Statement of Changes in Financial Position, Statement of Cash Flow, Statement of Value Added.
4. **Interpreting**: Nowadays, the aforesaid three functions are performed byelectronic data processing devices and the accountant has to concentrate mainlyon the interpretation aspects of accounting. The accountants should interpret thestatements in a manner useful to action. The accountant should explain not onlywhat has happened but also (a) why it happened, and (b) what is likely to happenunder specified conditions.

Distinction between Book-Keeping and Accounting

Book-keeping is a part of accounting and is concerned with the recording of transactions which is often routine and clerical in nature, where as accounting performs other functions as well, viz., measurement and communication, besides recording. An accountant is required to have a much higher level of knowledge, conceptual understanding and analytical skill than isrequired of the book-keeper. An accountant designs the accounting system, supervises and checksthe work of the book-keeper, prepares the reports based on the recorded data and interprets the reports. Nowadays, he is required to take part in matters of management, control and planning of economic resources.

Distinction between Accounting and Accountancy

Although in practice Accountancy and Accounting are used interchangeably yet there is a thin line of demarcation between them. The word Accountancy is used for the profession of accountants - who do the work of accounting and are knowledgeable persons. Accounting is concerned with recording all business transactions systematically and then arranging in the form of various accounts and financial statements. And it is a distinct discipline likeeconomics, physics, astronomy etc. The word accounting tries to explain the nature of the work of the

accountants (professionals) and the word Accountancy refersto the professions these people adopt.

1.2.1 Role of Financial Accounting

- Financial accounting generates some key documents, which includes profit and loss account, patterning the method of business traded for a specific period and the balance sheet that provides a statement, showing mode of trade in business for a specific period.
- It records financial transactions showing both the inflows and outflows of money from sales, wages etc.
- Financial accounting empowers the managers and aids them in managing more efficiently by preparing standard financial information, which includes monthly management report tracing the costs and profits against budgets, sales and investigations of the cost.

1.2.2 Importance of Financial Accounting

- It provides legal information to stakeholders such as financial accounts in the form of trading, profit and loss account and balance sheet.
- It shows the mode of investment for shareholders.
- It provides business trade credit for suppliers.
- It notifies the risks of loan in business for banks and lenders.

All financial accounting procedures should be transparent and strictly followed. If accounting principles and standards will not be practised effectively, it can cause huge losses to the company. Satyam Computer Systems Ltd., for example, was involved in India's largest accounting scandal. The profits of the company were falsely inflated for many years. Satyam Chairman B. RamalingaRaju then resigned, admitting the falsification of company accounts and inflation of revenue and profit figures. The company's auditors Price Waterhouse Coopers were also held responsible for the fraud.

Enron, a U.S. based power generation and distribution Company misled the public into believing that it was realising profits from legitimate trading of natural gas to energy. The company's traders helped in building up the "robust selling" scenario by publishing press releases about trade deals that did not actually take place. The company paid dividends to its investors from borrowed funds and from

the capital markets. However, apart from investor's money, there was no actual earning.

To solve its cash deficit, Enron resorted to substantial borrowing that was provided by Citigroup and JP Morgan Chase. The company established bogus companies called "Mahoria" and "Yosemite" in Cayman Islands as a debt-cover-up. Citigroup and JP Morgan Chase provided $8.5 billion in borrowed funds, channelled to two of Enron's fake companies. The money was showed as legitimate payments for energy trade deals of the two fake companies with Enron.

1.2.3 Benefits of Financial Accounting

- **Maintaining systematic records:** It is a primary function of accounting to keep a proper and chronological record of transactions and events, which provides a base for further processing and proof for checking and verification purposes. It embraces writing in the original/subsidiary books of entry, posting to ledger, preparation of trial balance and final accounts.
- **Meeting legal requirements:** Accounting helps to comply with the various legalrequirements. It is mandatory for joint stock companies to prepare and present their accounts in a prescribed form. Various returns such as income tax, sales tax are prepared with the help of the financial accounts.
- **Protecting and safeguarding business assets:** Records serve a dual purpose as evidence in the event of any dispute regarding ownership title of any property or assets of the business. It also helps prevent unwarranted and unjustified use. This function is of paramount importance, for it makes the best use of available resources.
- **Facilitating rational decision-making:** Accounting is the key to success for any decision-making process. Managerial decisions based on facts and figures take the organisation to heights of success. An effective price policy, satisfied wage structure, collective bargaining decisions, competing with rivals, advertisement and sales promotion policy etc all owe it to well set accounting structure. Accounting provides the necessary database on which a range of alternatives can be considered to make managerial decision-making process a rational one.
- **Communicating and reporting:** The individual events and transactions recorded and processed are given a concrete form to convey information to others. This economic information derived from financial statements and

various reports is intended to be used by different groups who are directly or indirectly involved or associated with the business enterprise.

1.2.4 Limitations of Financial Accounting

One of the major limitations of financial accounting is that it does not take into account the non-monetary facts of the business like the competition in the market, change in the value for money etc.

The following limitations of financial accounting have led to the development of cost accounting:

1. **No clear idea of operating efficiency:** You will agree that, at times, profits may be more or less, not because of efficiency or inefficiency but because of inflation or trade depression. Financial accounting will not give you a clear picture of operating efficiency when prices are rising or decreasing because of inflation or trade depression.

2. **Weakness not spotted out by collective results:** Financial accounting discloses only the net result of the collective activities of a business as a whole. It does not indicate profit or loss of each department, job, process or contract. It does not disclose the exact cause of inefficiency, i.e. it does not tell where the weakness is because it discloses the net profit of all the activities of a business as a whole. Say, for instance, it can be compared with a reading on a thermometer. A reading of more than 98.4° or less than 98.4º discloses that something is wrong with the human body but the exact disease is not disclosed. Similarly, loss or less profit disclosed by the profit and loss account is a signal of bad performance of the business in whole, but the exact cause of such performance is not identified.

3. **Not helpful in price fixation:** In financial accounting, costs are not available as an aid in determining prices of the products, services, production order and lines of products.

4. **No classification of expenses and accounts:** In financial accounting, there is no such system by which accounts are classified so as to give relevant data regarding costs by departments, processes, products in the manufacturing divisions, by units of product lines and sales territories, by departments, services and functions in the administrative division. Further expenses are not attributed as to direct and indirect items. They are not assigned to the products at each stage of production to show the controllable and uncontrollable items of overhead costs.

5. **No data for comparison and decision-making:** It will not provide you with useful data for comparison with a previous period. It also does not facilitate taking various financial decisions like introduction of new products, replacement of labour by machines, price in normal or special circumstances, producing a part in the factory or sourcing it from the market, production of a product to be continued or given up, priority accorded to different products and whether investment should be made in new products etc.

6. **No control on cost:** It does not provide for a proper control of materials and supplies, wages, labour and overheads.

7. **No standards to assess the performance:** In financial accounting, there is no such well-developed system of standards, which would enable you to appraise the efficiency of the organisation in using materials, labour and overhead costs. Again, it does not provide you any such information, which would help you to assess the performance of various persons and departments in order that costs do not exceed a reasonable limit for a given quantum of work of the requisite quality.

8. **Provides only historical information:** Financial accounting is mainly historical and tells you about the cost already incurred. As financial data is summarised at the end of the accounting period it does not provide day-to-day cost information for making effective plans for the coming year and the period after that.

9. **No analysis of losses:** It fails to provide complete analysis of losses due to defective material, idle time, idle plant and equipment. In other words, no distinction is made between avoidable and unavoidable wastage.

10. **Inadequate information for reports:** It does not provide adequate information for reports to outside agencies such as banks, government, insurance companies and trade associations.

11. **No answer to certain questions:** Financial accounting will not provide you with answers to such questions as:

    a. Should an attempt be made to sell more products or is the factory operating to its optimum capacity?

    b. If an order or contract is accepted, is the price obtainable sufficient to show a profit?

c. If the manufacture or sales, of product X were discontinued and efforts made to increase the sale of Y, what would be the effect on the net profit?

d. Why the annual profit is of a disappointing amount despite the fact that output was increased substantially?

e. If a machine is purchased to carry out a job, which at present is done by hand, what effect will this have on the profit line?

Wage rates having been increased by 50 paisa per hour, should selling price be increased and if so, by how much?

Check your progress 1

1. _____has rightly been termed as the language of the business.
   a. Accounting
   b. Financial statements
2. Accounting is as old as _____itself.
   a. Civilization
   b. money
3. _____is a part of accounting and is concerned with the recording of transactions which is often routine and clerical in nature.
   a. Book-keeping
   b. statements
4. The word _____is used for the profession of accountants.
   a. Accounts
   b. Accountancy
5. All financial accounting procedures should _____and strictly followed.
   a. be transparent
   b. not be transparent
6. Financial accounting does not take into account the _____facts.
   a. monetary
   b. non monetary

1.3 Let Us Sum Up

Accounting can be understood as the language of financial decisions. It is an on-going process of performance measurement and reporting the results todecision makers. The discipline of accounting can be traced back to very earlytimes of human civilization. With the advancement of industry, modern dayaccounting has become formalized and structured. A person who maintains accounts is known as the account. The information generated by accounting isused by various interested groups like, individuals, managers, investors, creditors,government, regulatory agencies, taxation authorities, employee, trade unions,consumers and general public. Depending upon purpose and method, accounting can be broadly devided in three types; financial accounting, cost accounting and management accounting. Financial accounting is primarily concerned with the preparation of financial statements. It is used on certain well-defined concepts and conventions and helps in framing broad financial policies. However, it suffers from certain limitations.

1.4 Answers for Check Your Progress

Check your progress 1

Answers: (1-a), (2-b), (3-a), (4-b), (5-a), (6-b)

1.5 Glossary

1. **Book-keeping -** It is the art of recording in the books of accounts themonetaryaspect of commercial or financial transactions.
2. **Accounting -** It is the means of collecting, summarising and reporting in monetaryterms, information about the business.
3. **Financial accounting -** Financial accounting deals with the maintenance of booksof accounts with a view to ascertain the profitability and the financial status ofthe business.
4. **Transaction -** A transaction is a stimulus from one person and a related response from the other person.

1.6 Assignment

Discuss the benefits of Accounting.

1.7 Activities

Define accounting. Discuss the objectives of accounting.

1.8 Case Study

What are the various interested parties which use accounting information?

1.9 Further Readings

1. Aggarwal and Jain Advanced Financial Accounting.
2. S.N. Maheshwari, Introduction to Accounting.
3. R.L.Gupta, Advanced Accountancy.
4. Shukla and Grewal, Advanced Accounts.
5. Tulsin, Financial Accounting.

UNIT 2: FINANCIAL STATEMENTS

Unit Structure

2.0 Learning Objectives

After learning this unit, you will be able to understand:

- The purpose and objectives of financial statements.
- The nature of financial statement.
- The characteristics of financial statement.
- The qualities of Ideal financial statement.

2.1 Introduction

Government legislations require certain organizations like limited companies, public utilities, and co-operative to maintain proper account and draw financial statement. Public can understand from the financial statement the extent to which a company is discharging its social responsibilities. While issuing shares bonds, financial statement become necessary as prospective investors can judge whether to by the share or bonds, from the information regarding the financial soundness, gathered from the financial statement. Workers union may study the financial statement and ascertain whether they can enforce their demand. Whiten an organization also, financial statement assist the management in taking various decisions. Consumer, all over the world, are becoming increasingly aware of their right and are using financial statement extensionally today to find out the degree of exploitation by the industries. Tax legislature makes it obligatory on the part of business entities to draw fair and objective financial statement. The financial statement serves as instruments to regulate equity and debentures issued by companies.

2.2 Meaning of Financial Statements

Financial statement analysis is a judgemental process which aims to estimate current and past financial positions and the results of the operation of an enterprise, with primary objective of determining the best possible estimates and predictions about the future conditions. It essentially involves regrouping and analysis of information provided by financial statements to establish relationships and throw light on the points of strengths and weaknesses of a business enterprise, which can be useful in decision-making involving comparison with other firms

(cross sectional analysis) and with firms' own performance, over a time period (time series analysis).

2.2.1 Purposes and Objectives of Financial Statements

Financial statements are very useful as they serve varied affected group having an economic interest in the activities in the business entity. Let us analyse the purpose served by financial statement.

a) The basic purpose of financial statement is communicated to their interested users, quantitative and objective information is useful in making economic decisions.

b) Secondly, financial statements are intended to meet the specialized needs of conscious creditors and investors.

c) Thirdly, financial statements are prepared to provide reliable information about the earning of a business enterprise and it ability to operate of profit in future. The users who are interested in this information are generally the investors, creditors, suppliers and employees.

d) Fourthly, financial statements are intended to provide the base for tax assessments.

e) Fifthly, financial statement are prepare in a way a provide information that is useful in predicting the future earning power of the enterprise.

f) Sixthly, financial statements are prepares to provide reliable information about the changes in economic resources.

g) Seventhly, financial statements are prepares to provide information about the changes in net resources of the organization that result from profit directed activities. Thus, financial statement satisfy the information requirements of a wide cross-section of the society representing corporate managers, executives, bankers, creditors, shareholders investors, labourers, consumers, and government institution.

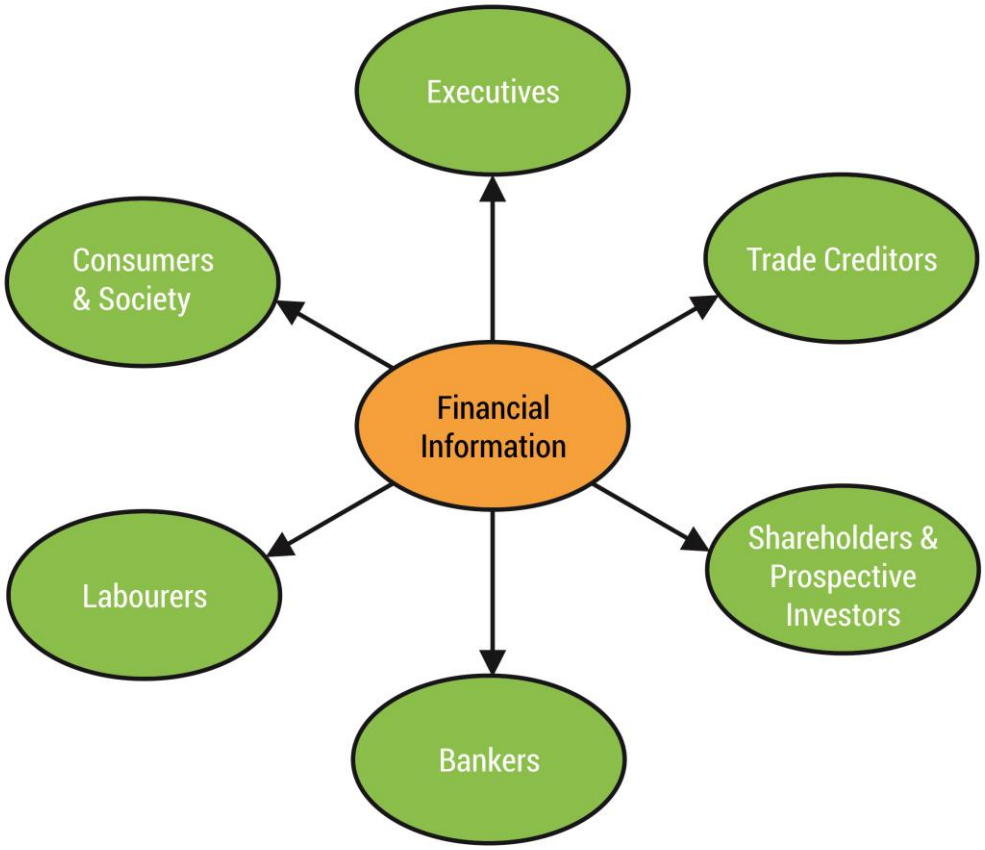

Fig 2.1 Financial information

a) **Executives:** Financial statements provide sufficient accounting information to the executives and managers to enable them to decide on important issues facing them. The common issues facing corporate managers today, like efficient capital utilization, maintaining the profitability though cost control, dividend paying capacity of the company and observing credit standards, can be tackled effectively, if the executives have a proper understanding of analysis for the financial statement.

b) **Bankers:** Bankers take precautions before advancing loans to their constituents. Every banker, before sanctioning credit, wishes to be assured the borrower‘s ability to repay the loans when they become due; to ascertain the company‘s ability to pay interest charges on loans and their respective due dates. Therefore, they scrutinize and study the financial statements in depth and analyse them to ascertain the borrower‘s liquidity, solvency, profitability of his business and his financial strength.

c) **Trade Creditors:** Credit facilities mass distributors of goods produced but a manufactures or a wholesalers would not provide credit facilities indiscreetly to everyone. Before opening an account for the trader concerned, the manufacturer and wholesaler studies the financial statements

of the traders, supplemented by various trade and bank references, to ascertain his credit worthiness. This information could be obtained from the financial statement.

d) **Shareholders and Prospective Investors:** Shareholders, who have permanent interest in the life and operations of the company, are ever desirous of knowing about their company‘s year to shareholders are particularly interested in the future of the company. The financial statements provide the shareholders all the information they require. What is said for the shareholders holds equally good for the prospective investors.

e) **Labourers:** Labourers contribute to the earnings of the company and they are the people who work on raw materials with the aid of capital goods to produce wealth. They are also interested in their wages and salaries, bonus and working conditions. As far as bonus, working conditions and other incentives are concerned, they largely depend on the company‘s profitability and liquidity. The labourers are also interested in the business as agoing concern as it only ensures their permanent employment.

f) **Consumers and society:** Consumers attempt to find out whether they are being exploited by the producers. Society is interested in an enterprise‘s that result in the increase of employment opportunities, wealth and standard of living of the people. They are also concerned about the enterprise‘s contribution to social welfare, environment and national wealth and prestige. Study of financial statements enables the consumers and the society to gain knowledge on these matters.

2.2.2 Nature of Financial Statements

Financial statements are plain statements based on historical recorded facts and figures. They are uncompromising in their objectives, nature and truthfulness. They reflect a judicious combination of recorded facts, accounting principles, concepts and conventions, personal judgements and sometimes estimates.

Thus, financial statements are affected by three factors i.e., recorded facts, accounting conventions and personal judgements.

a) By recorded facts is meant the data contained in statements which have already recorded in accounting records. Example: Cash in hand and at bank, cost of fixed assets, amounts due from customers and due to suppliers of goods are all recorded facts represented numerically.

b) Financial statements are prepared by adhering to certain concepts and established conventions.

c) In agreement with the recorded facts and accounting concepts and conventions, the role of personal judgements, estimates and opinions, are to be emphasised especially when two or more alternative procedures are available and which acceptable are equally. Example: an asset could be depreciated under several methods, and inventory could be valued under different methods. Under such circumstances, personal opinion and judgement play an important role as to which of the methods are in closer conformity with the accounting standards and concepts in a particular circumstance or case.

2.2.3 Characteristics of Financial Statements

Financial statements are regarded as indices of an enterprise‘s performance and position. As such, extreme care and caution should be exercised while preparing these statements. Financial statements generally reflect the following observable characteristics:

1. Internal Audience
2. Articulation
3. Historical Nature
4. Legal and Economical Consequences
5. Technical Terminology
6. Summarization and Classification
7. Money Terms
8. Valuation Methods
9. Accrual Basis
10. Estimates and Judgement
11. Verifiability
12. Conservatism

1. Internal Audience: financial statements are intended for those who have an interest in a given business enterprise. They have to be prepared on the

assumption that the user is generally familiar with business practices as well as the meaning and implication of the terms used in that business.

2. **Articulation:** The basic financial statements are interrelated and therefore are said to 'articulated'. Example: Profit and Loss account shows the financial results of operations and represents an increase or decrease in resources that is reflected in the various balances in the balance sheet.
3. **Historical Nature:** Financial statements generally report what has happened in the past. Though they are used increasingly as the basis for the future by prospective investors and creditors, they are not intended to provide estimates of future economic activities and their effect on income and equity.
4. **Legal and economic consequences:** Financial statements reflect elements of both economics and law. They are conceptually oriented towards economics, but many of the concepts and conventions have their origin in law. Example: Conventions of disclosure and materiality
5. **Technical Terminology:** Since financial statements are products of a technical process called ―accounting‖, they involve the use of technical terms. It is, therefore, important that the users of these statements should be familiar with the different terms used therein and conversant with their interpretations and meanings.
6. **Summarization and Classification:** The volume of business transaction affecting the business operations are so vast that summarization and classification of business events and items alone will enable the reader to draw out useful conclusions.
7. **Money Terms:** All business transactions are quantified, measured and related in monetary terms. In the absence of this monetary unit of measurement, financial statements will be meaningless.
8. **Various Valuation Methods:** The valuation methods are not uniform for all items found in a Balance Sheet. Example: Cash is stated at current exchange value; Accounts receivable at net realizable value; inventories at cost or market price whichever is lower; fixed assets at cost less depreciation.
9. **Accrual Basis:** Most financial statements are prepared on accrual basis rather than on cash basis i.e., taking into account all incomes due but not received, and all expenses due but not paid.
10. **Need for Estimates and judgement:** Under more than one circumstance, the facts and figures to be presented through financial statements are to be based on estimates, personal opinions and judgements. Example: Rate of

depreciation, the useful economic life of a fixed asset, provision for doubtful debts are all instances where estimates and personal judgements are involved.

11. **Verifiability:** it is essential that the facts presented through financial statements are susceptible to objective verification, so that the reliability of these statements can be improved.
12. **Conservatism:** Wherever and whenever estimates and personal judgements become essential during the course of preparation of financial statements, such estimates, should be based moderately on a conservative basis to avoid any possibility of overstating the assets and incomes.

Check your progress 1

1. Financial _____analysis is a judgemental process which aims to estimate current and past financial positions.
   a. statement
   b. books
2. _____are very useful as they serve varied affected group having an economic interest in the activities in the business entity.
   a. Balance sheets
   b. Financial statements
3. _____provide sufficient accounting information to the executives and managers to enable them to decide on important issues facing them.
   a. Financial statements
   b. Ratio analysis
4. Financial statements are regarded as ____of an enterprise‘s performance.
   a. measure
   b. Indices
5. All _____transactions are quantified, measured and related in monetary terms.
   a. Business
   b. personal

2.3 Preparation of Financial Statements

Let us now see the contents of financial statements and the methodology of constructing them.

2.3.1 Financial Statements

Financial statements consist of Revenue Account and Balance Sheet. Revenue Account refers toProfit and Loss Account or Income and Expenditure Account or simply Income Statement. Revenue Account may be split up or divided into 'Manufacturing Account', 'Trading Account', 'Profit and Loss Account' and 'Profit and Loss Appropriation Account', Revenue Account is prepared for a period, covering one year.

2.3.2 Objects of preparing Revenue Accounts

Manufacturing Account is prepared to find out the total 'Cost of Goods Manufactured' in the period. It will also reveal the cost of material consumed, labour and other manufacturing expenses or costs. Trading Account is prepared to ascertain the trading result i.e. gross profit or gross loss made on sale of goods. Profit and Loss Account is prepared covering the same period to ascertain the net profit or net loss during the year under review, from the usual business. Profit and Loss Appropriation Account is prepared wherein all other items of expenses and appropriations are reflected to reveal the net profit or net loss. Generally this includes items related to earlier years or charge of interest or salary payable to proprietor or partners. Sole proprietary concerns, partnership firms and companies prepare the above mentioned accounts. In case of companies, the Revenue Account i.e. profit and loss account is to be prepared taking note of the requirements of Schedule VI Part II to the Companies Act refers to profit and loss account only.

2.3.3 Manufacturing Account

A manufacturing concern may prepare the Manufacturing Account and Trading Account is prepared separately. But in small manufacturing concerns, only one combined account known as Manufacturing and Trading Account may be prepared. The distinction between a Trading Account and a Manufacturing Account is that a Manufacturing Account deals only with all costs and expenses of manufacture. Trading Account deals only with finished goods and expenses relating to them showing the cost of manufacture. Finished goods are those goods which are ready for sale. Such goods may be manufactured in the concern or may be purchased from outside. The cost of goods manufactured as shown by the

Manufacturing Account, is transferred to the Trading Account. The purpose of preparing the Manufacturing Account, as already mentioned, is to ascertain the cost of goods manufactured. It should therefore include all the expenses relating to manufacture of goods, i.e. purchase of raw materials, expenses such as carriage, freight etc. and all others expenses incurred to convert raw materials into finished goods. To give a clear idea the elements of cost are enumerated under various heads like prime cost, factory cost etc. Manufacturing or Production A/c is prepared to describe the various elements of cost in creating the finished goods.

Cost Elements:

There are three major elements of production cost viz. a) Direct materials, b) Direct labour, and c) Factory overheads direct material and direct labour constitutedirect cost‘ and the latter constitutesindirect cost‘.

a) Direct Materials:

It refers to such materials which are incorporated into the physical units of product manufactured. It is readily and definitely ascertainable.

b) Direct Labour:

It refers to the labour performed in physical contact with the product. It is the amount of wages paid to the workers who are engaged in converting raw materials into finished goods. It can be easily ascertained.

c) Factory or Production overhead:

It is not easily assignable to a particular product. It is an indirect cost and includes: i) Indirect labour (foremen, Works manager, Storekeeper etc.) ii) Indirect materials (factory supplies) iii) Depreciation of factory Building, Plant and machinery. iv) Amortization of parents. v) Insurance on building, machinery and materials etc. vi) Maintenance of factory, and vii) Water, heat, light and parts used in factory.

Important point regarding Manufacturing Account:

a. Stocks:

The distinguishing feature of a manufacturing concern is the type of stock held. A trading concern holds only stock of finished goods. A manufacturing concern holds stock of materials, semi finished or work in process as well as finished goods.

b. Direct Material Consumed:

It is customary to show in the Manufacturing A/c the value of raw materials consumed for manufacturing goods during a particular period. It is computed as follows:

	Rs.
Opening Stock of Raw Materials	XX
Add: Purchase of Raw Materials	XX
Add: Carriage or Freight Inwards	XX
Less: Rejected or returned Materials	XX
Less: Closing Stock of Raw Materials	XX
	XX

c. Work in Process:

This represents materials put in process which is not completely converted in Finished Goods. Opening and closing works in process are shown in the Manufacturing A/c on Debit side and Credit side respectively. However, their figure (difference) appears on the debit side either as an addition or deduction.

d. Sale of Scrap:

In manufacturing operations there may be certain scrap which may or may not have a sale value. In order to find out correct cost of manufacturing the goods it is necessary to credit manufacturing A/c by the amount of scrap.

e. Factory Expenses:

These expenses include for processing or manufacturing goods i.e. converting raw materials into finished goods. These include expenses like (1) Power and Fuel, (2) Rent, Rates, Taxes, Insurance, Repairs and Depreciation on assets used for manufacture, (3) Factory Stores and Spares, (4) Factory Supervision.

2.3.4 Balance Sheet

Balance Sheet defined

It is not possible to define the whole Balance Sheet except in vague terms. The definition of the balance sheet given by the American Institute Certified Public Accountants is as follows: Balance Sheet is a list of balances in the asset, liability or net worth accounts. This definition is accurate but not meaningful. Accounting Standards Board, India has defined balance Sheet as a statement of the financial position of an enterprise as at a given date which exhibits its assets, liabilities, capital, reserves and other account balances at their respective book values.

A more meaningful definition of balance Sheet will be as under: Balance Sheet shows the sources from which funds currently used to operate the business have been obtained (i.e. liabilities and owners equity) and the types of property and property rights, in which these funds are currently locked up (i.e. assets). Balance Sheet may be considered as a summarised sheet of balances remaining in the books of account, after the preparation of the profit and Loss Account. Thus a Balance Sheet can be rightly called as a statement of position as it now contains assets and liabilities generally. It is a document of the financial position of an enterprise, as it indicates what the business owns and what it owes on a particular date. The things that the business owns are called Assets and the various sums of money that it owes are called liabilities (including that of the owners). The term Balance Sheet comes from the fact that the total assets must be equal to total liabilities, they balance each other. The liabilities side shows the various sources from which money made available for the assets, and the assets side shows the way those funds are employed in the business. While preparing final accounts, all nominal accounts from the trial Balance are closed by transferring them to Trading and Profit and Loss Account. The other account balances, not transferred to Revenue Accounts, will be either personal or real accounts a collection of all these balances is known as a Balance Sheet. So, we can rightly term the Balance sheet asa sheet of balances. As we have seen earlier, a balance Sheet is so called because its two aides must always balance, i.e., the assetsmust be equal The Liabilities plus owner’s funds. This can be expressed in the form of an equation. Assets = Liabilities + Net Capital A = L + NC (Capital + Reserves – Fictitious Assets). The entire balance sheet rests on the above equation. Thus, the above equation is called the Balance Sheet Equation or Accounting Equations.

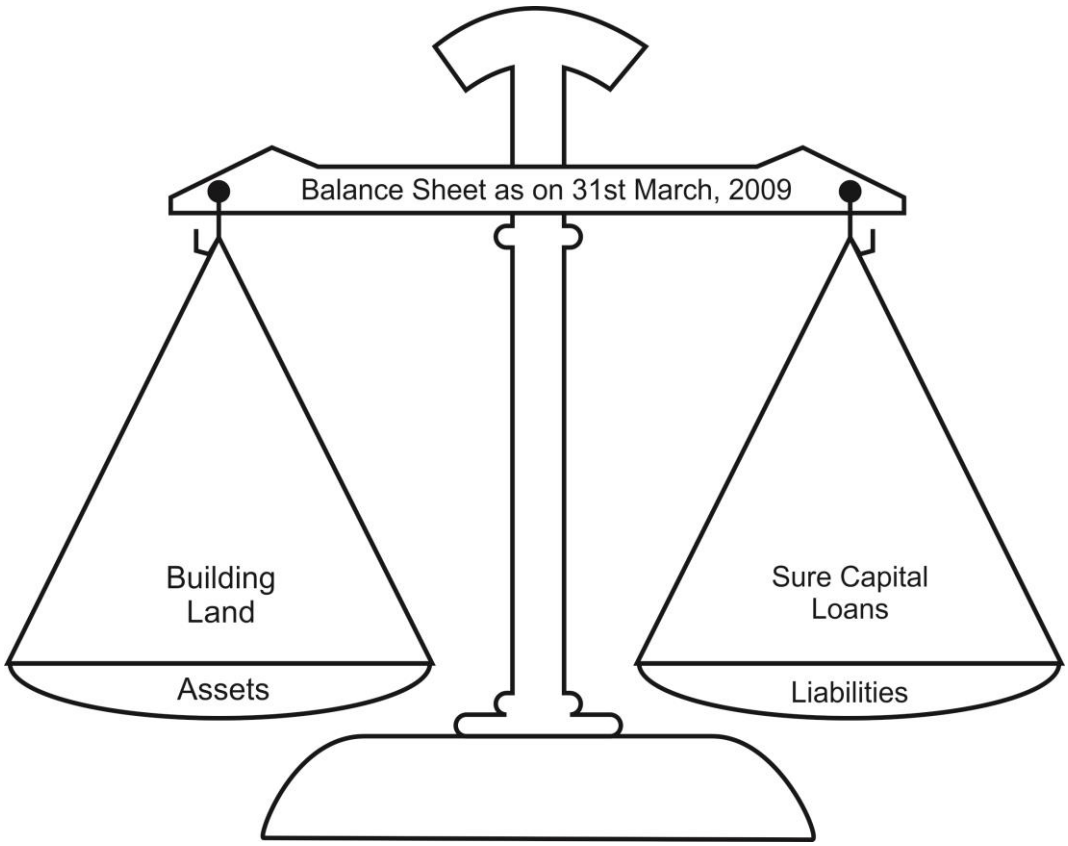

Fig 2.2 Balancesheet

The Balance Sheet is given various titles as follows:

1. General Balance Sheet.
2. Statement of Financial position.
3. Statement of Financial Condition.
4. Statement of Asset and Liabilities.
5. Statement of Resources and Liabilities.
6. Statement of Availability of Resources and their application.
7. Statement of Assets, Liabilities and Capital.
8. Statement of worth.
9. Statement of Net worth.
10. Financial statement, etc.

Thus, Balance Sheet may be rightly called as the Statement of Assets and Liabilities that shows the financial position of a business enterprise on a particular date. All items appearing in Balance Sheet are either capital receipts or capital payments or personal accounts and balance of undistributed profits. Why Balance

Sheet? Balance sheet is a statement of assets and liabilities. Are business transaction are recorded in the books of accounts under the double entry system recording both the credit and debit aspects of each and every business transaction. The total of all debits must be equal to the total of all credit and therefore, the resulting balance also must be agreed. This can also be explained thus: since the liabilities side (left hand side) on the balance sheet shows the sources of fund and the assets side (right hand side) show the employment of funds the total assets must be equal to total liabilities.

Function of the Balance Sheets: The three important functions performed by balance sheet are:

a) It gives the summery of the firm's assets and liabilities.

b) It is a measure of the firm liquidity.

c) It is measure of the firm's solvency.

Format of Balance Sheets: A balance sheet may be presented in various forms. They are:

1. Conventional format
2. Vertical format
3. Step format.

1. Conventional Format : The conventional from or the customary form of balance sheets is also called horizontal form or account form or T form of the balance sheets. It shows the assets i.e. debit balance on the right and side and liabilities i.e. the credit balances and owners equity on the left hand side. But in countries like the U.S. and Canada, the assets (debit items) are shown on the left hand side and liabilities (credit items) on the right hand side of the balance sheet. This method of presenting the balance sheet is also known asbalance array form.

Arrangement of assets and liabilities:

In the horizontal form of balance sheet presentation, the assets are shown either in order of liquidity or in order of permanence. The arrangement in order of liquidity shows the order in which the assets could be realized to satisfy business liabilities and the liabilities in the order of earliest, relative maturity or discharge. The order of liquidity is adopted by concern whose operations are mostly cash like banking companies, investment and finance companies, etc. The order of permanency indicates the relative degree of permanency of assets and liabilities.

Mostly, manufacturing and trading companies adopted this order of showing fixed assets first followed by less fites and current assetand on the liabilities side, the liability to be paid last as the first, followed by relatively less permanent liabilities.

A. in order of liquidity

Liability	**Assets**
Current Liability	Current Assets
Long term liability	Fixed Assets
Capital & Reserve	Other Assets

B. in order of permanence

Capital & Reserve	Fixed Assets
Long term Liability	Current Assets
Current Liability	Other Assets

Check your progress 2

1. Financial statements consist of _____Account and Balance Sheet.
   a. Revenue
   b. capital
2. _____Account is prepared to find out the total Cost of Goods Manufactured in the period.
   a. Trading
   b. Manufacturing
3. _____is a list of balances in the asset, liability or net worth accounts
   a. Balance Sheet
   b. Income statement
4. The conventional from or the customary form of balance sheets is also called _____ form
   a. Vertical
   b. Horizontal

5. In the horizontal form of balance sheet presentation, the _____are showed either in order of liquidity or in order of permanence.

   a. assets

   b. liabilities

2.4 Analysis of Financial Statements and Ratio Analysis

Financial statement analysis is defined as the process of identifying financial strengths and weaknesses of the firm by properly establishing relationship between the items of the balance sheet and the profit and loss account.

There are various methods or techniques that are used in analyzing financial statements, such as comparative statements, schedule of changes in working capital, common size percentages, funds analysis, trend analysis, and ratios analysis. Financial statements are prepared to meet external reporting obligations and also for decision making purposes. They play a dominant role in setting the framework of managerial decisions.

2.2.1 Limitation of Financial Statement

Following are the limitations of financial statements:

1. The information being of historical nature does not reflect the future.
2. It is the outcome of accounting concept, convention combined with personal judgement.
3. The statement portrays the position in monetary term. The profit or loss position excludes from their purview things which cannot be expressed or recorded in term of money.

As the information provided in the financial statements is not an end in itself as no meaningful conclusions can be drawn from these statements alone. However, the information provided in the financial statements is of immense use in making decisions through analysis and interpretation of financial statements. To overcome from the limitations it becomes necessary to analyse the financial statements. The analytical tools generally available to an analyst for this purpose are:

1. Comparative financial and operating Statements
2. Common-size statement
3. Trend ration and trend analysis
4. Average Analysis
5. Change in working capital
6. Fund-flow and cost-flow analysis
7. Ratio analysis

1. Comparative Financial and Operating Statement: Comparative financial statement are of financial position of a business so designed as to provide time perspective to the Consideration of various element of position embodied in such statement The balance sheet and Income Statement I, e. Profit and loss account are prepared in a Comparative from as the impact of the conduct of business is brought to bear on the Balance Sheet, Comparative statement are made to show –

1. Absolute date (money values or rupee amount).
2. Increases and decreases in absolute data in term of money values.
3. Increases or decreases in absolute data in term of percentage.
4. Comparisons expressed in ration.
5. Percentage of total.

Comparative financial statements are very useful to the analyst as they Provide information necessary for the study of financial and operating trend over a period of years. They indicate the duration of the movement with respect of the financial position and operating results financial data become more meaningful. When compared with similar data for a previous period or a number of prior periods such statements are very helpful in measuring the effect of the conduct of a business during the period under consideration. The comparative profit and loss account will present a review of operating activities of the business. The comparative balance sheet shows the effect of operations on the assets and liability i.e change in the financial position during the period under consideration. Comparisons loss their significant and tend to become misleading if the date being compared do not reflect the consistent application of generally accepted accounting principles from date to date or period to period.

The absence of the comparability of statement should be indicated in the footnotes that accompany the financial statement as well as in the accounts report In the preparation of comparative financial statement uniformity is essential care must be taken to see that all account heads or group of these like administrative expenses; fixed assets; current assets; long term fund short term fund etc have the same connotation Otherwise; comparison will be vitiated.

2. **Common size Statement:** Comparative statements that give only the vertical percentage or ration for financial data without giving rupee value are known as common size statement. A comparison of two years figures of a concern can be easily made under the companies Act. Companies must Show in their profit and loss account and balance sheet the corresponding figures for the previous year. Sometime, however, the figures do not signify anything as the heads of items are regrouped and are in comparable; they should precisely have the some meaning from one year to another.

   It is better to work out the ratio of various items to sales in term of percentage and enter these also in the statement. As common size statement are most valuable in marketing Comparisons between the companies in the some industry. A common size statement shows the relation of each component to the whole. It is useful in vertical financial analysis and comparison of two business enterprises at a certain date.

3. **Trend Analysis:** The analysis is an important and useful technique of analysis and interpretation of financial statement under the technique the ration of different items for various periods are calculate for the company over a definite period of time say three to five years and then we can analysis trend highlighted by this ratio Trend analysis can be done in three following way.

(i) Trend percentage,

(ii) Trend ratio,

(iii) Graphic and diagrammatic representation. In the statement the percentage column are more relevant than the figure.

Utility of Trend Analysis:

a) It is a simple technique. It does not involve tedious calculation and required trained experts

b) It is brief method to indicate the future trend

c) It is reduces the chances of errors as it provides the opportunity to compare the percentage with absolute figures

4. **Average Analysis**: It is an improment over trend analysis method. When trend ratio have been determined these figure are compared with industry averages. These trend can be presented on the graph paper also in the shape of curve in this from the analysis and comparation become more comprehensive and impressive.

5. **Statement of changes in Working Capital:** To Know an increase or decrease in working capital over a period of time, the preparation of a statement of change in Working Capital is also very useful. The statement gives an accurate summary of the events. That affected the amount of working capital. The amount of net working capital as determined by deducting the total of current liability from the total of the current assets. It is a rough estimated which may be arrived at by using balance sheet data only. But it does not explain the detailed reasons for the changes in working capital and methods of financing additional requirement of working capital. Hence the preparation of fund flow statement becomes necessary.

6. **Funds flow and Cash flow Analysis:** The statement of sources and application of funds also called were got were gone statement provides the missing link in the complement of final account statement. It demonstrates the manner by which periods activities call upon and generate the financial resources of the business unit and the resultant ebb and flow of these resources through the temporary reservoirs of firm assets. In the process, it highlights the changes in the financial structure of an undertaking funds flow analysis is a valuable aid to the financial executive and creditor For evaluating the use of funds by the firm and determining how these uses were financed. A Funds flow statement indicates where fund come from and the here it was used during the period under review. These statement can be prepared separately also. There are important tool of communication and are very helpful for financial executives in planning the intermediate and long-term financing of the firm.

7. **Ratio Analysis:** An absolute figure after does not convey much meaning It is only in the light of other information that the significance of a figure is realized. A person S weight is 80 kg. Is he fact? One can not answer this question unless one knows Known unless together with the amount of profit the amount of figures expressed mathematical is called ratio. The ratio between 4 and 10 is 0 4 or 40% 0 4 and 40% are ratios. Accounting ratio

relationships expressed in mathematical terms between figures. Which have a causes an effect relationship or which are connected with each other in some manner or the other obviously no purpose will be served by working out ratio between entirely unrelated figure such as discount on debenture and sales Ratio may be worked out on the basis of figure contained in the financial statement and, therefore, may be classified as follows:

(a) Income statement ratio

(b) Position statement (balance sheet) ratio, and

(c) Inter-statement ratio Ratio as tools for establishing true profitability and financial position of a company may be classified as:

1. Profitability ratios.
2. Turn over ratios
3. Financial ratio

To say the same thing in different word, ratios will portray the financial position while others will portray the causes that lead to a change in it In the net shall ratio analysis give the answer of the following problem – whether the capital structure of the business is in proper order, whether the profitability of the business is satisfactory, Whether the credit policy in relation to sales and purchases is sound and whether the company is credit worthy.

Check your progress 3

1. _____statement that give only the vertical percentage or ration for financial data without giving rupee value are known as common size statement.

   a. Comparative

   b. income

2. As _____statement are most valuable in marketing Comparisons between the companies in the some industry.

   a. Income

   b. common size

3. Average analysis is _____ over trend analysis method.
   a. Improvement
   b. Not an improvement

2.5 Let Us Sum Up

An analysis of financial statements is the process of critically examining in detailaccounting information given in the financial statements. For the purpose of analysis, individual items are studied, their interrelationships with other related figures areestablished and the data is sometimes rearranged to have better understanding of the information with the help of different techniques or tools for the purpose. Analysing financial statements is a process of evaluating relationship between component parts of financial statements to obtain a better understanding of firm's position and performance. The principal tools of financial analysis include comparative financial statements, common size statements, trend analysis, cash flow statements, ratioanalysis and fund flow statements.

2.6 Answer for Check Your Progress

Check your progress 1

Answers: (1-a), (2-b), (3-a), (4-b), (5-a)

Check your progress 2

Answers: (1-a), (2-b), (3-a), (4-b), (5-a)

Check your progress 3

Answers: (1-a), (2-b), (3-a)

2.7 Glossary

1. **Financial statement** - Financial statements refer to formal and original statementswhich are prepared to disclose financial health in the terms of profits, position and prospects as on a certain data.

2. **Analysis of financial statement** - It refers to the art of applying various tools toknow the behaviour of the accounting information.
3. **Interpretation of financial statement** - This refers to evaluating the performanceof the business.
4. **Comparative financial statements** - These enable comparison of financial information for two or more years placed side by side.
5. **Trend analysis** - Trend analysis can be defined as the index numbers of the movements of the various financial items on the financial statement for a number of periods.

2.8 Assignment

What do you mean by analysis of financial statements? Discuss the different methods used for the analysis and interpretation of financial statements.

2.9 Activities

What are comparative statements? What is their usefulness?

2.10 Case Study

What is meant by common-size statements? What purpose do they serve?

2.11 Further Readings

1. Aggarwal and Jain Advanced Financial Accounting.
2. S.N. Maheshwari, Introduction to Accounting.
3. R.L. Gupta, Advanced Accountancy.
4. Shukla and Grewal, Advanced Accounts.
5. Tulsin, Financial Accounting.

Block Summary

In this block we have studied accounting and financial statements. Introductory portion of both the topics have been covered over here in this block. We have studied about accounting in very detail. Accounting is a continious process of performance measurement and reporting the results to decision makers.

On the other hand we have studied about analysis of financial statements, we studied that it is the process of critically examining in detail accounting information given in the financial statements. For the proper analysis of financial statements various tools and techniques are available to us and of which we suit according to our need and convenience. Through the study of this block we came to realise that Analysing financial statements is a process of evaluating relationship between component parts of financial statements to obtain a better understanding of firm's position and performance. The principal tools of financial analysis include comparative financial statements, common size statements, trend analysis, cash flow statements, ratio analysis and fund flow statements.

Block Assignment

Short Answer Questions

1. Accounting
2. Bookkeeping
3. Accountancy
4. Analysis of financial statements
5. Trend analysis

Long Answer Questions

1. Distinguish between accounting and accountancy.
2. How common-size statements are different from comparative statements?
3. Discuss the differences between bookkeeping, accounting and accountancy.

Enrolment No. ☐

1. How many hours did you need for studying the units?

Unit No	**1**	**2**	**3**	**4**
Nos of Hrs				

2. Please give your reactions to the following items based on your reading of the block:

Items	Excellent	Very Good	Good	Poor	Give specific example if any
Presentation Quality	☐	☐	☐	☐	_____
Language and Style	☐	☐	☐	☐	_____
Illustration used (Diagram, tables etc)	☐	☐	☐	☐	_____
Conceptual Clarity	☐	☐	☐	☐	_____
Check your progress Quest	☐	☐	☐	☐	_____
Feed back to CYP Question	☐	☐	☐	☐	_____

3. Any Other Comments

……

……

……

……

……

……

……

……

……

Education is something which ought to be brought within the reach of every one.

- Dr. B. R. Ambedkar

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FINANCIAL STATEMENTS ANALYSIS

PGDF-203

BLOCK 2:
FINANCIAL STATEMENTS AND RATIO ANALYSIS

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FINANCIAL STATEMENTS ANALYSIS

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ROLE OF SELF INSTRUCTIONAL MATERIAL IN DISTANCE LEARNING

The need to plan effective instruction is imperative for a successful distance teaching repertoire. This is due to the fact that the instructional designer, the tutor, the author (s) and the student are often separated by distance and may never meet in person. This is an increasingly common scenario in distance education instruction. As much as possible, teaching by distance should stimulate the student's intellectual involvement and contain all the necessary learning instructional activities that are capable of guiding the student through the course objectives. Therefore, the course / self-instructional material are completely equipped with everything that the syllabus prescribes.

To ensure effective instruction, a number of instructional design ideas are used and these help students to acquire knowledge, intellectual skills, motor skills and necessary attitudinal changes. In this respect, students' assessment and course evaluation are incorporated in the text.

The nature of instructional activities used in distance education self-instructional materials depends on the domain of learning that they reinforce in the text, that is, the cognitive, psychomotor and affective. These are further interpreted in the acquisition of knowledge, intellectual skills and motor skills. Students may be encouraged to gain, apply and communicate (orally or in writing) the knowledge acquired. Intellectual-skills objectives may be met by designing instructions that make use of students' prior knowledge and experiences in the discourse as the foundation on which newly acquired knowledge is built.

The provision of exercises in the form of assignments, projects and tutorial feedback is necessary. Instructional activities that teach motor skills need to be graphically demonstrated and the correct practices provided during tutorials. Instructional activities for inculcating change in attitude and behavior should create interest and demonstrate need and benefits gained by adopting the required change. Information on the adoption and procedures for practice of new attitudes may then be introduced.

Teaching and learning at a distance eliminates interactive communication cues, such as pauses, intonation and gestures, associated with the face-to-face method of teaching. This is particularly so with the exclusive use of print media. Instructional activities built into the instructional repertoire provide this missing interaction between the student and the teacher. Therefore, the use of instructional activities to affect better distance teaching is not optional, but mandatory.

Our team of successful writers and authors has tried to reduce this.

Divide and to bring this Self Instructional Material as the best teaching and communication tool. Instructional activities are varied in order to assess the different facets of the domains of learning.

Distance education teaching repertoire involves extensive use of self-instructional materials, be they print or otherwise. These materials are designed to achieve certain pre-determined learning outcomes, namely goals and objectives that are contained in an instructional plan. Since the teaching process is affected over a distance, there is need to ensure that students actively participate in their learning by performing specific tasks that help them to understand the relevant concepts. Therefore, a set of exercises is built into the teaching repertoire in order to link what students and tutors do in the framework of the course outline. These could be in the form of students' assignments, a research project or a science practical exercise. Examples of instructional activities in distance education are too numerous to list. Instructional activities, when used in this context, help to motivate students, guide and measure students' performance (continuous assessment)

PREFACE

We have put in lots of hard work to make this book as user-friendly as possible, but we have not sacrificed quality. Experts were involved in preparing the materials. However, concepts are explained in easy language for you. We have included may tables and examples for easy understanding.

We sincerely hope this book will help you in every way you expect.

All the best for your studies from our team!

FINANCIAL STATEMENTS ANALYSIS

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UNIT 2 INTRODUCTION TO PENSIONS AND POST-RETIREMENT BENEFITS

Introduction, Analysis statements

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FINANCIAL STATEMENTS ANALYSIS

BLOCK 2: FINANCIAL STATEMENTS AND RATIO ANALYSIS

BLOCK 2: FINANCIAL STATEMENTS AND RATIO ANALYSIS

Block Introduction

Analysis of financial statement is considered to be one of the important subjects in the field of accounting and finance as it is the subject which measures the actual performance of the business. It is only because of this subject that we are able to measure the performance of the business, compare it with our standard or with our past performance and take corrective measure accordingly.

In this block the whole content has been divided into three units. The first unit will be covering the role of financial statements. Here in this unit you will be briefed about what are financial statements and why are they required? The purpose and structure of these statements will be briefed to you. In the second unit you will learn about much of about few of the very important topics of accounting. Here in this chapter we will be discussing about valuation of inventories and its methods; we will be covering up only few of the most important methods. We will also be discussing about depreciation but in a very superficial manner. Apart from this we will also be discussing other topics such as EPS, Intangible assets, deferred taxes and what are gain /loss on foreign exchange? Apart from this the third unit will be covering the topic ratio analysis and its uses. This unit will enable the readers to know how important tools are these ratios in analysis and interpretation of financial statements.

In this block we will be discussing the topics through three units. I.e. the whole content of this block has been divided into three units .the first unit will be discussing the role of financial statements; this portion will be the introductory one and will be discussing the basics of the topic. The second unit will be discussing the nuances of accounting and the third unit will be giving a brief introduction to ratio analysis. The benefits of studying this block will be that the reader would get a detailed insight of financial statements their role and importance, apart from this he will also get to know how to make use of ratios in order to make conclusions from the financial statements.

Block Objective

After learning this block, you will be able to understand:

- The auditor's report and other sources of vital financial information.
- Accounting equation.
- Structure of financial statements.
- Nuances of accounting.
- Calculation and interpretation of ratios.
- Make detailed study of ratios.

Block Structure

Unit 1: Introduction Role of Financial Statements

Unit 2: Nuances of Accounting: Inventories, Depreciation, Epps, Intangible Assets

Unit 3: Introduction to Ratio Analysis

UNIT 1: INTRODUCTION ROLE OF FINANCIAL STATEMENTS

Unit Structure

1.0 Learning Objectives

After learning this unit, you will be able to understand:

- Basics of Accounting.
- Various constituents of financial statements.
- Structure of financial statements.

1.1 Introduction

In this chapter we will be studying about financial statements in very detail. We will be learning that financial statements are a systematic record/presentation

of all such activities, summarised on a periodic basis, that give a glimpse into the working and performance of a company. This information is widely used by a range of stakeholders for economic decision making. The various stakeholders in a company include the owners of the company (shareholders) who have invested or intend to invest in the company, financial institutions that have extended credit to the company, suppliers, customers and employees of the company.

Financial Statements help in financial institutions like banks to assess the financial health of the company, thereby facilitating decision-making with respect to extension of credit to a business. A sufficient asset base and liquidity, apart from profitability, reduces the probability of a bad loan/ Non Performing Assets (NPA) for the bank. Suppliers need Financial Statements to assess the creditworthiness of a business and accordingly set the terms of credit while a customer may use financial statements to assess whether a supplier has the resources to ensure the steady supply of goods in the future. For this purpose we take help of balance sheet and profit and loss account and ratios to make analysis and this is all what we will learn in this unit.

1.2 Understanding Auditors Report and Other Sources of Information of Financial Information

Financial statements are a major source of information about a company, but not the only one. Financial statements are supplemented by other reports like Auditors' Report, Notes to accounts, management discussion, etc. Financial statements read together with all such reports, present a comprehensive picture of the activities of the company

Auditors' Report

Auditors are independent accountants who are registered to carry out the work of auditing the accounts of the company. They also have to certify that the accounts are drawn up in accordance with the requirements of the Companies Act and are in compliance with the Accounting Standards provided by the ICAI. Auditors must make a brief report to confirm that the accounts give a true and fair view of the company's financial position.

Depending on the opinion of the auditor about the conformity and genuineness of accounts, the audit report could be described as unqualified, qualified, adverse or disclaimer.

- An unqualified report is the clean report wherein the auditor concludes that the financial statements give a true and fair view of the financial position of the company and are in conformity with the generally accepted accounting principles (GAAP) as specified by ICAl.
- A qualified opinion report can result from a limitation on the scope of the audit or failure to follow generally accepted accounting principles.
- Adverse Report is used only when the auditor believes that the overall financial statements are so materially misstated or misleading that they do not present fairly the financial position or results of operations and cash flows in conformity with GAAP.
- A disclaimer is issued when the auditor is unable to satisfy him that the overall financial statements are fairly presented.

Notes to Accounts

Notes to accounts provides a more detailed analysis of some of the entries in the accounts including:-

- Disclosure of accounting policies used (e.g. method adopted for charging depreciation i.e. straight-line method or written down method or any other method) and any changes to these policies.
- An explanation for any deviation from accounting standards.
- Sources of turnover from different geographical areas.
- Details of fixed assets, investments, share capital, debentures and reserves.
- Directors' emoluments.
- Earnings per share.

Accounting policies

The companies inform about the accounting policies used in the preparation of financial statements. They have a choice of accounting policies in many areas such as foreign currencies, goodwill, pensions, sales and inventories. As different accounting policies will result in different figures, it is necessary to state the policy that was used so that readers of the accounts can make an informed judgment about the performance of the company. Companies also state the effect of any changes in accounting policies by restating prior year numbers where they are materially significant.

Certain companies also provide an overview of the accounting period from the management's perspective. The principal objective of this report is to supplement the financial information with other information considered necessary for a full appreciation of the companies' activities. It may cover a formalised and structured explanation of the operating and financial performance. The operating review covers item such as operating results, profit and dividend while the financial review may cover items such as capital structure and treasury policy.

Operating review includes the following:

- New product development
- Details of shareholders returns
- Risks and uncertainties
- Future investments
- Sensitivity of financial results to specific accounting policies financial review includes the following:
- Current cash position
- Sources of funding
- Treasury policy
- Capital structure
- Confirmation of the business as a going concern
- Factors outside the balance sheet impacting the value of the business
- Taxation

Check your progress 1

1. _____are a major source of information about a company.

   a. Financial Statements c. Money

   b. Finance d. funds

2. _____are independent accountants who are registered to carry out the work of auditing the accounts of the company.

   a. Managers c. Entrepreneurs

   b. Auditors d. Chartered accountants

3. _____provides a more detailed analysis of some of the entries in the accounts.

   a. Notes to accounts c. balance sheet

   b. Notes of Annexures d. income statement

4. _____Report is used only when the auditor believes that the overall financial statements are misstated and misleading.

   a. Positive c. indifferent

   b. Adverse d. Income

5. The companies inform about the accounting policies used in the preparation of _____.

   a. financial statements c. balance sheet

   b. ledgers d. Cash flow

1.3 Understanding Accounting Equation

So far we have discussed the financial statements and other sources of information and their importance. Now we discuss the basis of preparing these financial statements. As discussed in the Accounting Standard 1 Disclosure of Accounting Policies, the following are the generally accepted fundamental accounting assumptions:

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.

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

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.

Accrual Accounting Concept

According to the Accrual Concept of accounting, income and expenses are recognised in the accounting periods to which they relate, rather than on cash basis. This essentially means that income must be recorded in the accounting

period in which it is earned. Therefore, accrued income must be recognised in the accounting period in which it arises rather than in the subsequent period in which it will be received. Conversely, income received in advance must not be shown as income in the accounting period in which it is received but instead it must be presented as such in the subsequent accounting periods in which the services or obligations in respect of such income have been performed.

Expenses, on the other hand, must be recorded in the accounting period in which they are incurred. Therefore, accrued expense must be recognised in the accounting period in which it occurs rather than in the following period in which it will be paid. Conversely, prepaid expense must be not shown as expense in the accounting period in which it is paid but instead it must be presented as such in the subsequent accounting periods in which the services in respect of the prepaid expense have been performed. Accruals basis of accounting ensures that expenses are matched with the revenue earned in an accounting period.

An exception to this general rule is the cash flow statement whose main purpose is to present the cash flow effects of transaction during an accounting period

Accounting Equation

A Balance Sheet derives its name from the fact that a company's financial structure always balances accordingly to the following equation, known as the accounting equation:

Assets = Liabilities + Shareholders' Equity

The left hand side of the equation represents the assets or the things that a company owns and which have value. The light hand side of the equation represents the sources of funds used to fund the assets of the company. Assets of an entity may be financed either by external borrowing (i.e. liabilities) or from internal sources of finance such as share capital and retained profits (i.e. Equity). Therefore, assets of an entity will always equal to the sum of its liabilities and equity.

This means, in effect any transaction should affect both sides of the equation or balance itself on one side only. This attempt to record both effects of a transaction on the financial statement, to keep it in balance, is known as the double-entry concept or the duality principle. The two effects of anaccounting entry are known as Debit (Dr) and Credit (Cr). Accounting system is based on the principal that for every Debit entry, there will always be an equal Credit entry. Debit entries are ones that lead to increase in assets or expense or decrease in

liability, equity or income. On the other hand, Credit entries are ones that account for decrease in assets or expense or increase in liability, equity or income. Thus, any increase in expense (Dr) will be offset by a decrease in assets (Cr) or increase in liability or equity (Cr) and vice-versa, there by maintaining equilibrium in the accounting equation.

Business Entity Concept

Financial accounting is based on the premise that the transactions and balances of abusiness entity are to be accounted for separately from its owners. The business entity is therefore considered to be distinct from its owners for the purpose of accounting.

Limited Liability Concept

The companies in India are generally limited by shares. It means that the liability of a shareholder is limited to the face value of share contributed by the shareholder. Unlike a partnership firm in which partner is a part-owner of the firm and has unlimited liabilities towards the creditors in the event of insolvency, the liability of a shareholder is limited to the face value of share held by the shareholder. So in case of insolvency, partners of a firm will have to contribute from their personal assets for any payments due to creditors but shareholders will not have to contribute the same.

Check your progress 2

1. According to the _____of accounting, income and expenses are recognised in the accounting periods to which they relate, rather than on cash basis.

   a. Accrual Concept
   c. Money measurement concept
   b. Cash system
   d. Monetary concept

2. _____= Liabilities + Shareholders' Equity.

   a. Liability
   c. Income
   b. Assets
   d. loss

3. _____entries are ones that lead to increase in assets or expense or decrease in liability, equity or income.

   a. Debit
   b. credit

4. _____means that the liability of a shareholder is limited to the face value of share contributed by the shareholder.
   a. Unlimited liability concept
   b. Limited liability concept
5. _____entries are ones that lead to increase in assets or expense.
   a. Debit
   b. Credit

1.4 Understanding Relationship between Constituents of Financial Statements

The three financial statements are inter-related; they present a comprehensive financial picture only when read together in entirety. The income statement describes how the assets and liabilities were used in the stated accounting period? The cash flow statement explains cash inflows and outflows, and it will ultimately reveal the amount of cash the company has on hand, which is also reported in the balance sheet.

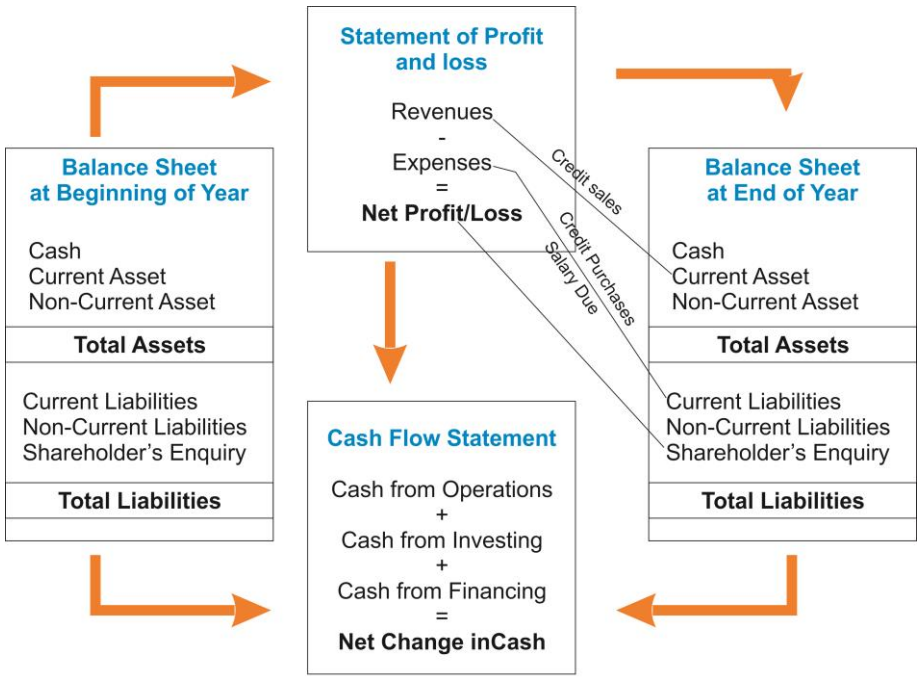

Fig 1.1 Inter relationship between the three statements

Balance Sheet

Balance Sheet is directly related to the income statement and cash flow statement as a balance sheet at the end of an accounting period relies for information on these statements and balances at the beginning of the accounting period. The net profit (or loss) reported in the profit and loss statement helps in determining the increase (or decrease) in equity of the company. The profit and loss statement, together with the cash flow statement determine the trade receivables and trade payables reflected in the balance sheet at the end of an accounting period. A balance sheet also consists of the change in composition of balances arising from inter balance sheet transactions like purchase of fixed assets, receipt of bank loan, issue of equity.

Income Statement

Profit and Loss Statement is also directly linked to balance sheet and cash flow statement. The increase or decrease in net assets of an entity arising from the profit or loss reported in the income statement is incorporated in the balances reported in the balance sheet at the end of the period. Net profit or loss during the year is also presented in the Balance Sheet under Shareholders' equity.

The profit and loss recognised in income statement is included in the cash flow statement under the segment of cash flows from operation after adjustment of non-cash transactions.

Cash Flow Statement

Cash Flow Statement is primarily linked to balance sheet as it explains the effects of change in cash and cash equivalents balance at the beginning and end of the reporting period in terms of the cash flow impact of changes in the components of balance sheet including assets, liabilities and equity reserves.

Cash flow statement therefore reflects the increase or decrease in cash flow arising from:

- Change in share capital reserves arising from share capital issues and redemption;
- Change in retained earnings as a result of net profit or loss recognised in the profit and loss statement (after adjusting non-cash items) and dividend payments;
- Change in long term loans due to receipt or repayment of loans;

- Working capital changes as reflected in the increase or decrease in net current assets recognised in the balance sheet;
- Change in non-current assets due to receipts and payments upon the acquisitions and disposals of assets.

Let we look at few examples, how the financial statements are interconnected:

1. An entity engaged in automobile manufacturing sold 40 units at the rate of INR 10,00,000 on credit, so it will record a total sales of INR 40.00 crore. This transaction would result in increase in sales (an income, a profit and loss account item) and corresponding increase in debtors (an asset; a balance sheet item). Now, the entity receives part payment for 35 units. So it will record it as reduction in debtors (an asset; abalance sheet item) and increase in cash (another asset; abalance sheet item). Now, suppose the debtors for balance 5 units i.e. INR 50,00,000 turn out to be bad debts. This would result in a decrease in asset (debtors) and increase in an expense (bad debts), this in turn will decrease the profits and thereby net worth (liability).
2. Now assume that the company has borrowed 1NR 10 crore on January 1, 2013 and INR 5 crore on March 1, 2013 both at 12% per annum interest rate, with interest payable on last date of every 3 months. So first interest payable date for first loan is March 31, 2013 and for second loan it is May 31, 2013. Now on March 31, 2013, the entity will record interest on first loan as reduction in cash and increase in expense. For the second loan interest is accrued but is not due, this would result in accrual entry on March 31, 2013. One month interest will be recorded as interest expenses and an increase in liability as accrued interest

Check your progress 3

1. The _____statement describes how the assets and liabilities were used in the stated accounting period.
   a. Income
   b. Expense
2. The _____flow statement explains cash inflows and outflows
   a. fund
   b. cash

3. _____Statement is also directly linked to balance sheet and cash flow statement.

   a. Profit and Loss

   b. Balance sheet

1.5 Understanding the Structure of Financial Statements

(I) Balance Sheet (Format as per Revised Schedule VI of the Companies Act, 1956).

Name of the Company - XYZ Ltd

Balance Sheet as at March 31, 2012

Balance Sheet as on 31st march, 20..

Particulars	**Note No.**	**Figure as at the end of Current reporting period**	**Figure as at the end of Previous reporting period**
I. Equity And Liabilities			
1) Shareholder's 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 borrowing			
(b) Deferred tax liabilities (net)			
(c) Other long term liabilities			
(d) Long term provisions			

4) Current Liabilities			
(a) Short-term borrowing			
(b) Trade payables			
(c) Other current liabilities			
(d) Short-term provisions			
Total			
II. Assets			
1) Non-current Assets			
(a) Fixed Assets			
1. Tangible Assets			
2. Intangible assets			
3. Capital work in progress			
4. Intangible assets under development			
(b) Non-current investments			
(c) Deferred tax assets (net)			
(c) 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			
See Accompanying notes to the financial statements Notes:			

Note: Generally assets are listed in increasing order of their liquidity or case of conversion into cash, while liabilities are listed based on reducing duration of the liability. For example, fixed assets are listed first while inventory (which is relatively more liquid) is listed later. Similarly on the liabilities side, long-term liabilities are listed above short term liabilities like creditors.

Shareholders' Funds

A company sources funds from shareholders by the issue of shares. It is the difference between the total assets and total liabilities of the company. It is thus, the investment made by the owners of the company and the return thereof.

Shareholders' funds consist of two parts:

- Share Capital - Face value of the shares issued to the shareholders in any of the following ways:
- Private Placement - Shares offered to select group of individuals or institutions.
- Public Issue - Shares offered to public. The details of the offer, including the reasons for raising the money are detailed in a prospectus to help investors make informed decision.
- Rights issues - Companies may also issue shares to their shareholders as a matter of right in proportion to their holding. So, if an investor has 100 shares and a company announces a 2:1 right, the investor stands to gain an additional 200 shares. Rights issues come at a price which the investors must pay by subscribing to the rights offer.
- Bonus shares - When a company has accumulated a large reserve out of profits, the company may distribute a part of it amongst the shareholders in the form of bonus. Bonus can be paid either in cash or in the form of shares. Cash bonus is paid in the form of dividend by the company when it has large accumulated profits as well as cash. Many a times, a company is not in a position to pay bonus in cash (dividend) in spite of sufficient profits because of unsatisfactory cash position or because of its adverse effects on the working capital of the company. In such a case, the company pays abonus to its shareholders in the form of shares. Bonus shares are shares issued free to shareholders by capitalizing reserves. No monies are actually raised from shareholders.

Shareholders can be divided into two. One, Equity Shareholders who are the real shareholders as they bear maximum risk and rewards related to a company.

The others are preference shareholders. As name suggests they have preference in certain matters. Preference Shares generally carry a fixed rate of dividend which is paid to them before any dividends are paid to equity shareholders. In case of liquidation as well, preference shareholders get preference over equity shareholders. As per Schedule VI, Preference Shares are reported under the Shares Capital heading. Preference Shares are of varied types, which include Cumulative, Redeemable and Perpetual etc.

- Reserves - Reserves are profits or gains which are retained and not distributed. Companies have two kinds of reserves:
- Capital Reserves - Capital reserves are gains that have resulted from an increase in the value of assets and they are not freely distributable to the shareholders. The most common capital reserves are the share premium account arising from the issue of shares at a premium and the capital revaluation reserve, i.e. unrealised gain on the value of assets.
- Revenue Reserves - These represent profits from operations ploughed back into the company and not distributed as dividends to shareholders. It is important that all the profits are not distributed as funds are required by companies to purchase new assets to replace existing ones, for expansion and for working capital.

Borrowings

The company also sources funds from external sources in form of borrowings. These may be taken for long term (when repayable after a year) or short term (repayable within a year). Moreover these could be secured or unsecured.

- Secured loans - These loans are taken by a company by pledging some of its assets or by a ceding charge (hypothecation or mortgage) in respective assets. The usual long term secured loans a company has debentures and term loans (having first charge on fixed assets) while short term secured loans include working capital borrowings (having first charge on current assets).
- Unsecured loans - Good name and creditworthiness may sometimes allow companies to raise loans without offering any hypothecation or mortgage to the lender. Fixed deposits and unsecured loans from relatives and friendsare examples of unsecured loans. In case a company is dissolved, unsecured lenders are usually paid after the secured lenders have been paid.

A credit analyst shall be well aware of various types of debt instruments and types of bank facilities. The same has been discussed in detail later in the book.

Current Liabilities - Current liabilities are amounts due that are payable within the next twelve months. These also include provisions which are amounts set aside for an expense incurred for which the bill has not been received as yet or whose cost has not been fully estimated.

- Creditors - Trade creditors are those to whom the company owes money for raw materials and other articles used in the manufacture of its products. Companies usually purchase these on credit - the credit period depending on the demand for the item, the standing of the company and market practice.
- Accrued Expenses - Certain expenses such as interest on bank overdrafts, telephone costs, electricity and overtime are paid after they have been incurred. This is because they fluctuate and it is not possible to either prepay or accurately anticipate these expenses. Such expenses are estimated based on past trends and reported in balance sheet as accrued expenses.
- Provisions - Provisions are amounts set aside for an estimated expense or loss. Certain provisions such as depreciation and provisions for had debts are deducted from the con-cerned asset itself. There are others, such as claims that may be payable, for which provisions are made. Other provisions normally seen on balance sheets are those for dividends and taxation.
- Other current liabilities - Any other amounts due like unclaimed dividends and dues payable 1k parties are reflected under this head.

Fixed Assets

Fixed assets are assets that a company owns for use in its business and to produce goods. They are not for resale in normal course of business and comprises of land, buildings i.e. offices, warehouses and factories, vehicles, machinery, furniture, equipment, etc.

Fixed assets are shown in the Balance Sheet at cost less the accumulated depreciation. Depreciation is based on the concept that an asset has a useful life and that after years of toil it wears down.

Consequently, it attempts to measure that wear and tear and to reduce the value of the asset accordingly so that at the end of its useful life, the asset will have no value. As depreciation is a charge on profits, at the end of its useful life, the company would have set aside from profits an amount equal to the original

cost of the asset and this could be utilised to purchase another asset. However, in the inflationary times, this is inadequate and some companies create an additional reserve to ensure that there are sufficient funds to replace the worn out asset. The common methods of calculating depreciation are:

- Straight line method - The net cost of the asset after adjusting for scrap value is written off equally over its life. Consequently, at the end of its useful life, the cost will equal the accumulated depreciation.
- Written Down Value Method (Reducing balance method) - Under this method, depreciation is calculated on the written down value, i.e. cost less depreciation. Consequently, depreciation is higher in the beginning and lower in the later years. An asset is never fully written off as the depreciation is always calculated on a reducing balance. Land is the only fixed asset that is never depreciated as it normally appreciates in value.

Capital work in progress is assets which are not fully operational yet like factories being con-structed, etc. These are not depreciated until it is a fully functional asset.

Investments

Many companies purchase investments in the form of shares or debentures to earn income or to utilize cash surpluses profitably. Investments could be in form of:

- Trade investments - These are investments made in shares or debentures of other companies for capital appreciation and dividend.
- Subsidiary and associate companies - These are shares held in subsidiary or associate companies in which the company has business interest.

Investments are also classified as quoted and unquoted investments. Quoted investments are shares and debentures that are quoted in a recognised stock exchange and can be freely traded while unquoted investments are not listed or quoted in a stock exchange. Consequently, they are not liquid and are difficult to dispose of.

Investments are valued and stated in the balance sheet at either the acquisition cost or market value, whichever is lower. This is in order to be conservative and to ensure that losses arc adequately accounted for.

Current assets

Current assets are assets owned by a company which are used in the normal course of business or are generated by the company in the course of business such as debtors or finished stock or cash. The rule of thumb is that any asset that is turned into cash within twelve months is a current asset. The current assets a company are:

(a) Inventories - These are arguably the most important current assets that a company has as it is by the sale of its stocks that a company makes its profits. Stocks, in turn, consist of:

- Raw materials - The primary purchase which is utilised to manufacture the products a company makes.
- Work in progress - Goods that are in the process of manufacture but are yet to be completed.
- Finished goods - The finished products manufactured by the company that are ready Stocks are valued at the lower of cost or net realizable value. This is to ensure that there will be no loss at the time of sale as that would have been accounted for. The common methods of valuing stocks are:

Check your progress 3

1. A company sources funds from _____by the issue of shares.
   a. shareholders
   b. creditors
2. When a_____has accumulated a large reserve out of profits, the company may distribute a part of it amongst the shareholders in the form of bonus.
   a. Huf
   b. Company
3. Shareholders can be divided into two equity and _____share holder.
   a. preference
   b. urgent
4. _____reserves are gains that have resulted from an increase in the value of assets.
   a. liability

b. capital

5. _____loans are taken by a company by pledging some of its asset.

a. Secured

b. unsecured

1.6 Let Us Sum Up

In this unit the writer has given a very detailed insight of the topic financial statements. Through this discussion we have understand in very detail the meaning of financial statements. We have understood what actually are these financial statements? We have also come to know the actual purpose of preparing such statements and why are they prepared. This chapter has also disclosed in very detail the importance of such statements, what are the various benefits for preparing such statements. Apart from providing us the interfirm and intra firm comparision these statements have several other benefits too. Apart from this these statements also suffers from several other disadvantages which have been discussed here in the chapter.

1.7 Answers for Check Your Progress

Check your progress 1

Answers: (1-a), (2-b), (3-a), (4-b), (5-a)

Check your progress 2

Answers: (1-a), (2-b), (3-a), (4-b), (5-a)

Check your progress 3

Answers: (1-a), (2-b), (3-a)

Check your progress 3

Answers: (1-a), (2-b), (3-a), (4-b), (5-a)

1.8 Glossary

1. **Profit and Loss account -** The object of profit and loss account is to reveal the net profit or loss of the business.
2. **Balance sheet -** A balance sheet is a statement which portrays the financial position of the business.

1.9 Assignment

Discuss the meaning of auditors report

1.10 Activities

What are the various sources of financial information for the auditor?

1.11 Case Study

Write a brief note on the structure of financial statements

1.12 Further Readings

1. Aggarwal and Jain Advanced Financial Accounting.
2. S.N. Maheshwari, Introduction to Accounting.
3. R.L.Gupta, Advanced Accountancy.
4. Shukla and Grewal, Advanced Accounts.
5. Tulsin, Financial Accounting.

UNIT 2: NUANCES OF ACCOUNTING: INVENTORIES, DEPRECIATION, EPS, INTANGIBLE ASSETS

Unit Structure

2.0 Learning Objectives

After learning this unit, you will be able to understand:

- The process of valuation of Inventories.
- Various Method of Charging depreciation.
- Earnings per share.
- Intangible Assets, deferred taxes etc.

2.1 Introduction

In this unit we are going to discuss the topic nuances of accounting under which we will study about valuation of inventories and its various methods. Apart from this we will also be discussing about depreciation and its methods. The concept of EPS would also be explained. Intangible assets, differed taxes and foreign exchange gain /loss will also be discussed in detail. This unit is considered to be one of the most important units as all these topics are one of the most important topics of accounting and for better understanding of this subject basic knowledge of these topics is a must.

2.2 Nuances of Accounting: Inventories

2.2.1 Valuation of Inventories

The literary meaning of the word inventory is stock of goods. To the finance manager, inventory connotes the value of raw materials, consumable, spares, work-in-progress, finished goods and scrap in which a company's funds have been invested. It constitutes the second largest items after fixed assets in the financial statements, particularly of manufacturing organisation. It is why that inventory valuation and inventory control has become very important functions of the accountants and finance managers. The persons interested in the accounting information assume that the financial statements contain accurate information. However, it is often observed that the financial statements don't provide actual information about some of the items, e.g. inventory and depreciation. This may be because of the variety of inventory valuation methods available with the accountant. According to the International Accounting Standard-2 (IAS-2),

'Inventories' mean tangible property held;

(a) For sale in the ordinary course of business,

(b) In the process of production for such sale, or

(c) For consumption in the production of goods or services for sale.

Hence, the term inventory includes stock of (i) raw material and components, (ii) work-in-progress and finished goods. In case of manufacturing concern, inventory consists of raw materials, components, stores, semi-finished products and finished goods in case of a trading concern inventory primarily consists of finished goods.

Various methods of Inventory valuation:

1. **First in First out (FIFO):** First in First out Method (FIFO): This method is based on the assumption that the materials which are purchased first are issued first. Issues of inventory are priced in order of their purchases. Inventory issues/sales are priced on the same basis until the first lot of material of goods purchased is exhausted. Thus, units issued are priced at the oldest cost price listed on the stock ledger sheets. Under this system it is not necessary that the materials which were longest in stock are exhausted first. But the use of FIFO necessarily means that the oldest costs are first used for accounting purposes. In practice, an endeavor is made by most business houses to sell of oldest merchandise or materials first. Hence when this system is followed the closing stock does not consist of most recently purchased goods.

Suitability: FIFO method is considered more suitable during the periods of falling prices. The reason is that the higher price at which the purchase of materials was made earlier stands recovered in cost. This method is suitable when the size of purchases is large but not much frequent. The moderate fluctuations in the prices of materials and easy comparison between different jobs are also the important conditions for the use of this method.

Illustration 1: The following is the record of receipts of certain materials during the month of January 2006:

Jan. 2 Received 500 Units @ Rs.20 per unit

Jan. 3 Received 400 Units @ Rs. 21 per unit

Jan. 15 Received 300 Units @ Rs. 19 per unit

Jan. 28 Received 400 Units @ Rs. 20 per unit

The physical inventory taken on 31st January. 2006 shows that there are 600 units in hand. Compute the inventory value on 31stJanuary, 2006 by FIFO method.

Solution: Under FIFO method, closing inventory includes recent purchases at most recent prices. Hence, the value of the inventory on 31st January will be as follows:

January 28 Purchases 400 units @ Rs. 20 = Rs. 8000

January 15 Purchases 200 units @ Rs. 19 = Rs. 3800

Rs. 11, 800

Here, the value of inventory as on 31st January 2006 has been arrived as on the presupposition that the firm uses periodic inventory system; the value of inventory would remain the same even if the perpetual inventory system is in use. To take an example, if out of 1000 units issued, 300 units were issued on January 5, while 700 units were issued on January 16, the valuation of inventory using perpetual inventory system will be done as follows:

Stock Ledger

Date	**Receipts**			**Issues**			**Balance**	
	Qty.	**Rate**	**Amount (Rs.)**	**Qty.**	**Rate**	**Amount (Rs.)**	**Qty.**	**Amount (Rs.)**
Jan.2	500	20	10,000	--	--	--	500	10,000
Jan.3	400	21	8.400	--	--	--	900	18,400
Jan. 5	--	--	--	300	20	6000	600	12,400
Jan.l5	300	19	5,700	--	--	--	900	18,100
Jan.16	--	--	--	200	20	4,000		
				400	21	8,400		
				100	19	1,900	200	3,800
Jan.28	400	20	8,000	--	--	--	600	11,800

From the above stock ledger it is obvious that the value of ending inventory under FIFO method is same in case of both periodic and perpetual inventory systems.

2. **Last in First out (LIFO):** Under this method, it is assumed that the material/goods purchased in the last are issued first for production and those received first issued/sold last. In case anew delivery is received before the first lot is fully used, price become the ‘last-in’ price and is used for pricing issued until either the lot is exhausted or a new delivery is received.

As stated above, materials are issued to production at cost which may be very near to current market price. However, inventories at the end will be valued at old prices which may be out of tune with the current market price.

Suitability: This method is most suitable for materials which are of a bulky and non-perishable type.

Illustration 2: With the information given in illustration (1), compute the inventory value on 31st Jan. 1998 by LIFO method. Also prepare a store ledger account showing how the receipts and issues on5th Jan and 700 units issued on 16th January 2006.

Solution: Under LIFO method, closing inventory includes most old purchases remaining unissued till last date. Hence, valuation of inventory under periodic inventory system would be as follows:

Hence, the values of the inventory on 31st January will be as follows:

Jan. 2	Purchases	200 units	@Rs.20	= Rs. 4,000
Jan. 28*	Purchases	400 units	@Rs.20	= Rs.8,000
				Rs. 12,000

Valuation of Inventory under perpetual inventory system.

Stock Ledger

Date	**Receipts**		**Issues**			**Balance**		
	Qty	**Rate**	**Amt.**	**Qty**	**Rate**	**Amt.**	**Qty**	**Amt.**
			(Rs.)			**(Rs.)**		**(Rs.)**
Jan 2	500	20	10,000	-	-	-	500	10,000
Jan 3	400	21	8,400	-	-	-	900	18,400
Jan 5	-	-	-	300	21	6,300	600	12,100
Jan 15	300	19	5,700	-	-	-	900	17,800

Jan 16	-	-	-	300	19	5,700		
				100	21	2,100		
				300	19	6,000	200	4,000
Jan 28	400	20	8,000	-	-	-	600	12,000
Jan 31	-	-	-	-	-	-	600	12,000

*Closing entry of 600 units includes 200 units purchased on 2nd January but remained unissued and 400 units purchased on 28th January remaining unissued upto 31st January.

Implications of FIFO and LIFO method in case of rising and falling prices: Both these methods value the products manufactured at true costs because both are based on actual cost. But in period of rising and falling prices both have conflicting result. In periods of rising prices the cost of production will be lower incase of FIFO method. This is simply because of the lowest material cost. Contrary to this, LIFO method will result in charging products at highest materials cost. Thus in case of rising price the application of FIFO method will result in higher profitability and higher income taxliability, whereas the application of LIFO method result in lower profitability, which in turn will reduce income tax liability. In periods of falling market, the cost of product will tend to be low with reference to the overall cost of inventory in case material cost is to be charged according to LIFO method. Hence, these methods will be resulting in inflating of profits and increasing the tax liability.

There verse will be the case if FIFO method is followed. Productions will be relatively overcharged. This will deflate the profits and reduce the income tax liability. In periods of falling prices the ending inventory will be valued in FIFO method at a price lower than in case of LIFO method. The reverses will be the case when the prices are rising. Interestingly, on the basis of above discussion, it may be concluded that in periods of falling prices, LIFO method tends to give a more meaningful balance sheet but less realistic income statement, whereas FIFO method gives a more meaningful income statement but a less realistic balance sheet. There verse will be the situation in periods of rising prices. Now the question arise about the superiority of the LIFO and FIFO methods. Based on forgoing discussion about implications of these methods in case of both rising and

falling markets, it may be concluded that each method has its own merits and demerits depending upon the circumstances prevailing at a particular moment of time. Thus, no generalisation can be made regarding superiority of LIFO over FIFO or vice-versa.

3. **Weighted average Method:** Under this method, the quantity of material purchased in various lots of purchases is considered as weight while pricing the materials. Weighted average price is calculated by dividing the total cost of material in stock by the total quantity of material at the end. When this method is adopted, the question of profit or loss out of varying prices does not arises because it evens out the effect of widely fluctuating prices of different lots of purchases. This method is very popular because it reduces calculations and is based on quantity and value of material purchased.

Illustration 3

The following are the details of transactions regarding receipt and issue of materials:

Date	**Quantity received**	**Rate**	**Quantity issued**
Jan.2, 2006	100	Rs. 1.00	—
Jan.9, 2006	150	Rs. l.20	—
Jan.14, 2006	—	—	125
Jan.17, 2006	250	Rs. l.30	—
Jan.19, 2006	—	—	100

You are required to prepare a stock ledger pricing the issue at (i) Simple average price and (ii) Weighted average price.

Solution

(i) Simple Average Price Method:

Stock Ledger

Working Notes

Average price on 14.1.2006 = (1.00 + 1.20)/2 = Rs. 1.10

Average price on 19.1.2006 = (1.20 + 1.30)/2 = Rs. 1.25

The price of the purchases that were made on 2nd January has been ignored while computing average price on 19.1.2006 since we have as summed that issue of 125 units on 14.1.2006 comprises all the 100units purchased on 2.1.2006.

Date	**Receipts**			**Issues**			**Balance**	
2006	**Qty**	**Rate**	**Amt**	**Qty**	**Rate**	**Amt**	**Qty**	**Amt**
Jan.2	100	l.00	100	—	—	—	100	100
Jan.9	150	1.20	180	—	—	—	250	280
Jan.14	—	—	—	125	1.10a	137.50	125	143
Jan.17	250	1.30	325	- -	—	—	375	518
Jan.19	—	—	—	100	1.25b	125.00	275	393

(ii) Weighted Average Price Method

Date	**Receipts**			**Issues**			**Balance**	
2006	**Qty.**	**Rate**	**Amt**	**Qty.**	**Rate**	**Amt**	**Qty.**	**Amt**
Jan.2	100	1.00	100	--	- -	--	100	100
Jan.9	150	1.20	180	--	--	--	250	280
Jan.14	--	--	--	125	1.12	140	125	140
Jan.17	250	1.30	325	--	--	--	375	465
Jan. 19	--	--	--	100	1.24	124	275	341

Working Notes

Weighted average price on January 14=280/250= 1.12

Weighted average price on January 19 = 465/375 = 1.24

4. **Specific Identification Method***:* Under this method, each item of inventory is identified with its cost. The values of inventory will be constituted by the aggregate of various costs so identified. This method is very suitable for job order industries which carry out individual or goods have been purchased for a specific job or customer.

   In other words, this method can be applied only where materials used can be specifically and big items such as high quality furniture, paintings, metal jewellery, cars, etc. However, this method is not appropriate in most industries because of practical problems. For instance; in case of any manufacturing company are having numerous items of inventory, the task of identifying the cost of every individual item of inventory becomes very difficult. Also, it promotes the chances of manipulating the cost of goods sold. It can be done by selecting items that have a relatively high cost or a relatively low cost, as he desires.

   Example: Suppose that following information is available from records:

   Opening inventory of material as on Jan. 1, 2000 at Rs.20 = 200units.

   Purchases of materials as on Jan.16, 2000 at Rs. 24 = 100 units

   Purchases of materials as on Jan.26, 2000 at Rs.30 = 150 units

   Total units available for sale = 450 units

   Units sold during January = 260 units

   Inventory of materials at January end = 190 units

   Now, if it assumed that the firm selected 200 items of materials that had a unit cost of Rs. 20 and 60 units of items that had a unit cost Rs. 24, the cost of goods sold for the firm would be as follow:

   Cost of 200 items = 200 × 20 = Rs. 4000

   Cost of 60 items = 60 × 24 = Rs. 1440

   Rs. 5440

   Whereas, if 260 items having highest cost are selected, then the cost of goods sold would be Rs. 7100 [(l50×30) + (l00×24) + (10×20)].

2.2.2 Methods of Depreciation

Generally, the term depreciation is used to denote decrease in value but in accounting, this term is used to denote decrease in the book value of fixed asset.

Depreciation is the permanent and continuous decrease in the book value of a fixed asset due to use, afflation of time, obsolescence, expiration of legal rights or any other cause. According to the Institute of Chartered Accountants of England and Wales, "Depreciation represents that part of the cost of a fixed asset to its owner which is not recoverable when the asset is finally out of use by him. Provision against this loss of capital is an integral cost of conducting the business during the effective commercial life of the asset and is not dependent on the amount of profit earned".

Depreciation is not the result of fluctuations in the value of fixed assets since, the fluctuation is concerned with the market price of the fixed asset whereas the depreciation is concerned with the historical cost.

Causes of Depreciation

The main causes of depreciation include the following:

(a) Physical wear and tear: When the fixed assets are put to use, the value of such assets may decrease. Such decrease in the value of assets is said to be due to physical wear and tear.

(b) With the passage of time: When the assets are exposed to the forces of nature like whether, winds, rains, etc., the value of such assets may decrease even if they are not put to any use.

(c) Changes in economic environment: The value of an asset may decrease due to decrease in the demand of the asset. The demand of the asset may decrease due to technological changes, changes in the habits of consumers etc.

(d) Expiration of legal rights: When the use of an asset (e.g., patents, leases) is governed by the time bound arrangement, the value of such assets may decrease with the passage of time.

Methods of Calculating Depreciation

The following are various methods of allocating depreciation in use:

1. Fixed installment method or straight line method.
2. Machine hour rate method.
3. Diminishing Balance method.
4. Sum of years digits method
5. Annuity method
6. Depreciation Fund Method

7. Insurance Policy Method
8. Depletion Method.

2.2.3 Earning Per Share

It measures the profit available to the equity shareholders on a per share basis, that is, the amount that they can get on every share held. It is calculated by dividing the profits available to the shareholders by the number of the outstanding shares. The profits available to be the ordinary shareholders are represented by net profits after taxes and preference dividend. Thus,

$$EPS = \frac{\text{Net profit available to equity holders}}{\text{Number of ordinary shares outstanding}}$$

2.2.4 Intangible Assets

Those assets which cannot be seen, touched and have no volume but have value are called intangible assets. Goodwill, patents and trademarks are examples of such assets. They are also written off from the Adjusted Profit and Loss Account. Till these assets are completely written off their balances will be shown in the Balance Sheet. Sometimes additions are also made to these assets.

Types of Intangible Assets

a. **Patents:** - A patent is a set of exclusive rights granted by a sovereign state to an inventor or assignee for a limited period of time in exchange for detailed public disclosure of an invention. An invention is a solution to a specific technological problem and is a product or a process.

b. **Trademarks:** - A trademark, trade mark, or trade-mark is a recognizable sign, design or expression which identifies products or services of a particular source from those of others. The trademark owners can be an individual, business organization, or any legal entity. A trademark may be located on a package, a label, a voucher or on the product itself. For the sake of corporate identity trademarks are also being displayed on company buildings. The owner of a trademark may pursue legal action against trademark infringement. Most countries require formal registration of a trademark as a precondition for pursuing this type of action.

c. **Patents:** - A patent is a set of exclusive rights granted by a sovereign state to an inventor or assignee for a limited period of time in exchange for detailed public disclosure of an invention. An invention is a solution to a specific technological problem and is a product or a process. Patents are a form of intellectual property.

d. **Goodwill:** - Goodwill in accounting is an intangible asset that arises when a buyer acquires an existing business, but pays more than the fair market value of the net assets (total assets - total liabilities). The goodwill amounts to the excess of the "purchase consideration" (the money paid to purchase the asset or business) over the total value of the assets and liabilities. It is classified as an intangible asset on the balance sheet, since it can neither be seen nor touched.

2.2.5 Deferred Taxes

Deferred taxes are created due to taxes paid or carried forward but not yet recognised in the income statement. Its value is calculated by taking into account financial reporting standards for book income and the jurisdictional tax authority's rules for taxable income. For example, deferred tax can be created due to the tax authority recognizing revenue or expenses at different times than that of an accounting standard. This asset helps in reducing the company's future tax liability.

2.2.6 Foreign Exchange Gain/Loss

Currency gains and losses are based on exchange rate fluctuations that occur on transactions that involve more than one currency. Two types of gains and losses exist:

Unrealised gains and losses: Unrealised gains and losses are calculated on unpaid invoices the open portion of partially paid invoices at the end of a fiscal period, whereas realised gains and losses are calculated at the time of receipt.

Realised Gain/Loss Calculations: To calculate realised gains and losses, you must post receipts. Realised gains and losses are based on exchange rate fluctuations that occur between transactions that involve a foreign or alternate currency receipt. When you post receipts, the system calculates gains and losses based on whether the exchange rates changed from the date of the invoice to the

date of the receipt. If exchange rates changed, the system creates journal entries for the gains and losses.

Realised gains and losses are calculated when you apply receipts to the invoices, but they are recognised in the general ledger when you post the receipts. To calculate the gain or loss, the system determines if the exchange rate changed between the invoice date and the receipt date

Check your progress 1

1. _____method is based on the assumption that the materials which are purchased first are issued first.

   a. FIFO c. Weighted average

   b. LIFO d. HIFO

2. _____method is considered more suitable during the periods of falling prices.

   a. FIFO c. Weighted average

   b. HIFO d. LIFO

3. Under _____method, it is assumed that the material/goods purchased in the last are issued first.

   a. LIFO c. Weighted average

   b. FIFO d. HIFO

4. Under_____, the quantity of material purchased in various lots of purchases is considered as weight while pricing the materials.

   a. HIFO c. Weighted average

   b. FIFO d. Weighted average method

5. _____tax is created due to taxes paid or carried forward but not yet recognised in the income statement.

   a. Deferred c. Weighted average

   b. Indirect d. HIFO

2.3 Let Us Sum Up

The valuation of inventories is done at lower of cost of net realizable value. There are various methods of valuation of inventory Specific Identification Method First In First Out Method (FIFO) Last In First Out Method (LIFO) Weighted Average Method In specific Identification method, the purchases of various items are identified till it has been sold or it is carried to closing inventory and thus the value of the inventory is arrived at using specific identification of inventory items. FIFO method assumes that the goods received first are sold/ consumed first and the closing inventory comprise of the latest purchased goods. The LIFO method assumes that the last received inventory is first of consumed and the inventory which is received first is carried to the closing inventory. In inflationary environment the value of inventory as per the FIFO will be higher than that of LIFO and the resultant profit will also be higher under FIFO than LIFO?

The weighted average cost method arrives at the weighted average cost of inventory in hand and determines the cost of sales based on the same. Under depreciation there are two commonly followed methods of depreciation straight line method written down value method accounting standard 6 - Depreciation Accounting governs the accounting for depreciation in India. It allows management to select the most appropriate depreciation method based on type of asset, nature of use and circumstances prevailing in the business. Every company shall charge depreciation at a minimum rate stipulated in the Schedule XIV of the Companies Act, 1956.

2.4 Answers for Check Your Progress

Check your progress 1

Answers: (1-a), (2-d), (3-a), (4-d), (5-a)

2.5 Glossary

1. **Depreciation -** It is the gradual and permanent decrease in the value of an asset from any cause.

2. **Depletion -** Depletion refers to the reduction in the workable quantity of a wasting asset.
3. **Obsolescence -** It represents loss in the value of an asset on account of its becoming obsolete or out of date.

2.6 Assignment

Write a brief note few of the methods of valuation of inventory.

2.7 Activities

Write a note on depreciation and its importance in accounting.

2.8 Case Study

How does foreign exchange loss or gain takes place?

2.9 Further Readings

1. Aggarwal and Jain Advanced Financial Accounting.
2. S.N. Maheshwari, Introduction to Accounting.
3. R.L.Gupta, Advanced Accountancy.
4. Shukla and Grewal, Advanced Accounts.
5. Tulsin, Financial Accounting.
6. Certified credit research analyst (Level 1), Taxmann.

UNIT 3: INTRODUCTION TO RATIO ANALYSIS

Unit Structure

3.0 Learning Objectives

After learning this unit, you will be able to understand:

- The meaning, uses and limitations of ratio analysis.
- Workout all the important ratios that are required to analyse liquidity.
- Position, operational efficiency, capital structure, profitability and solvency.
- Position of manufacturing, trading, and service concerns.

3.1 Introduction

Analysis of financial statements is the process of critically examining in detail accounting information given in the financial statements. For the purpose of analysis, individual items are studied, their interrelationships with other related figures are established and the data is sometimes rearranged to have better understanding of the information with the help of different techniques or tools for the purpose.

Analysing financial statements is a process of evaluating relationship between component parts of financial statements to obtain a better understanding of firm's position and performance. The analysis of financial statements thus refers to the treatment of the information contained in the financial statements in a way so as to afford a full diagnosis of the profitability and financial position of the firm concerned. For this purpose financial statements are classified methodically, analysed and compared with the figures of previous years or other similar firms. The term 'Analysis' and 'interpretation' are closely related, but distinction can be made between these two. Analysis means evaluating relationship between components of financial statements to understand firm's performance in a better way.

Various account balances appear in the financial statements. These account balances do not represent homogeneous data so it is difficult to interpret them and draw some conclusions. This requires an analysis of the data in the financial statements so as to bring some homogeneity to the figures shown in the financial statements. Interpretation is thus drawing of inference and stating what the figures in the financial statements really mean. Interpretation is dependent on interpreter himself. Interpreter must have experience, understanding and intelligence to draw correct conclusions from the analysed data.

3.2 Calculate and interpret ratios

A ratio is a simple arithmetical expression of the relationship of one number to another. According to Accountant's Handbook by Wixon, Kell and bedbord, "a ratio" is an expression of the quantitative relationship between two numbers". In simple language ratio is one number expressed in terms of the other and can be worked out by dividing one number into the other. This relationship can be expressed as

Percentages, say, net profits are 20 per cent of sales (assuming net profits of Rs.20,000 and sales of Rs. 1,00,000), Fraction (net profit is one-fourth of sales) and Proportion of numbers (the relationship between net profits and sales is (1:4).

The rational of ratio analysis lies in the fact that it makes related information comparable. A single figure by itself has no meaning but when expressed in terms of a related figure, it yields significant inferences. Ratio analysis helps in financial forecasting, making comparisons, evaluating solvency position of a firm etc. For instance: the fact that the net profits of a firm amount to, say, Rs. 20 lakhs throws no light on its adequacy or otherwise. The figure of net profit has to be considered in relation to other variables. How does it stand in relation to sales? What does it represent by way of return on total assets used or total capital employed? In case net profits are shown in terms of their relationship with items such as sales, assets, capital employed, equity capital and so on, meaningful conclusions can be drawn regarding their adequacy. Ratio analysis, thus, as a quantitative tool, enables analys its to draw quantitative answers to questions such as: Are the net profits adequate? Are the assets being used efficiently? Can the firm meet its current obligations and so on? However, ratio analysis is not an end in itself. Calculation of mere ratios does not serve any purpose, unless several appropriate ratios are analysed and interpreted. The following are the four steps involved in the ratio analysis:

(i) Selection of relevant data from the financial statements depending upon the objective of the analysis.

(ii) Calculation of appropriate ratios from the above data.

(iii) Comparison of the calculated ratios with the ratios of the same firm in the past, or the ratios developed from projected financial statements or the ratios of some other firms or the comparison with ratios of industry to which the firm belongs.

The interpretation of ratios is an important factor. Though calculation is also important but it is only a clerical task whereas interpretation needs skills, intelligence and foresightedness. The interpretations of the ratios can be done in the following ways:

1. **Single Absolute Ratio:** Generally speaking one cannot draw meaningful conclusions when a single ratio is considered in isolation. But single ratios may be studied in relation to certain rules of thumb which are based upon well proven contentions as for example 2:1 is considered to be a good ratio for current assets to current liabilities.
2. **Groups of Ratio:** Ratios may be interpreted by calculating a group of related ratios. A single ratio supported by related additional ratios becomes more understandable and meaningful.
3. **Historical Comparisons:** One of the easiest and most popular ways of evaluating the performance of the firm is to compare its present ratios with the past ratios called comparison over time.
4. **Projected Ratios:** Ratios can also be calculated for future standard based upon the projected financial statements. Ratio calculation on actual financial statements can be used for comparison with the standard ratios to find out variance, if any. Such variance helps in interpreting and taking corrective action for improvement in future.
5. **Inter-firm Comparison:** Ratios of one firm can also be compared with the ratios of some other selected firms in the same industry at the same point of time.

Check your progress 1

1. A _____is a simple arithmetical expression of the relationship of one number to another.

   a. ratio

   b. function

2. The rational of ratio analysis lies in the fact that it makes related information_____.

   a. Un comparable

   b. comparable

3.3 Calculate and Interpret Certain Ratios

In the previous unit, we discussed about the key financial ratios. Here, we would discuss what kind of adjustments an analyst can think of while calculating financial ratios for better analysis. This is quite an interesting and exhaustive topic. Common areas of adjustments made by analysts are:

1. Non-operating/ Extraordinary/ prior period income and expenses.
2. Change in accounting policy.
3. Intangible assets.
4. Capital work in progress or Capital Expenditure in initial stage of operation.
5. Quasi-equity debt or convertible debt.
6. Off-balance sheet items Non-operating/ Extraordinary/ Prior-period income and expense – Analyst should always calculate the clean EBITDA for better analysis purpose as non-operating/ extraordinary/ prior-period items are non-recurring event in nature. For ex – Two firm's have same level of total income and operating cost with the only difference being that one firm has a non-operating income of INR 10 and the other has non-operating expense of INR 10.

Particulars	ABC	XYZ
Total Income	100	100
EBITDA inclusive of non-operating items	25	25
Non-operating income	10	0
Non-operating expense	10	10

Without adjusting for non-operating items, no difference appears in both the firm's performance. After adjusting for non-operating items, XYZ has performed relatively better than ABC. The calculation of the same is as follows:

Particulars	ABC	XYZ
Total Income	100	100
Less: Non operating income	(10)	0
Total operating income	90	100
Non-operating expense	10	10
EBITDA inclusive of non-operating items	25	25
Less: Non-operating income	(10)	0
Add: non-operating expense	0	10
Clean EBITDA	15	35
EBITDA Margin	16.7%	35%

Change in accounting policy – It is generally observed that management resorts to different accounting policy to inflate or deflate its PAT. For ex – Change in inventory valuation from FIFO to LIFO during falling inventory price scenario will result in higher profitability. While calculating ratios, analysts should exclude the impact of change in accounting policies so as to assess the relative performance of the firm with its historical performance and to its peers.

Intangible Assets – Intangible assets should be deducted from net worth so as to evaluate the correct firm's leverage position. It is sometimes seen that companies revalue their fixed assets in order to inflate their net worth. In such cases, all the intangible assets should be deducted from net worth as revaluation of fixed assets will not result in higher cash operating income and the firm will not sell the fixed assets (even though there has been a sharp increase in market value compared to book value) as the firm will continue to operate on a going concern basis.

Capital work in progress or Capital Expenditure in initial stage of operation – A company undergoing a major capital expenditure is expected to generate lower ROA compared to its peers with no capex plan as the cash flow from capital expenditure will flow in future periods. In such scenario, the analyst should calculate ROA on operating assets for better relative comparison purpose (i.e. Total Assets – Capital Work in Progress).

Quasi-equity debt or convertible debt – In the current scenario, companies are raising funds in quasi-equity form where the amount would be initially considered as a debt and after a specified tenure it would get converted into equity. As the firm has no obligation to repay the amount, analyst should calculate the leverage ratio by considering it as equity.

ILLUSTRATION: Calculate total debt-equity ratio based on following financials Equity 100, LT debt 75, Quasi-equity 50, ST debt 50, Total debt 175

Answer: Total debt to equity ratio =175/100 1.75 times

If analysts convert quasi-equity debt into equity, then adjusted total debt to equity ratio would be

Equity 100

Quasi-equity 50

Total equity 150

LT debt 75

ST debt 50

Total debt 125

Total Debt to Equity 0.833

Off-balance sheet items – Asset or debt that does not appear on a company's balance sheet. Items that are considered off balance sheet are generally ones in which the company does not have legal claim or responsibility for. Generally, company's attempt to show its balance sheet less leveraged with the help of off-balance sheet items by not recognizing the certain liabilities or moving the liabilities from balance-sheet to off-balance sheet items. For expending litigation cases, bank guarantee, bills discounting. In case of bills discounting, analyst should add back the amount to debtors and bank borrowings. In case of bank guarantee, analyst should load the guarantee amount to the total debt (in line with repayment) to assess the leverage ratio, if the firm is asked to make the payment

for the guarantee amount in future.

Calculate the adjusted gearing ratio based on below information:

Balance Sheet

Networth 100

Total Debt 200

Off Balance sheet items

Bill Discounting 15

Bank Guarantee 25

Answer: Based on balance sheet items, gearing ratio turns out to be 2: 1 whereas gearing ratio increases to 2.4: 1.0 after accounting for off-balance sheet items.

Total Debt 200

Bill Discounting 15

Bank Guarantee 25

Adjusted Debt 240

Networth 100

Gearing ratio 2.4

Check your progress 2

1. _____ assets should be deducted from net worth so as to evaluate the correct firm's leverage position.

   a. Intangible

   b. tangible

2. A company undergoing a major capital expenditure is expected to generate ____ROA.

   a. higher

   b. lower

3. An asset or debt that does not appear on a company's balance sheet is called _____ balance sheet items.

   a. off

   b. on

4. In case of bills_____, analyst should add back the amount to debtors and bank borrowings.

   a. dishonour

   b. discounting

3.4 Uses and Limitations of Ratio Analysis

3.4.1 Uses of Ratio Analysis

The following are the important managerial uses of ratio analysis –

1. **Helps in Financial Forecasting:** Ratio analysis is very helpful in financial forecasting. Ratios relating to past sales, profits and financial position form the basis for setting future trends.

2. **Helps in Comparison:** With the help of ratio analysis, ideal ratios can be composed and they can be used for comparing a firm's progress and performance. Inter-firm comparison or comparison with industry averages is made possible by the ratio analysis.

3. **Financial Solvency of the Firm:** Ratio analysis indicates the trends in financial solvency of the firm. Solvency has two dimensions-long-term solvency and short-term solvencies. Long-term solvency refers to the financial viability of a firm and it is closely related with the existing financial structure. On the other hand, short-term solvency is the liquidity position of the firm. With the help of ratio analysis conclusions can be drawn regarding the firm's liquidity and long term solvency position.

4. **Evaluation of Operating Efficiency:** Ratio analysis throws light on the degree of efficiency in the management and utilisation of its assets and resources. Various activity ratios measure this kind of operational efficiency and indicate the guidelines for economy in costs, operations and time.

5. **Communication Value:** Different financial ratios communicate the strength hand financial standing of the firm to the internal and external parties. They indicate the overall profitability of the firm.

6. **Others Uses:** Financial ratios are very helpful in the diagnosis of financial health of a firm. They highlight the liquidity, solvency, profitability and capital gearing etc. of the firm.

3.4.2 Limitations of Ratio Analysis

1. **Limited use of a single ratio:** Ratio can be useful only when they are computed in a sufficient large number. A single ratio would not be able to convey anything. At the same time, if too many ratios are calculated, they are likely to confuse instead of revealing any meaningful conclusion.

2. Effect of inherent limitations of accounting: Because ratios are computed from historical accounting records, so they also possess those limitations and weaknesses as accounting records possess.

3. **Lack of proper standards:** While making comparisons, it is always a challenging job to find out an adequate standard. It is not possible to calculate exact and well accepted absolute standard, so a quality range is used for this purpose. If actual performance is within this range, it may be regarded as satisfactory.

4. **Past is not indicator of future:** It is not always possible to make future estimates on the basis of the past as it always does not come true.

5. **No allowance for change in price level:** While making comparisons of ratios, no allowance for changes in general price level is made. A change in price level can seriously affect the validity of comparisons of ratios computed for different time periods.

6. **Difference in definitions:** Comparisons are also made difficult due to differences in definitions of various financial terms. The terms like gross profit, net profit, operating profit etc. have not precise definitions and an established procedure for their computation.

7. **Window Dressing:** Financial statements can easily be window dressed to present a better picture of its financial and profitability position to outsiders. Hence one has to be careful while making decision on the basis of ratios calculated from such window dressing made by a firm.

8. **Personal Bias:** Ratios are only means of financial analysis and is not an end in itself. Ratios have to be interpreted carefully because the same ratio can be looked at, in different ways.

Check your progress 3

1. _____is very helpful in financial forecasting.

   a. Ratio analysis

   b. Financial analysis

2. Ratio analysis indicates the _____in financial solvency of the firm.

   a. loss

   b. trends

3. Ratio analysis throws _____on the degree of efficiency in the management and utilization of its assets and resources.

   a. light

   b. darkness

4. Financial ratios are very helpful in the diagnosis of financial _____of a firm.

   a. Profit

   b. Health

5. Ratio can be useful only when they are computed in a sufficient _____number.

   a. large

   b. small

3.5 Ratios

3.5.1 Trailing Ratios and Forward Ratios

Accounting periods may differ from company to company and also geographically. For ex – Accounting period for most US based companies is January-December while accounting period for Indian-based companies is April-

March. Relative comparison between firms with different accounting period becomes difficult due to various factors such as seasonal nature of product, change in economic cycle, etc. Various accounting periods are discussed as under:

(1) Last Fiscal Year (LFY) - A fiscal year is a 12 month accounting cycle. The cycle begins on the first day of every month and ends on the last day of the 12th month thereafter. LFY is the fiscal year that immediately preceded its current fiscal year. For ex – Suppose a firm XYZ Ltd fiscal year begins from 1st April and ends on 31st March. As of August 26, 2013, Company XYZ's last fiscal year would be the one that began April 1, 2012 and ended March 31, 2013. Analysts constantly refer to a firm's LFY when measuring and tracking performance and reporting functions. LFY is the starting point for most analyses and forecasts for the current fiscal year.

(2) Trailing Twelve Months (TTM) - TTM is slightly different from LFY as it is the 12-month period that occurs before a designated point in time. It is measured by referring to the company's interim reports such as (quarterly, semi-annually) to analyze the firm's most recent twelve month financial performance. For example, an analyst issuing a report on August 26, 2013 will report TTM earnings as those from July 1, 2012 to June 30, 2013.

(3) Leading Twelve Months (LTM) - While LFY and TTM takes into account historical financials; LTM looks at financials over the next twelve months from a designated point in time. LTM is used to assess the firm's short-term financial outlook. It is relevant in case of companies with a new product line, high growth scenario or acquisition, etc. The LTM projection would capture the estimated full performance of such addition or event. The difference between TTM and LTM is that TTM gives more weightage to the most recent 12 month performance whereas LTM gives more weightage to the next 12 month performance.

3.5.2 Valuation Ratios

The theory of buying low and selling high makes investing seem all too easy. For many, it is difficult to truly know when prices are cheap or expensive. In theory, the value of an investment is equal to the sum of its earnings or cash flows, are discounted by some expected rate of return. From this general theory, many different short-hand methods have evolved to assist investors in making a quick determination as to a company's investment value using valuation ratios. Relative valuation metrics are based on the premise that all the companies

operating in similar line of products with more or less same fundamentals should trade in-line with the stock's historical average levels or industry average levels. Generically speaking, based on relative valuation parameter, a company is viewed to be a good investment bet if it trades below historical average levels or industry average levels. Various valuation ratios are discussed as under: (1) Price to Earnings Ratio (P/ E) It is the ratio of market price per share to expected earnings per share. It indicates how much investors are willing to pay per rupee of its expected earnings over next one year (i.e. Y + 1). This is the most popular relative valuation metric of stock analysis.

Formula: It is calculated by dividing current price per share by earnings per share

P/E Ratio= Current price per share/expected earnings per share

Interpretation: The Company with a higher P / E ratio is considered to be expensive or have low return potential compared to company with a lower P/ E ratio. It is usually not enough to look at the P/ E ratio of one company and determine its status. Usually, an analyst should look at a company's P/ E ratio (say XYZ Ltd) compared to the industry (say steel industry) as well as the overall broad market (say NSE Index). The P/ E ratio is also not self-explanatory by itself. For ex- A high P/ E may suggests that investors are expecting higher earnings growth in the future compared to companies with a lower P/ E. Thus, an analyst needs to be careful while interpreting P/ E ratio.

Price/ Earnings to Growth Ratio (PEG) A stock's P/ E ratio determines a stock's value while taking the company's earnings growth for a specified time period (i.e. generally next one year). This ratio becomes redundant for companies with high growth potential as compared to the average industry growth levels. To provide a more complete picture than P/ E ratio, price/ earnings to growth (PEG) ratio takes the company's earnings growth into account for determining a stock's value. For ex – A stock with a high P/ E ratio may look expensive, but PEG (i.e. factoring in the company's EPS growth rate for 5-10 years period) may tell a different story. The lower the PEG ratio, the more the stock may be undervalued given its earnings performance. Formula: It is calculated by dividing stock's price-to-earnings ratio by the growth rate of its earnings for a specified time period. The earnings growth rate in the formula is expressed as a percentage above 100%, and should use real growth only, to correct for inflation. E.g. if a company is growing at 10% a year, and has a P/ E of 20, it would have a PEG of 2. PEG Ratio = (Price/ Earnings) / Earnings growth rate.

Interpretation: By taking into consideration growth of the company's earnings, we can see that a low PEG ratio means that the company is trading at a low price relative to its earnings growth potential. A high PEG ratio means that the company's stock is trading at a high price relative to its earnings growth potential.

Price to Book ratio P/ E ratio or PEG ratio becomes meaningless for a start-up firm or a firm expected to report negative EPS. It is a ratio used to compare a stock's market value to its book value. This ratio gives an idea of whether you're paying too much for what would be left if the company went bankrupt immediately. Formula: It is calculated by dividing the current closing price of the stock by the latest quarter's book value per share. Price to Book Ratio = Share Price (Y0) ÷ Book Value per Share (Y + 1) Interpretation: The price-to-book ratio indicates whether or not a company's asset value is comparable to the market price of its stock. For this reason, these can be useful for finding value stocks. It is especially useful when valuing companies that are composed of mostly liquid assets, such as finance, investment, insurance, and banking firms.

Assume that the stock of Company XYZ is trading at INR 6 per share, there are 100 shares outstanding and the owner's equity amounts to INR 500. Thus, book value per share will be INR 5 (500/ 100) and Price to Book ratio will be INR 1.2 (6/ 5).

Price to sales ratio (P/ S) the disadvantage of using P/ E ratio for cyclical firms as the firm's earnings is highly sensitive to both operating leverage and financial leverage. In such cases, the P/ S ratio may be favoured over the P/ E ratio as sales are less volatile. P/ S ratio shows how much the markets value every rupee of the company's sales. The smaller this ratio (i.e. less than 1.0) is usually thought to be a better investment since the investor is paying less for each unit of sales. Formula: It is calculated by dividing a stock's current price by its revenue per share for the leading 12 months. P/ S = Stock Price (Y0) ÷ Expected Sales per Share (Y + 1) OR = Market Capitalization (Y0) ÷ Total Sales (Y + 1)

Interpretation: The lower the ratio, the better the values of the company's share. However one must be careful using the same as it might not always be a positive indicator because the company might be unprofitable with a lower price/ sales ratio.

EV/ EBITDA ratio EV/ EBITDA valuation is used for relative comparison of firms with significant differences in capital structure. This is a very commonly used metric for estimating the business valuations. It compares the value of a

company, inclusive of debt and other liabilities, to the actual cash earnings exclusive of the non-cash expenses. Formula: The EV/ EBITDA ratio is calculated by dividing the EV by EBITDA. EV/ EBITDA = Enterprise Value (Y0) ÷ Expected EBITDA (Y + 1) where, EV = firm's market capitalization + market value of debt – cash and short-term investments

Interpretation: A low ratio indicates that a company might be undervalued. Note that the analyst can use the latest book value of debt or the market value of similar bonds, if the firm's market value of debt is not available.

Price to Cash Flow ratio (P/ CF) It evaluates the price of a company's stock relative to how much cash flow the firm is generating. It removes the effect of non-cash items like depreciation.

Formula: It is calculated by dividing the company's price per share by the company's operating cash flow per share in the most recent fiscal year.

P/CF Ratio=Current price per share/Expected cash flow per share

Interpretation: A high P/ CF ratio indicated that the specific firm is trading at a high price but is not generating enough cash flows to support the multiple. Smaller price ratios are generally preferred, as they may reveal a firm generating ample cash flows that are not yet properly considered in the current share price. Holding all factors constant, from an investment perspective, a smaller P/ CF is preferred over a larger multiple.

3.5.3 Credit Specific Ratios

From credit analysis perspective, the lender is concerned about timely receipt of interest and principal repayment obligation mainly from cash flow from operation. It is always desirable if the project/ firm generates high ROE, however, the lender may be willing to lend even if the project/ firm is expected to generate low ROE. Following ratios are of high importance from credit angle:

1. Interest Coverage
2. DSCR
3. Current ratio
4. Quick ratio
5. Debt-equity ratio
6. Overall gearing ratio

7. Total debt to Cash Flow from Operation

1. Interest Coverage – It is calculated as EBITDA divided by interest. This shows the number of times the cash earnings of the firm sare able to cover the fixed interest liability of the firm. A ratio of less than one indicates that the firm is not able to generate enough cash from operation to service its interest obligation. Thus, higher the interest coverage ratio, the better it is for the company.

2. Debt Service Coverage Ratio (DSCR): It is the amount of cash flow available to meet annual interest, lease and principal payments on debt. It is similar to interest coverage ratio with the difference that interest coverage only considers interest obligation whereas it takes all the debt obligation of the firm. A DSCR of less than one indicates a negative cash flow i.e. firm need to resort to fresh equity or debt to repay its existing debt obligation.

3. Current ratio: Current ratio measures the short-term solvency of the firm as current assets would be utilised to pay the short-term liabilities. A company with less than one current ratio indicates that the company has financed its long-term fixed assets by resorting to short-term funds which may result in liquidity crisis in future. Thus, it is desirable to have current ratio higher than one high current ratio is viewed favourably for the firm. Note that high current ratio does not implies that the firm can meet short-term liabilities on time by easily converting its current assets into cash as the firm might be maintaining illiquid inventories or has not written off bad debts from debtors to inflate its current ratio.

4. Quick Ratio: The quick ratio is a more stringent measure of liquidity than the current ratio because it excludes inventories which may be difficult to convert into cash in a short-term (i.e. sell inventories and realize cash from debtors). It is also commonly known as acid test ratio.

5. Debt-equity ratio: It indicates the management reliance on external debt compared to use of own equity for financing long-term fixed assets. Higher than industry average is viewed as an aggressive method of financing and increases the financial risk to the concern.

6. Overall Gearing or Total debt to equity ratio: It indicates the management reliance on external debt compared to use of own equity for financing total assets (i.e. fixed assets and current assets). Higher than industry average increases the financial risk to the concern. This ratio is a more reliable indicator for leverage compared to debt-equity ratio as it may happen that a

firm might be resorted to higher than industry average debt-equity ratio but has lower than industry average total debt to equity ratio to reduce its interest costs (interest cost on long term debt is generally seen lower than cost on working capital loan).

7. Net Gearing ratio: It indicates the management reliance on external debt compared to use of own equity for financing total assets (i.e. fixed assets and current assets). Higher than industry average increases the financial risk to the concern. This ratio is a more reliable indicator for leverage compared to debt-equity ratio as it may happen that a firm might be resorted to higher than industry average debt-equity ratio but has lower than industry average total debt to equity ratio to reduce its interest.

8. Total debt to Cash Flow from Operation (CFO): This ratio indicates the average tenure of total debt which can be repaid from internal cash accrual from operation. Higher than industry average ratio indicates that the firm is highly levered and vice versa.

9. Total debt to EBITDA: This ratio indicates the average tenure the firm would require to pay off total debt ignoring the factors of interest, depreciation &amortization and taxes. Higher than industry average ratio indicates that the firm is highly levered and vice versa. This ratio is commonly used by credit rating agencies.

Check your progress 4

1 _____periods may differ from company to company and also geographically.

a. Accounting

b. auditing

2. A fiscal year is a_____ month accounting cycle

a. 10

b. 12

3. The theory of buying _____and selling high makes investing seem all too easy.

a. low

b. high

4. _____ratio measures the short-term solvency of the firm as current assets would be utilised to pay the short-term liabilities

   a. liquid

   b. current

5. The _____ratio is a more stringent measure of liquidity than the current ratio.

   a. quick

   b. current

3.6 Ratio's During Mergers and Acquisitions, Leverage, Buyouts and Restructuring

In case of mergers & acquisition, corporate restructuring (i.e. spin off, divestiture, etc.) or leverage buy out, the analyst need to be very careful while calculating and interpreting ratios for meaningful analysis. Companies usually resort to inorganic growth opportunities to improve its financials or carry out restructuring activities for operational efficiencies or for tax benefits. In such cases, the analyst should do the necessary adjustments before calculating the ratios. For ex – If a company discontinued its one segment operation, then previous year financials should be adjusted by deducting the amount related to the discontinued operation.

Check your progress 5

1. In case of_____, the analyst need to be very careful while calculating and interpreting ratios for meaningful analysis.

   a. mergers & acquisition

   b. dissolution

3.7 Evaluate Two Companies Using Ratio Analysis

Ratio analysis is ineffective when used in isolation. There must be a minimum of two sets of data to enhance the usefulness of ratio analysis. Generally, a ratio is interpreted relative to one of the three factors i.e. industry norms, overall economic norms, and the company's own historical performance. Relative comparison with peers or industry is the most common type of comparison, but analyst should keep in mind that the product profile of peers or industry should be similar to the company's profile under analysis. In relative comparison, it is desirable the performance metric or ratio to be near the benchmark ratio (i.e. peers, industry and economy). A sharp deviation from benchmark ratio should be viewed favourably or unfavourably for the company. However, the analyst needs to be careful while making an analysis on relative performance comparison i.e. a good ratio does not normally indicates a better performance or bad ratio indicates inferior performance. For ex – A high ROE is generally viewed favourably. However, high ROEs that result on account of high use of leverage should be viewed with a great deal of scepticism. Similarly, a low ROE is generally viewed favourably. However, a company undergoing a major capital expenditure is expected to generate lower ROE compared to its peers with no capex plan as the cash flow from capital expenditure will flow in future periods.

Check your progress 6

1. _____is ineffective when used in isolation.

   a. Ratio analysis

   b. Valution

2. A _____deviation from benchmark ratio should be viewed favourably or unfavourably for the company.

   a. slight

   b. sharp

3.8 DuPont Analysis and its Importance

The primary objective of a business is to earn profits for its equity shareholders [i.e. return on equity (ROE) metric in ratio analysis]. DuPont analysis is an approach that can be used to analyze ROE in detail. Note that the analyst can calculate ROE with the help of net income and equity. The DuPont method is only a way to decompose ROE to evaluate what changes are driving the changes in ROE. LOS DuPont analysis is a mathematical expression which breaks ROE into three fundamental parts i.e. Profitability (Profit Margin) Operating efficiency (Asset Turnover) Leverage (Financial Leverage). This enables the analyst to quickly focus on a particular spot that requires thorough scrutiny. However, it is to be noted that DuPont analysis is not a substitute for comprehensive analysis, but a snapshot that can indicate the strengths and weaknesses in any of the critical areas, i.e., profitability, operating efficiency and leverage.

DuPont analysis helps in investigating which part of the business is performing well and which part needs immediate attention. DuPont equation could be further extended into five parts by breaking up net profit margin into EBIT margin, tax burden interest burden. This five-factor analysis scrutinizes profitability further.

ROE = EBIT Margin × Interest Burden × Tax Burden × Asset Turnover × Financial Leverage

Check your progress 7

1. _____analysis helps in investigating which part of the business is performing well and which part needs immediate attention.

   a. DuPont

   b. ratio

3.9 Let Us Sum Up

Ratio analysis is a quantitative analysis tool used to interpret the financial statements in terms of the operating performance and financial position of a firm. Ratio analysis can be classified into two main categories: A. Operating

Performance Ratios B. Risk Analysis Operating performance ratios helps in gauging the operating performance of the firm. It can be further divided into two categories: A. Efficiency ratios B. Profitability ratios Risk analysis ratios helps in gauging the financial risk or strength of balance sheet from both short-term and long-term perspective. It can be further divided into two categories: A. Liquidity ratios B. Leverage ratios Common areas of adjustments made by analysts while calculating financial ratios for better analysis are: A. Non-operating/ Extraordinary/ prior period income and expenses B. Change in accounting policy C. Intangible assets D. Capital work in progress or Capital Expenditure in initial stage of operation E. Quasi-equity debt or convertible debt F. Off-balance sheet items Benefits of ratio analysis are: A. Quick analysis of historical financial performance B. Used for financial modelling or forecasting future earnings and cash flow C. Used for investment decision making process D. Used for evaluation of management's performance Limitations of ratio analysis are: A. Ratio analysis is ineffective when used in isolation B. Ratios analysis considers only quantitative data and completely ignores important qualitative aspects of the business C. Ratio analysis does not capture the impact of inflation, leading to distortion of data D. Relative comparison of a firm's performance with other companies becomes difficult due to use of different accounting treatment or accounting periods E. Difficult to find comparable industry ratios when analyzing companies operating in multiple products segments or different geographies Accounting periods may differ from company to company and geographically. Various accounting periods are discussed as under: A. Last Fiscal Year B. Trailing Twelve Months C. Leading Twelve Months Major relative valuations commonly used by analysts are: A. Price to Earnings Ratio B. Price/ Earnings to Growth Ratio? C. Price to Book ratio D. Price to sales ratio E. EV/ EBITDA ratio F. Price to Cash Flow ratio Key ratios used from credit angle perspective are: A. Interest Coverage B. DSCR C. Current ratio D. Quick ratio E. Debt-equity ratio F. Overall gearing ratio G. Net Gearing ratio H. Total debt to Cash Flow from Operation I. Total debt/ EBITDA DuPont analysis is a mathematical expression that can be used to analyze ROE in detail. DuPont breaks ROE into three fundamental parts i.e. A. Profitability (Profit Margin) B. Operating efficiency (Asset Turnover) C. Leverage (Financial Leverage).

3.10 Answers for Check Your Progress

Check your progress 1

Answers: (1-a), (2-b)

Check your progress 2

Answers: (1-a), (2-b), (3-a), (4-b)

Check your progress 3

Answers: (1-a), (2-b), (3-a), (4-b), (5-a)

Check your progress 4

Answers: (1-a), (2-b), (3-a), (4-b), (5-a)

Check your progress 5

Answers: (1-a)

Check your progress 6

Answers: (1-a), (2-b)

Check your progress 7

Answers: (1-a)

3.11 Glossary

1. **Fund -** It refers to all financial resources or purchasing power or economic value possessed by a firm at a point of time.
2. **Flow of funds -** The flow of fund refers to the changes in the existing financial position of a business caused by inflow of resources owing to receipts and payments.

3.12 Assignment

Discuss DuPoint Analysis.

3.13 Activities

What are trailing ratios? Discuss.

3.14 Case Study

Discuss with example the process of evaluation using ratio analysis

3.15 Further Readings

1. Aggarwal and Jain Advanced Financial Accounting.
2. S.N. Maheshwari, Introduction to Accounting.
3. R.L.Gupta, Advanced Accountancy.
4. Shukla and Grewal, Advanced Accounts.
5. Tulsin, Financial Accounting.
6. Certified credit research analyst (Level 1), Taxmann.

Block Summary

In this block which was divided into three units we studied about financial statements in first unit, under which we studied Financial statements provide information for about the performance of a company over a given period of time and its financial position at the end of that given period. The role of financial statements is to facilitate economic decision making by the various stakeholders. Financial statements consist of three basic statements - the balance sheet, the profit and loss statement and the cash flow statement. Balance sheet reflects the financial position of the company; profit and loss statement summarizes the performance of the company while cash flow statement reports a company's inflows and outflows of cash during a given period.

In unit second we studied about the valuation of inventories is done at lower of cost of net realizable value. There are various methods of valuation of inventory Specific Identification Method First In First Out Method (FIFO) Last In First Out Method (LIFO) Weighted Average Method In specific Identification method, the purchases of various items are identified till it has been sold or it is carried to closing inventory and thus the value of the inventory is arrived at using specific identification of inventory items and finally we studied Ratio analysis is a quantitative analysis tool used to interpret the financial statements in terms of the operating performance and financial position of a firm.

Block Assignment

Short Answer Questions

1. Accounting equation.
2. Financial statements.
3. Balance sheet.
4. Foreign exchange.
5. Intangible assets.

Long Answer Questions

1. Discuss the structure of financial statements.
2. Write a short note on Valuation of inventories.
3. Write a note on uses and limitation of ratio analysis.

Enrolment No. ☐

1. How many hours did you need for studying the units?

Unit No	**1**	**2**	**3**	**4**
Nos of Hrs				

2. Please give your reactions to the following items based on your reading of the block:

Items	Excellent	Very Good	Good	Poor	Give specific example if any
Presentation Quality	☐	☐	☐	☐	_____
Language and Style	☐	☐	☐	☐	_____
Illustration used (Diagram, tables etc)	☐	☐	☐	☐	_____
Conceptual Clarity	☐	☐	☐	☐	_____
Check your progress Quest	☐	☐	☐	☐	_____
Feed back to CYP Question	☐	☐	☐	☐	_____

3. Any Other Comments

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……

Education is something which ought to be brought within the reach of every one.

- Dr. B. R. Ambedkar

Dr. Babasaheb Ambedkar Open University
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FINANCIAL STATEMENTS ANALYSIS

PGDF-203

BLOCK 3:
CREDIT SPECIFIC ANALYSIS

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FINANCIAL STATEMENTS ANALYSIS

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ROLE OF SELF INSTRUCTIONAL MATERIAL IN DISTANCE LEARNING

The need to plan effective instruction is imperative for a successful distance teaching repertoire. This is due to the fact that the instructional designer, the tutor, the author (s) and the student are often separated by distance and may never meet in person. This is an increasingly common scenario in distance education instruction. As much as possible, teaching by distance should stimulate the student's intellectual involvement and contain all the necessary learning instructional activities that are capable of guiding the student through the course objectives. Therefore, the course / self-instructional material are completely equipped with everything that the syllabus prescribes.

To ensure effective instruction, a number of instructional design ideas are used and these help students to acquire knowledge, intellectual skills, motor skills and necessary attitudinal changes. In this respect, students' assessment and course evaluation are incorporated in the text.

The nature of instructional activities used in distance education self-instructional materials depends on the domain of learning that they reinforce in the text, that is, the cognitive, psychomotor and affective. These are further interpreted in the acquisition of knowledge, intellectual skills and motor skills. Students may be encouraged to gain, apply and communicate (orally or in writing) the knowledge acquired. Intellectual-skills objectives may be met by designing instructions that make use of students' prior knowledge and experiences in the discourse as the foundation on which newly acquired knowledge is built.

The provision of exercises in the form of assignments, projects and tutorial feedback is necessary. Instructional activities that teach motor skills need to be graphically demonstrated and the correct practices provided during tutorials. Instructional activities for inculcating change in attitude and behavior should create interest and demonstrate need and benefits gained by adopting the required change. Information on the adoption and procedures for practice of new attitudes may then be introduced.

Teaching and learning at a distance eliminates interactive communication cues, such as pauses, intonation and gestures, associated with the face-to-face method of teaching. This is particularly so with the exclusive use of print media. Instructional activities built into the instructional repertoire provide this missing interaction between the student and the teacher. Therefore, the use of instructional activities to affect better distance teaching is not optional, but mandatory.

Our team of successful writers and authors has tried to reduce this.

Divide and to bring this Self Instructional Material as the best teaching and communication tool. Instructional activities are varied in order to assess the different facets of the domains of learning.

Distance education teaching repertoire involves extensive use of self-instructional materials, be they print or otherwise. These materials are designed to achieve certain pre-determined learning outcomes, namely goals and objectives that are contained in an instructional plan. Since the teaching process is affected over a distance, there is need to ensure that students actively participate in their learning by performing specific tasks that help them to understand the relevant concepts. Therefore, a set of exercises is built into the teaching repertoire in order to link what students and tutors do in the framework of the course outline. These could be in the form of students' assignments, a research project or a science practical exercise. Examples of instructional activities in distance education are too numerous to list. Instructional activities, when used in this context, help to motivate students, guide and measure students' performance (continuous assessment)

PREFACE

We have put in lots of hard work to make this book as user-friendly as possible, but we have not sacrificed quality. Experts were involved in preparing the materials. However, concepts are explained in easy language for you. We have included may tables and examples for easy understanding.

We sincerely hope this book will help you in every way you expect.

All the best for your studies from our team!

FINANCIAL STATEMENTS ANALYSIS

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UNIT 2 INTRODUCTION TO PENSIONS AND POST-RETIREMENT BENEFITS

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Dr. Babasaheb
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FINANCIAL STATEMENTS ANALYSIS

BLOCK 3: CREDIT SPECIFIC ANALYSIS

BLOCK 3: CREDIT SPECIFIC ANALYSIS

Block Introduction

Financial statement analysis is considered to be one of the important topics in the field of accounting and finance as it is the subject which measures the actual performance of the business. It is only because of this subject that we are able to measure the performance of the business, compare it with our standard or with our past performance and take corrective measure accordingly.

In this block we have studied about credit analysis .This block was divided into two units, the first one covered the topic liquidity analysis in which we will be studying about liquidity, solvency and measures of liquidity. We will be discussing about liquidity and credit analysis. All these topics will be discussed briefly to give readers a brief knowledge of the topics.

Unit second will be covering the topics stress testing; it will be covering revenue and cost drivers and commodities and stressed scenarios. The bull and bear scenarios will also be discussed briefly to give reader knowledge of the topic.

Block Objective

After learning this block, you will be able to understand:

- Liquidity and solvency.
- Measures of liquidity.
- Analysis and credit rating of liquidity.
- Debt maturity schedule.
- Leveraged balance sheet.
- Commodities and various stressed scenarios.

Block Structure

Unit 1: Liquidity Analysis

Unit 2: Stress Testing

UNIT 1: LIQUIDITY ANALYSIS

Unit Structure

1.0 Learning Objectives

After learning this unit, you will be able to understand:

- More about liquidity analysis.
- What is liquidity?
- Various measures of liquidity.
- Analysis of liquidity.

1.1 Introduction

Liquidity analysis is done through liquidity ratios which are used to determine a company's ability to meet its short-term debt obligations. Investors often take a close look at liquidity ratios when performing fundamental analysis on a firm. Since a company that is consistently having trouble meeting its short-term debt is at a higher risk of bankruptcy, liquidity ratios are a good measure of whether a company will be able to comfortably continue as a going concern.

Any type of ratio analysis should be looked at within the correct context. For instance, investors should always look at a company's ratios against those of its competitors, its sector and its industry and over a period of several years. In this unit we will be discussing and understand much about liquidity. We will not only explore liquidity but many more things associated to it.

1.2 Liquidity Defined

Liquidity can be defined in several different ways. Looking at multiple definitions helps understand the nature of liquidity better.

1. Liquidity is the availability of cash.
2. Liquidity is the availability of cash to meet current obligations.
3. Liquidity is the ability to convert assets to cash with minimum price loss. The emphasis on "cash" in these definitions is associated with the ability to make payments. When a company runs into financial problems, its debt is usually quickly downgraded. Investors demand a higher premium to lend to such companies. If investors lose confidence altogether they will simply refuse to lend at any price. If the company does not have liquid assets available, even temporary cash flow problems can quickly become life threatening. In the event of the need to meet obligations to other parties, the payment in cash (through bank transfer) is the only legally acceptable means of discharging obligations. To that extent the legal import of the phrase "amounts due" is "amounts due in cash" which is the legal obligation to pay forthwith. It is this inability to pay when due that leads to a payment crisis for an organisation, often leading to credit downgrades and a full-fledged financial crisis. Therefore understanding liquidity is critical.

Check your progress 1

1. _____ is the availability of cash

   a. Liquidity

   b. finance

2. Liquidity is the availability of cash to meet _____obligations.

   a. current

   b. future

3. Liquidity is the ability to convert _____to cash with minimum price loss.

   a. assets

   b. liability

1.3 Solvency and Liquidity

Can an Asset-rich entity encounter a liquidity problem? An Apocryphal Story an explorer wandering through a desert comes across a trove of treasures. He is soon carrying more than 20 kilos of gold in the form of invaluable historical artefacts. It can be said that this explorer is (potentially) fabulously rich. He is however, starved for water and is on the borderline between life and death. He soon comes across a water bearer who demands one unit of currency for a drink of water. The explorer has a liquidity crisis. He does not have that unit of currency the water-bearer demands. Any one object he holds is several thousands of the unit of currency. If he gives one of those objects for a life-saving drink, he will be getting cash value at a significant price - loss. This story highlights the fact that being wealthy, or rich, is not the same as being liquid. When under liquidity pressure, assets get diluted at values lower than what the financial statements reflect.

Check your progress 2

1. Being wealthy, or rich, _____the same as being liquid

   a. is not

   b. is

1.4 Measures of Liquidity

John Maynard Keynes defined liquidity in the following terms: An Asset is more liquid if "it is more certainly realizable at short notice without loss." The loss can be defined as the value realizable from an optimal sale with no time constraint and the value realizable from immediate sale given a time constraint. Immediately disposable assets in the balance sheet are called as current assets. Going with this, the simplest measure used to assess liquidity is the current ratio, which is calculated as follows:

$$\text{Current Ratio} = \frac{\text{Current Asset}}{\text{Current Liabilities}}$$

This ratio is considered healthy at 2 or 2.5:1. A lower ratio means the company does not have sufficient money to meet its finance requirement in the pipeline.

However, rather than go with this formula blindly, it is more important to understand what goes into the definition of current assets. Breaking down current assets into its components helps the analyst look at possible special situations, which might evolve. Typically, current assets include: - Cash and Bank balances- Trade receivables - Other receivables - Raw Materials - Work-in-process/ progress - Finished Goods - Short term investments From the point of view of understanding liquidity well, we need to understand the character of each of these items better.

Cash and Bank Balances - These represent the highest liquidity. However, certain bank accounts might be escrow accounts or lined accounts in which case the funds held in them are not available in a general liquidity event.

Trade Receivables - Trade receivables typically get converted back to cash (are realized) within a 90 period and therefore represent "near-liquidity". However, the receivables need to be good and recoverable: not amounts which are in dispute or from debtors who they are not paying or in a liquidity crisis. Therefore, an ageing of receivables is important and those considered "past-due" are not good indicators of liquidity.

Materials: - Materials, in whatever state raw to finished goods are the most complex of the items considered as current. Theoretically, they can be disposed of at the current market value and the numbers reflected in the financial statements are supposed to be current numbers. However, spoiled or defective materials do not enjoy this status. If the financial statements reflect such materials at an improper value it poses challenges for those relying on these statements.

Furthermore, certain materials, especially, finished goods might not be selling at all because the product is not selling.

Short Term Investments: - Strictly speaking, only those investments, which suffer low volatility in the short term should be included in this heading. Equity holdings, even if for trading purposes definitely do not qualify. In this respect it is worth remembering if too many people in the market are searching for liquidity, investments which are susceptible to price movements will be impacted first. Investments, which do qualify and fully contribute to liquidity, are bank deposits and money market instruments. The shorter the maturity the greater the reliability.

Check your progress 3

1. _____= current assets/ current liabilities

   a. current ratio

   b. liquid ratio

2. _____ratio is considered healthy at 2 or 2.5:1

   a. Current Ratio

   b. liquid ratio

3. _____represent the highest liquidity.

   a. Cash

   b. stock

4._____, in whatever states are the most complex of the items considered as current.

   a. Materials

   b. Finished stock

5. Strictly speaking, only those investments, which suffer low volatility in the short term, should be included in _____.

   a. Short term investment

   b. long term investment

1.5 Quick Ratio/Quick Assets

This measure ignores materials as liquid and realizable for reasons noted above.

$$\text{Quick Ratio} = \frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}}$$

Marketable Securities - A marketable security is a near-cash (liquid) asset and is recorded at purchase price plus incidentals, commissions, and taxes or market value (whichever is lower) in the account books under current assets. If we are to consider similar issues as in the case of inventory for marketable securities, then the lack of saleability of securities has to be assessed. In this matter the best practice document is to be found in the liquidity framework for banks prescribed by the Bank of International Settlements. While these considerations apply to banks the principles could potentially be extended to other analyses as well. That same document also defines Liquidity Coverage Ratio as follows:

$$\frac{\text{Stock of high quality liquid assets}}{\text{Total net cash outflows over the next 30 calendar days}} \geq 100\%$$

This indicates that the "high-quality liquid assets" of the bank should exceed the bank's outflows over the next 30 days on whichever head of account those outflows might be. What is a "high-quality liquid asset"? "

"Fundamental characteristics of High Quality Liquid Assets"

- Low credit and market risk: assets that are less risky tend to have higher liquidity. High credit standing of the issuer and a low degree of subordination increases an asset's liquidity. Low duration, 5 low volatility, low inflation risk and denomination in a convertible currency with low foreign exchange risk all enhance an asset's liquidity.
- Ease and certainty of valuation: an asset's liquidity increases if market participants are more likely to agree on its valuation. The pricing formula of a high- quality liquid asset must be easy to calculate and not depend on strong assumptions. The inputs into the pricing formula must also be publicly available. In practice, this should rule out the inclusion of most structured or exotic products.
- Low correlation with risky assets: the stock of high-quality liquid assets should not be subject to wrong-way (highly correlated) risk. For example,

assets issued by financial institutions are more likely to be illiquid in times of liquidity stress in the banking sector.

- Listed on a developed and recognized exchange market: being listed increases an asset's transparency.

IT should be noted that while the above stipulations include listed assets, which would imply equity securities, these assets do suffer the risk arising from correlation with market events.

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Can Money Market Instruments be completely safe?

December 2008 provides a good example of what can happen in stressed markets. For the first time in world history money market mutual funds lost value. While the holdings were in safe and highly liquid instruments, market confidence was such that investors were dumping even such high-grade instruments. Money market funds reported negative returns, even going below par.

This shows that there is enough in financial history to demonstrate that on bad day's liquidity can be a real challenge.

Check your progress 4

1. _____= current assets-inventory / current liabilities.

   a. Liquid Assets

   b. current asset

2. A _____is a near-cash asset and is recorded at purchase price plus incidentals, commissions, and taxes or market value in the account books under current assets.

   a. marketable security

   b. long term investment

3. December 2008 provides a good example of what can happen in stressed markets. For the first time in world history money market mutual funds _____value.

   a. lost

   b. gained

1.6 Liquidity Analysis and Credit Ratings

Organisations that have low liquidity or a low holding of liquid assets are more likely to face payment crises than those with a higher holding of liquid assets.

In further analysis involving correlation between market events and liquidity positions, we will see that market events worsen the liquidity position of entities with low quality assets.

Given the link between liquidity and default, entities with poor liquidity are clearly higher risk in terms of a ratings standard. Ratings issued by credit rating agencies are an important source of information for investors about the credit quality of corporate and government bonds. The risk of a firm not being able to refinance its short-term liabilities as "liquidity risk" and research has found that this risk may be an important determinant of default risk, and hence, should be incorporated in credit ratings. A firm's reliance on short-term debt is a measure of its exposure to liquidity risk. A rating downgrade may itself increase a firm's exposure to liquidity risk by triggering covenants that necessitate refinancing, and also by making refinancing more difficult.

Rating agencies could resort to a multi-notch downgrade if they correctly factor in the increase in liquidity risk resulting from a rating downgrade. Research indicates that ratings are more likely to be subject to jumps downward for firms with a larger proportion of short-term debt. Short-term debt creates liquidity risk for the borrower because the lender may refuse to roll over the debt if bad news arrives, forcing the firm into inefficient liquidation even when it is solvent in the long run. Such inefficient liquidation may arise due to constraints on pledging future rents to lenders because of agency costs or due to strategic uncertainty about other lenders' actions. Even if liquidation is avoided, short-term debt can still cause loss of value if it has to be refinanced at an overly high interest rate because of credit market imperfections. The upshot is that short-term debt can exacerbate the impact of temporary fall in the firm's cash flows, either by drying up the external sources of cash or increasing its cost.

Check your progress 5

1. Organisations that have low liquidity or a low holding of liquid assets are more likely to face payment _____than those with a higher holding of liquid assets.

   a. crises

   b. availability

2. A firm's reliance on _____is a measure of its exposure to liquidity risk.

   a. short-term debt

   b. long term debt

1.7 The Debt Maturity Schedule

As we saw in the various expressions such as 'outflows in the next 30 days' and 'current liabilities' liquidity is assessed in the context of the commitments. Liquidity is assessed in terms of what is likely to happen in the next few days (in financial terms 365 days; but there is a case for looking at the next 90 days and 180 days as well). Long-term loans taken by an organisation are obligations, which extend beyond such timelines. Therefore one might think they do not form part of the analysis of liquidity. However, some of those long-term loans might have been taken a long time ago and are now due for repayment within the next 365 days. Suddenly, that which is long term becomes a short-term obligation. The correct way to study these patterns is to seek a debt maturity schedule. The debt maturity schedule typically shows the maturity profile of loans taken by due dates classified into maturity buckets. In conventional financial reporting, instalments of loans due within the year are classified as short-term obligations in any case. The schedule gives a clear picture of outflows. The table below reflects the repayment schedule of INR 1,200 crores of loans taken repayable over the next 4 years in quarterly instalments.

Maturity Dates	**Maturity Amounts**
July 2013	
Aug 2013	
Sep 2013	75

Oct 2013	
Nov 2013	
Dec 2013	75
Jan 2014	
Feb 2014	
March 2014	75
2014	300
2015	300
2016	300
Total	**1125**

Against this schedule it is possible to assess the evolving liquidity position over the next several quarters. From the perspective of analysing liquidity the following should be noted:

- Some loans/ bonds have terms which require prepayment if certain incidents (called credit events) take place. This can change the maturity profile for the worse
- Quite often any change to this schedule which is made at the request of the borrower is considered as a default or credit event.

Check your progress 6

1. _____is assessed in terms of what is likely to happen in the next few days.

   a. Liquidity

   b. finance

2. _____loans taken by an organisation are obligations, which extend beyond such timelines.

   a. Long-term

   b. short term

1.8 Let Us Sum Up

In this unit we have studied and understood much about liquidity. Almost each and every concept about liquidity has been explained. In this unit we discussed about solvency as well as liquidity. We studied about various measures of liquidity. Here in this unit we even studied about current and liquid assets and how they are different. What are the standard ratios required?

Liquidity analysis and credit ratings were also discussed here in detail. The debt maturity schedule was also discussed. Overall this unit in a very brief way explained much about finance and liquidity and various other aspects associated to it.

1.9 Answers for Check Your Progress

Check your progress 1

Answers: (1-a), (2-a), (3-a)

Check your progress 2

Answers: (1-a)

Check your progress 3

Answers: (1-a), (2-a), (3-a), (4-a), (5-a)

Check your progress 4

Answers: (1-a), (2-a), (3-a)

Check your progress 5

Answers: (1-a), (2-a)

Check your progress 6

Answers: (1-a), (2-a)

1.10 Glossary

1. **Short term debt** - any debt incurred by a company that is due within one year.
2. **Long term debt** - Any debt incurred by a company that is due for more than a year.

1.11 Assignment

Explain liquidity and discuss its measures.

1.12 Activities

Discuss the Fundamental characteristics of High Quality Liquid Assets

1.13 Case Study

Can a money market be completely safe? Comment.

1.14 Further Readings

1. Agarwal and Jain Advanced Financial Accounting.
2. S.N. Maheshwari, Introduction to Accounting.
3. R.L.Gupta, Advanced Accountancy.
4. Shukla and Grewal, Advanced Accounts.
5. Tulsin, Financial Accounting.
6. Certified credit research analyst level 1 by taxmann.

UNIT 2: STRESS TESTING

Unit Structure

2.0 Learning Objectives

After learning this unit, you will be able to understand:

- Stress testing
- Various steps in stress testing.
- Frame work for developing scenarios.
- Commodities and stressed scenarios.

2.1 Introduction

In most general terms, financial stress can be thought of as an interruption to the normal functioning of financial markets. Agreeing on a more specific definition is not easy, because no two episodes of financial stress are exactly the same. Still, economists tend to associate certain key phenomena with financial stress. The relative importance of these phenomena may differ from one episode of financial stress to another. However, every episode seems to involve at least one of the phenomena, and often all of them:

1. Increased uncertainty about fundamental value of assets. One common sign of financial stress is increased uncertainty among lenders and investors about the fundamental values of financial assets. The fundamental value of an asset is the present discounted value of the future cash flows, such as dividends and interest payments. Increased uncertainty about these fundamental values typically translates into greater volatility in the market prices of the assets.

2. Increased uncertainty about behaviour of other investors. Another form of uncertainty that often increases during financial crises and contributes to asset price volatility is uncertainty about the behaviour of other investors.

3. Increased asymmetry of information. A third common sign of financial stress is an increased asymmetry of information between lenders and borrowers or buyers and sellers of financial assets. Asymmetry of information is said to exist when borrowers know more about their true financial condition than lenders, or when sellers know more about the true quality of the assets they hold than buyers. Information gaps of this kind can lead to problems of adverse selection or moral hazard, boosting the average cost of borrowing for firms and households and reducing the average price of assets on secondary markets.

4. Decreased willingness to hold risky assets (flight to quality). A fourth common sign of financial stress is a sharply decreased willingness to hold risky financial assets. Such a change in preferences will cause lenders and investors to demand higher expected returns on risky assets and lower returns on safe assets. These shifts in preferences away from risky assets and toward safe assets are often referred to as "flights to quality." The result is to widen the spread between the rates of return on the two types of assets and increase the cost of borrowing for relatively risky borrowers.

5. Decreased willingness to hold illiquid assets (flight to liquidity). A final sign of financial stress is a sharply decreased willingness to hold illiquid assets. An illiquid asset is one that the owner cannot be confident of selling at a price close to its fundamental value if faced with a sudden and unexpected need for cash. In some cases, an asset is illiquid because the secondary market for the asset is thin, so that selling a substantial amount of the asset has a large effect on the price.

Stress and Past Data

All business enterprises, when looking at their financial evolution look at their own past. This past might show a very good picture of the enterprise and is no doubt based on reality. However, the past is no indicator of the future. Statistics of the past is based on events that occurred in the past. Certain events which never occurred in the past can and do occur. Consider the 2004 Tsunami in the Indian Ocean. Till December 2004, what had been the experience of a tsunami on the Tamil Nadu coast? None. On that basis of past experience, what is the expectation of losses on the coast from large waves? None. And yet, such an event, unprecedented in history did take place. The lack of expectation of such an event was seen in the lack of preparedness. This directly led to the death of several hundreds of thousands and widespread destruction. From the point of view of an enterprise they should consider such outlier events and have a plan of response.

From a credit rating perspective, it is necessary to consider such possibilities and see what it might do to the organisation.

2.2 Key Steps in Stress Testing

Stress testing is a methodical process, part creative and part mathematical. The following steps may be followed in developing stress tests:

1. Visualize scenarios: Scenarios involve thinking on the lines of "What if…?" What if sales dropped by 20%? What if our product suddenly lost its appeal? What if input costs went up by 20%? What if there was a 10 day strike at my supplier's plant? Scenarios involve creative thinking. In developing scenarios one must not be trapped by experiences of the past - one must think beyond the obvious. In this step, it is necessary to develop a number of scenarios. Robust scenario development may require the analyst to think of all possible situations. This includes situations that may be highly

improbable. It is important to note that developing scenarios should be done without restraining one self. The consideration of scenarios and their impact is a different aspect than that of generating scenarios.

2. Apply Stress - Stress can apply in two distinct methods. # 1: Stress can be caused by a scenario of extreme possibilities. For example consider a scenario in which the most important supplier to an enterprise shuts down permanently. This can cause an extremely stressed situation for the enterprise. Recently, the Toyota Motor Company faced a severe production crunch because floods in Thailand caused a major disruption in supply of parts. # 2: Stress can be caused by a convergence of scenarios. Each on its own might not have been threatening. In combination it may create stress. For example, in a currency crisis the government may place an embargo on payments to be made in foreign currencies so that foreign suppliers might not supply components. At the same moment, if local suppliers have a shutdown at the factory, or a fire or other such disruptive event, production can be completely stalled.
3. Impact Analysis - Apply the stressed variables to the business of the enterprise and assess the financial consequences. What does it do to the business? Can it still meet its obligations? Can it stay solvent?
4. Probability Analysis - While this can be done in a highly mathematical fashion it might be sufficient to assign subjective measures like "highly likely", "Less likely" and so on to get a sense of what might happen. Some estimates can be allocated to each subjective measure: highly likely may be given 30% weightage for instance. Highly unlikely might be given a 1% probability.
5. Expected Value of Event multiplying probability estimates from the fourth step with the impact analysis in the third step gives a reasonable estimate of financial impact, which can be used to assess the ability to meet commitments.

Check your progress 1

1. _____-testing is a methodical process

   a. Stress

   b. pressure

2. In developing scenarios one must not be trapped by experiences of the _____.

   a. past

   b. present

3. Apply the _____variables to the business of the enterprise and assess the financial consequences.

   a. stressed

   b. fixed

2.3 Framework for Developing Scenarios, Revenue Drivers, Cost Drivers, Leveraged Balance Sheets and Impending Capital Raising Plans

The scenarios can be developed in terms of the following matrix. This matrix helps develop scenarios, which are in fact relevant to the context of the organisation. For instance, if a company has no leverage there is no benefit in developing scenarios that indicate stress in the borrowing environment such as interest rates and so on.

		Internal considerations	**Industry considerations**	**Environment considerations**
Key Drivers				
In the income statement				
Revenue drivers				
	Industry Size /Demand	x	x	x
	Market Share	x	x	x
	Sales price	x	x	x
Cost				

Drivers				
	Key cost items	x	x	x
	Prices of key cost items	x	x	x
In the balance sheet				

Let us go through each of these elements.

1. **Revenue Drivers:** In a fundamental sense, the revenue of an enterprise is the starting point - it is there a son the enterprise exists at all.

The following simple depiction shows the revenue as an outcome of:

- The size of an industry
- The market share that an enterprise enjoys in that industry

Fig 2.1 Revenue Drivers

Using this as a basis for developing scenarios we can project three possibilities:

a. That the demand within the industry slumps: That which occurs to the industry will not leave the enterprise unaffected. If the company is involved in tape recorders as a business and there is a shift in demand to digital recorders then the slump in the industry will cause a slump in the enterprise.

b. That the share of the enterprise slumps: There are enough cases of an industry going through growth but a particular company-losing share of the market. Kingfisher Airlines in India is an example of such an occurrence.

Such losses in market share can come from a variety of factors. Scenario building can be done without considering the factors. However, having factors in mind will help in assessing probabilities later on.

For instance it can be simply surmised that demand drops by 25%. It can also be surmised that demand drops due to a shift in consumption patterns. Later on, it will be possible to assign a probability to the shift in consumption pattern. Is it likely?

c. Sales price: competition can cause pressure on sales price: A scenario can be developed by which independent of the industry situation or the market share situation there is a slump in the price that the company could potentially charge its customers.

2. **Cost Driver:** Costs, if they go out of control, can damage any organisation significantly even if revenues are intact.

To build scenarios associated with costs, it is necessary to have a list of items of cost, which is typically available in the income statement.

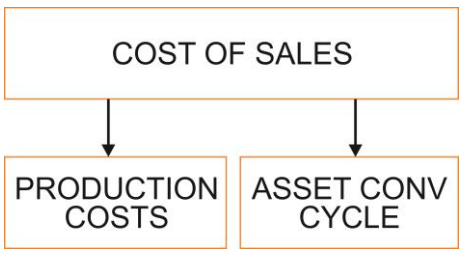

Fig 2.2 Cost Driver

Each item of cost has its own driver.

Materials, which are input to the production process, are the most usually considered. Scenarios are self-evident: what if the costs of materials go up?

However, each line item of cost can throw up similar scenarios. What if labour costs go up significantly due to re-negotiated wages?

In order to consider the costs which are truly significant and meaningful and develop scenarios only for those a DuPont analysis is most helpful. In this each line item is worked out into a percentage of sales. Those which form a larger percentage should be focused upon rather than those which are a small percentage.

A price shock to these significant line items would be good scenarios to work out.

3. **Leveraged Balance Sheet:** Companies that have loans are subject to the impact of interest rate scenarios. Interest rates, if they go up, will significantly dent the company's ability to service its loans. This is especially true of companies, which have a low interest cover ratio in the first place.

However, it could be that not all of the loans are subject to this reset of interest rates. Fixed rate loans will be impervious to interest changes - it will have no impact on interest cover. Loans on which the rates reset periodically or which are directly linked to market rates will show an immediate impact of any rate change. Scenarios can be developed which can create an interest rate shock and the impact of that on the financials of the organisation can be gauged.

4. **Impending capital raising plans:** For companies, whether leveraged or not, if there are plans to raise capital there is a possibility of turmoil in the markets spoiling those plans.

Check your progress 2

1. The _____of an enterprise is the reason the enterprise exists at all.

   a. revenue

   b. cost

2. In order to consider the costs which are truly significant and meaningful and develop scenarios only for those a _____is most helpful.

   a. Du-Pont analysis

   b. ratio analysis

3. Companies that have _____are subject to the impact of interest rate scenarios.

   a. loans

   b. long term liabilities

2.4 Internal Industry and Environmental Considerations

The scenarios, which can impact an organisation, need not all be environmental. It helps to think at three different levels while building scenarios:

- Internal
- Industry
- Environmental

Internal Considerations

These scenarios may impact the company alone. Others in the industry or the economy may remain untouched by such events. For instance, a catastrophic fire destroys the entire production plant. Other such scenarios can relate to:

- Regulatory action on the company
- Ban on its products due to safety, health or other considerations
- Legal cases etc.

Industry Considerations

Events that occur in an industry will not leave a company from that industry untouched. Scenarios associated with an industry are relatively easy to visualize. It affects everyone in the industry no doubt. But it will do so to varying degrees. To what extent is the company the analyst is focused on likely to be affected? This is a factor of the unique business structure of the particular company. For instance, the government bans the export of sugar at a time when international prices are attractive. It affects the profits of the industry as a whole. However, a particular company, which did not have an export led strategy, might be less impacted; one which was fully focused on exports might be severely impacted.

Environment Considerations

Nowadays, the environment includes not just the domestic environment but also the global economic environment in an interconnected world.

Some of the considerations in scenario building based on environment considerations are:

- Political/ social turmoil
- Extreme economic shocks
- energy prices

- exchange crisis
- disruption in shipping and logistics
- piracy in specific shipping lanes
- Global events with international/ local impact

All three categories of consideration translate to impact only in terms of the key drivers seen in the financial statement of the company.

Check your progress 3

1. The scenarios, which can impact an organisation, need not all be _____

   a. environmental

   b. cultural

2. Events that occur in an industry _____leave a company from that industry untouched.

   a. will not

   b. will

3. Nowadays, the environment includes not just the domestic environment but also the _____economic environment in an interconnected world.

   a. global

   b. national

2.5 Commodities and Stressed Scenarios

The impact of volatility in commodity prices has to be seen in two distinct ways. First, and the usual, is to understand the impact on input costs as a commodity may be associated with the cost drivers in the income statements. The second is on how the movement of commodity prices impacts those companies whose products are closely linked to commodity prices. In particular, scenarios can be developed where the input was purchased at a higher price and by the time the product reaches the market the commodity price has collapsed. The company will never be able to sell its product at the true or profitable price. This was seen with fibre optic cables in 1999-2000 when global price scrashed. It is therefore important to map the commodity prices to points of impact be it on the input side

and/ or the output side of the equation. The risk consulting firm Oliver Wyman recommends the following specific stress assessments in relation to commodity risks:

Supplement stress tests for risk reporting - Process a static set of stress scenarios consisting of extreme price movements; correlation coupling and decoupling; and liquidity decreases on a recurring basis. Make sure that the associated monitoring of stress test outcomes is a key element of the risk governance framework.

Consider market liquidity - Regularly evaluate the market liquidity of each position. Asset-backed traders can hold positions that are more than 100 times the daily transacted volumes. As a result, any quantification of risk can be significantly distorted if the liquidity of a trading position's market is not taken into account.

Apply proven methods - Identify key historical incidents that had a detrimental impact on risk drivers and use them as inputs for standardized stress scenarios that are evaluated on a regular basis. This approach becomes especially relevant once full portfolio diversification benefits have been realized in favour of capital efficiency. Senior executives should also re-evaluate whether they are using adequate stress testing tools. False security supported by insufficient models leads to severe financial consequences.

Conduct reverse stress tests - Examine the level of loss that would pose a significant threat to the trading organisation. Such a critical loss could result from occurrences ranging from missing annual performance targets to traders' reputations being damaged because they could suddenly trigger a need to hold a higher level of collateral, for example. A breach of a financial covenant requiring immediate refinancing of debt at a significantly higher margin or the failure to fulfil an obligation set forth by a contractual agreement could also jeopardize a trading organisation's survival in the mid to long term. Developing stress scenario and associated thresholds of risk factors and their dependencies fosters a thorough understanding of the firm's risk environment among all stakeholders. For senior management, reverse stress tests provide an excellent basis for prioritizing risk mitigation measures and allocating resources based on the vulnerabilities and dependencies of the firm's businesses. Insightful reverse stress cases account for market, credit, liquidity, operational and legal implications as well as the specificities of the underlying physical asset base. Define combined stresses for commodity price developments and correlations.

Trading organisations increasingly need to develop stress tests and more sophisticated risk aggregation methodologies that take into account risks related to not only commodity price fluctuations, but also alterations in their correlations. Under extreme market conditions, commodities often become either much more positively or negatively correlated, increasing the basis risk in a hedge portfolio significantly. For instance, the observed change in the spread between South African coal delivered into Europe and coal shipped from Australia may become a standard example of a correlation suddenly decoupling. In terms of credit risk, the correlation between a potential counterparty default and the replacement value of a structured contract may also be suddenly, and dramatically, changed.

Incorporate a checkpoint prior to stop-loss close-out procedures some commodities' initial price shocks levelled off in the weeks following the initial tragic events in Japan. For instance, the 12 per cent price increase of Dutch natural gas in the first week shrank to less than half of that only a week later. Stop-loss limit procedures should be structured so that commodity traders must explain losses to senior management before hard limits are triggered. Furthermore, they should allow, in exceptional cases, a trader to leave a position open if a convincing case for the persisting fundamental rationale of the trade can be made.

Check your progress 4

1. The impact of volatility in commodity prices has to be seen in _____distinct ways.

   a. two

   b. four

2. Developing stress scenario and associated thresholds of risk factors and their dependencies fosters a thorough understanding of the firm's _____among all stakeholders.

   a. risk environment

   b. political environment

3. _____executives should also re-evaluate whether they are using adequate stress testing tools.

   a. Senior

   b. junior

2.6 Scenario - Base, Bear, Bull

In the previous discussion on scenarios we referred to them as "What if" considerations. For instance: What if sales dropped by 10%? What if costs of a key raw material went up by 15%? "Scenario analysis" is a methodology, which allows analyst to: - study default risk on a predictive basis for companies and economic systems with the individuation of expected benchmark of risk and return. - estimate for each company the expected value for financial statement data and their probability. It will be possible to associate different likely scenarios representing the future situations for a company (with the assignment of every business scenario in a credit rating class.

This analysis consists in a monitoring of the health state of a company in the future (in comparison with a benchmark - competitors or industry sector) and for its credit rating level.

A Rating Agency looks at scenarios in one other way. It looks at base cases and then considers two different trajectories/ directions that a business might take from this base case:

- Bear Case scenario
- Bull Case scenario

Let's build some working definitions of those terms:

A Base Case scenario assumes one or more the following situations:

A. All factors (economic, financial) remain in line with the long term average, or trends

B. All factors (economic, financial) are in line with what is foreseeable and known.

Thus the Base Case considers situations in the "normal" course.

Defining normal itself is complicated. At times when economic conditions are volatile and patterns change in shorter cycles, no patterns are discernible. In such situations defining 'normal' poses challenges.

For instance, a business person might say, "If nothing changes in our environment and things remain normal, we will grow by 10%." This is the type of Base Case in "A" above.

An analyst might consider this as normal and a Base Case. (Earlier, in considering a framework for scenario analysis we looked Revenue Drivers, Cost

Drivers etc. These continue to be the basis for developing the scenarios considered here and we will revisit those aspects here, too.)

The same analyst might look at the business/ economic environment at the time and opine that the assumption that 'nothing changes in the environment' is not in line with what is foreseeable and known. Therefore, this projection of a growth of 10% as a Base Case might be rejected.

Assume that the company being analysed is an exporter to the USA. It is known (also an assumption) that the USA has been hit by an economic crisis and this crisis is going to impact all exporters.

Knowing this information the assertion made by the business person is rejected by the analyst. The analyst, based on the approach in 'B' above will develop a Base Case scenario which shows the exporter's revenues as taking a hit - of say, 25%.

The Base Case scenario is the starting point for considering alternative outcomes:

- One outcome with a downward bias: the Bear Case (What if things go bad/ worse?)
- One outcome with an upward bias: the Boom Case (What if things become dramatically better?)

As we go into a discussion on Bear and Bull Case Scenarios analysts will do well to bear in mind that rating agencies like to consider what appear to be likely outcomes - but then also look at alternative outcomes. Generally speaking, if businesses do better than expected there are no serious consequences to contend with.

However, if the alternative outcome is that the business does worse than expected then it is important the rating agency is able to project financial outcomes that result, especially from the perspective of bondholders/ creditors to whom the entity has obligations.

What is the difference between bear case scenarios and stressed scenarios (discussed elsewhere)?

Bear Case scenarios are within the realm of probable events. They might well happen.

Stressed scenarios look at extremely low-probability events which are highly unlikely to occur -but which may, nevertheless occur.

Outcomes/ Trends to watch out for in various scenarios:

The objective of conducting various scenario analyses is to examine the extent to which critical parameters which reflect liquidity of the enterprise are impacted.

The analyst would also like to check the longer term solvency of the enterprise and examine situations in which, that too is adversely impacted.

Therefore, the assessment revolves around the enterprise's ability to meet its short term cash flow requirements as well as maintain obligations and commitments to lenders. Furthermore, financial covenants (discussed elsewhere) are also in force during the pendency of loan obligations and the enterprise must not breach these covenants.

Scenario helps assess the resilience of the organisation in respect of these key financial factors in the face of probable events.

Key Variables

To get a good understanding of how the process of considering various scenarios works we take a simplified approach.

Certain key variables impact business outcomes for an organisation in the normal course. By restricting ourselves to "the normal course" we are excluding non-operations events such as:

- Mergers and acquisitions
- Disposal/ acquisition of major assets
- Technology shifts that render products obsolete - interest rate shocks (extreme changes as against a normal movement)
- External shocks
- Calamities etc.

The focus is on operational events such as:

- Events that impact revenue
- Changes in input costs
- Changes in business dynamic represented by longer working capital cycles for receivables and turnover.

Check your progress 5.

1. Defining normal is ___.

   a. complicated

   b. simple

2. _____Case scenarios are within the realm of probable events.

   a. Bear

   b. bull

3. Stressed scenarios look at extremely _____-probability events.

   a. low

   b. high

2.7 Construct and Interpret of all three Scenarios

2.7.1 Base Scenario

The base scenario may consider the following assumptions regarding a typical year:

1. Sales will increase by 12.5% in a given year: 10% on account of volumes and 2.5% on account of price increases effected by the firm.
2. Costs related to production will increase by 5%.
3. All other costs will rise by 5%.
4. Inventory turnover will remain steady at historical levels.
5. Debtor turnover will remain steady.
6. Creditors will continue to offer similar payment terms.
7. Loans are at a fixed rate of interest and no interest rate changes are anticipated. 8. Loan instalments fall due starting the next year for which this base scenario is considered.

Credit Specific Analysis

Previous Years numbers are given below:

Head	**Detail**	**Previous year figures(INR)**
Net Sales		4,000
Cost and exps		
	Cost of products sold	2,500
	Marketing and sales exps	500
	Admin exps	250
	Total costs and exps	3,250
Operating profit		750
Depreciation		530
Interest		120
Earnings before taxes		100
Taxes on earnings		35
Net earnings		65
Assets	Cash and cash equivalents	400
	Account receivable	300
	Inventories	600
Total current assets		1,300
Plants and Assets		2,300
Total Assets		3,600
Liabilities		
Current Liabilities		
	Payable to suppliers	650
Total Current Liabilities Long term debt (repayable in next 5 year in equal instalments) Share Equity		1,500
	Shareholders' funds	1,450
Total liabilities		3,600

The key information that we further need based on these numbers in order to develop the base scenario is the following:

Inventory Turnover (days) inventory/ sales × 360 days 54 days

Debtors Turnover (days) debtors/ sales × 360 days 27 days

For creditors, in this example we have taken the cost of production to be 75% materials so that creditor's turnover is calculated as follows:

Creditors/ material consumed Creditors Turnover (days) × 360 days 125 days.

Based on the assumptions given for the base scenario and using the ratios and data given relating to previous years, the following numbers can be obtained:

1. Sales will increase by 12.5% to 4500.
2. Cost of Product sold: there is a volume increase of 10% and a price increase of 5% on the new higher volume. This is effectively a 15.5% increase in cost of product sold: 2888.
3. Marketing and administrative expenses rise by 5% respectively and therefore rise to 525 and 263 respectively.
4. Depreciation is taken at 20% of the written down value of assets at end of previous year and amounts to 460.
5. Interest is taken at 8% of loan outstanding at the end of the year. Since there is a 300 repayment in the current year loan outstanding is taken at 1200. 8% of this is 96 reflected as interest cost.
6. Tax is taken at a standard 35%.
7. If debtors continue to remain at 27 days then the receivables will stand at 338.
8. If inventory continues to be at 54 days then it will stand at 675.
9. Since creditors continue to offer same terms the payables will rise to 751.

Based on these numbers the Income Statement for the Base Scenario will look as follows:

Head	**Detail**	**Previous year figures**	**Base case for next year**
Net Sales		4000	4500
Costs and Expenses			

	Cost of Products Sold	2500	2888
	Marketing and Selling Expenses	500	525
	Administrative Expenses	250	263
	Total Costs and Expenses	3250	3675
Operating Profit		750	825
Depreciation		530	460
Interest		120	96
Earnings before Taxes		100	269
Taxes on Earnings		35	94
Net Earnings		65	175

As a next step, we calculate the Shareholders Funds.

The net earnings in the current year will add to the Shareholders funds and this will rise by 175 to 1625.

We need a small calculation on the cash flows to show us what the closing balance of cash will be. In doing so we need to remember that a sum of 300 was paid out as a debt repayment.

Also, there was an increase of current assets and current liabilities leading to a net increase in working capital of 12 which goes to reduce the cash position of the company. Considering these factors, the cash flow statement will look as follows:

Cash flow Statement	+/-		**Amount**
Opening Cash			400
Cash from Operations		+	635
Increase in Working Capital		-	12
Loans paid		-	300
Closing Cash			723

We can now take the cash balance to the projected balance sheet for the Base Scenario. We have also; line by line calculated the various heads that appear in the balance sheet. The projected Balance Sheet for the Base Scenario looks as shown below:

Head	Detail	Previous year figures	Base case for Next Year
ASSETS			
Current Assets			
	Cash and Equivalents	400	723
	Accounts receivable	300	338
	Inventories	600	675
Total Current Assets		1,300	1,736
Plant and assets, net of depreciation		2,300	1,840
Total Assets		3,600	3,576
LIABILITIES			
Current Liabilities			
	Payable to suppliers	650	751
Total Current Liabilities		650	751
Long term debt (repayable in next 5 years in equal installments)		1,500	1,200
Shareholders' Equity			
	Shareholders' Funds	1,450	1,625

	Total shareowners equity	1,450	1,625
Total liabilities		3,600	3,576

Having developed this picture of the financials we can look at the key ratios that will be of interest in assessing solvency of the company.

	Previous year figures		Base case for Next Year
Interest Coverage Ratio	EBIDTA/Interest	6.3	8.6
	EBIDTA/(Interest		
Debt Service Coverage Ratio	+ debt	1.2	1.4

The Base Case shows the company's solvency related ratios improving significantly. This is on account of the various positive projections in the Base Case which includes the increase in sales volume even though the sales price is increased. In this scenario input costs do not rise as much as revenues which improves the margins asunder:

Previous year figures		Base case for Next Year
Net Profit Ratio	1.63%	3.89%

It should be carefully noted that such improvements are usually seen in forward looking numbers, i.e. projections made by the enterprise. There is a natural bias to assume that all will go well and whatever the management anticipates will happen as anticipated.

Scenario analysis is indeed intended to challenge such "status quo" thinking and examine impact on the key ratios. Coming back to the numbers we see in the

Base Case for the coming year on account of strong increase in profits and resultant increases in cash, the current and quick ratios look healthy as well.

In this company's past it has enjoyed favourable terms from creditors while keeping receivables in check. These favourable trade terms continue to be reflected in the company's working capital numbers.

No attention should be paid to the turnover ratios for debtors, creditors and inventory at this stage because these are simply based on previous year data. These turnover ratios were used as is to calculate the levels of debtors, creditors and inventory in the Base Case.

Interest coverage ratio is stronger (8.6 times on account of the increase in profits but also because current year interest is lower due to loan repayments. Likewise, debt service coverage has improved from 1.2 to 1.4 times.

The company had strong opening cash balances (400) which shows a further increase (of 323) despite the outflow on account of debt repayments (300) which commenced last year.

As such, in the Base Case the company presents a healthy picture in solvency terms.

2.7.2 Bear Case Scenario

The trajectory of this scenario is down from last year. The analyst makes assumptions which are a combination of bearish conditions in the market.

Revisiting the assumptions, the scenario could look as follows:

1. As the company plans to increase the price of its products by 5% there is a market reaction in terms of a 20% decrease in volumes.
2. This move on the company's part coincides which a significant spike in demand for the materials used in product. Supply becomes extremely tight resulting in an increase in production costs by 20%. Furthermore, due to the seller's market prevailing in the market for materials the credit terms are slashed and are now down to 30 days.
3. On the back of the sluggish off-take of the product in view of the price rise the company is forced to extend credit terms to dealers pushing up receivables to60 days.
4. Unsold inventories stretch inventory levels to 75 days. The outcomes of the changes of these numbers are reflected in the income statement as follows:

Credit Specific Analysis

Head	Details	Previous Year Figures	Base Case for next year
Net Sales		4000	3360
Cost and Expenses			
	Cost of Products Sold	2500	2400
	Marketing and Selling Expenses	500	525
	Administrative Expenses	250	263
	Total Cost and Expenses	3250	3188
Operating Profit		750	173
Depreciation		530	460
Interest		120	96
Earnings before Taxes		100	-384
Taxes on Earnings		35	0
Net Earnings		65	-384
Net Profit Ratio		1.63%	-11.41%

Analysing this income statement we find that:

1. As a consequence of the price increase the sales have dropped. Together with the increase in price the resultant sales figure is lower by 640.
2. The simultaneous increase in cost has severely dented the profitability and the company shows a loss of 384 as a consequence.
3. The net profit ratio which was relatively thin reflects this situation with a -11.41% figure.

We now develop the cash flow statement and find that the increase in inventory and receivables and paying off of the trade payables to bring them in line with the new payment terms has caused a significant dip in cash. Added to this is the net loss made during this period.

The cash flow statement looks as shown below:

	Previous year figures	**Base case for Next Year**
Cash flow Statement	+/-	Amount
Opening Cash	400	
Cash from Operations	+	77
Increase Working Capital	-	860
Loans paid	-	300
Closing cash	-	684

Cash being negative implies the company has to utilize any overdraft facilities it might have to meet its operational needs. The change in scenario shows that a seemingly comfortably placed company in liquidity terms is now quite stressed. The balance sheet shows the following corresponding figures:

Corresponding to this increase in working capital and losses incurred the key ratios analysed before look as shown below:

	Previous year figures		**Base case for Next Year**
	EBIDTA/Interest	6.3	1.8
	EBIDTA/(Interest		
Debt Service Coverage Ratio	+ debt repayments due)	1.2	0.3
Current ratio		2.0	3.8
Quick Ratio		1.1	0.8
Inventory Turnover (days)	inventory/sales × 360 days	54	75
Debtors Turnover (days)	debtors/sales × 360 days	27	60

	creditors/material		
Creditors Turnover (days)	consumed × 360 days	125	30

As noted before the ratios shown for debtors, creditors and inventory are the assumptions we have made and this is reflected in changed levels of these items in the balance sheet.

While current ratio looks impressive it is actually on account of steep increase in receivables and inventory. When inventory is adjusted out for the quick ratio the real picture emerges which shows that the short term solvency is adversely affected.

Furthermore, interest cover has dropped to 1.8 and does not look as comfortable as it used to in the previous year. Including the repayment of debt, the earnings do not cover the required outgo.

Despite the repayment of one instalment of loans due to the erosion inequity/shareholders' funds from the losses has caused the debt equity ratio to worsen slightly.

Further Analysis

The Bear Scenario considered here looked at an increase in input costs while keeping management's decision to raise prices unchanged.

There are several possibilities here:

1. The increased input costs could have been passed on to the customer and if the supply pressure was across the industry then the demand might not have been affected.
2. The increase in input costs could have been due to diversion of source material to another use of that material. For e.g. the price of sugarcane as an input to the manufacture of sugar could be seriously disrupted if sugarcane is diverted for production of ethanol. In the specific case of sugar this would have led to increase in sugar prices and given that it is an item of daily consumption not much of an impact on demand might have been seen.
3. Let us take the case of plastic-based goods of casual consumption (like novelty items.) If plastic prices shoot up then input costs rise but it may not be possible to pass on the price rise to customers without impacting demand. (Elastic demand)

The further analysis that could be made from this is that perhaps the company might not increase prices if it is in the situation of a steep increase in input costs and for its product. We may revise the price increase and bring it back to old levels, add in the assumption that sales do not decline but nor do they increase. What happens to the key numbers in this situation, other assumptions of the bear case regarding inventory, debtors and creditors remaining the same?

What happens to key numbers in case the price increase could be successfully passed on? This kind of alternative scenarios to the Bear Case scenario helps understand better the vulnerability of the company to the changes in environment.

2.7.3 Bull case scenario

The Bull Case Scenario typically is an improved position from the Base Case scenario. Generally speaking, it will not show any worsening of the solvency of the enterprise. However, it will reflect whether the company's operating dynamic allows it to take any major advantage of favourable conditions.

Companies that cannot take significant advantage of favourable conditions due to their inefficiencies are poorly placed to build up strength that could hold them in good stead during bearish times.

Let us revisit assumptions from a Bull Scenario perspective:

1. Despite the price increase of 5% the company is able to grow its revenues by20%.
2. This move on the company's part coincides with a decrease in input prices. The company finds itself in a buyer's market and is able to negotiate a 10% discount in input costs
3. Owing to the strong performance of its brands and demand for product inventory, historically at 54 days is brought down to 40 days.

Interest coverage ratio	**EBIDTA/INTERST**	**6.25**	**12.89063**
Debt service coverage ratio	EBIDTA/(Interest + debt repayments due)	1.2097	2.076342
Current ratio		2	2.9
Quick ratio		1.1	2.2

Cash flow Statement	+/-	Amount
Opening Cash		400
Cash from Operations	+	903
Increase in Working Capital	-	-56
Loans paid	-	300
Closing cash	-	1059

The data shows that in good market conditions the company is able to generate good cash surpluses. All the key ratios also look healthy. The implication is that the company's operations are extremely sensitive to the input costs.

In conclusion-

Base, Bear and Bull scenarios create a good understanding of the operational dynamic of a company. At the same time, it provides the analyst with a range of values that are likely to occur in the future period. The low (from the bear case) and the high (from the bull case) give a sense of what could happen in the company. Uncovering vulnerabilities and assessing how susceptible the company is to such vulnerabilities is an important part of the assessment of the ability of a company to meet its obligations on a continued basis.

Check your progress 6

1. The trajectory of _____scenario is down from last few year.

   a. bear

   b. bull

2. The _____Case Scenario typically is an improved position from the Base Case scenario.

   a. Bull

   b. bear

3. Base, Bear and Bull scenarios create a _____understanding of the operational dynamic of a company.

   a. good

   b. bad

2.8 Let Us Sum Up

Base, Bear and Bull scenarios has created a good understanding of the operational dynamic of a company. At the same time, it provides the analyst with a range of values that are likely to occur in the future period. The low (from the bear case) and the high (from the bull case) give a sense of what could happen in the company.

Uncovering vulnerabilities and assessing how susceptible the company is to such vulnerabilities is an important part of the assessment of the ability of a company to meet its obligations on a continued basis

2.9 Answers for Check Your Progress

Check your progress 1

Answers: (1-a), (2-a), (3-a)

Check your progress 2

Answers: (1-a), (2-a)

Check your progress 3

Answers: (1-a), (2-a), (3-a)

Check your progress 4

Answers: (1-a), (2-a), (3-a)

Check your progress 5

Answers: (1-a), (2-a), (3-a)

Check your progress 6

Answers: (1-a), (2-a), (3-a)

2.10 Glossary

1. **Bull -** A bull thrusts its horns up into the air
2. **Bear -** A bear swipes its paws down.

2.11 Assignment

Stress testing is a risk management tool. Discuss.

2.12 Activities

Write a note on visualising scenarios.

2.13 Case Study

Briefly discuss the base, bear and bull scenarios.

2.14 Further Readings

1. Aggarwal and Jain Advanced Financial Accounting.
2. S.N. Maheshwari, Introduction to Accounting.
3. R.L.Gupta, Advanced Accountancy.
4. Shukla and Grewal, Advanced Accounts.
5. Tulsin, Financial Accounting.

Block Summary

In this block we learnt, The first unit is liquidity analysis in which we will be studying about liquidity, solvency and measures of liquidity. We will be discussing about liquidity and credit analysis. All these topics will be discussed briefly to give readers a brief knowledge of the topics.

Unit second covered the topic stress testing; it covered revenue and cost drivers and commodities and stressed scenarios. The bull and bear scenarios have also been discussed to give reader a thorough knowledge of the topic.

Block Assignment

Short Answer Questions

1. Current Ratio
2. Liquid Ratio
3. Bear and bull
4. Cost driver
5. liquidity

Long Answer Questions

1. Write a note on liquidity and solvency.
2. Discuss the bear and bull scenarios in detail.

Enrolment No. ☐

1. How many hours did you need for studying the units?

Unit No	**1**	**2**	**3**	**4**
Nos of Hrs				

2. Please give your reactions to the following items based on your reading of the block:

Items	Excellent	Very Good	Good	Poor	Give specific example if any
Presentation Quality	☐	☐	☐	☐	_____
Language and Style	☐	☐	☐	☐	_____
Illustration used (Diagram, tables etc)	☐	☐	☐	☐	_____
Conceptual Clarity	☐	☐	☐	☐	_____
Check your progress Quest	☐	☐	☐	☐	_____
Feed back to CYP Question	☐	☐	☐	☐	_____

3. Any Other Comments

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Education is something which ought to be brought within the reach of every one.

- Dr. B. R. Ambedkar

Dr. Babasaheb Ambedkar Open University
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Ahmedabad-382 481.

FINANCIAL STATEMENTS ANALYSIS

PGDF-203

BLOCK 3:
MORE ON FINANCIAL STATEMENTS ANALYSIS

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FINANCIAL STATEMENTS ANALYSIS

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ROLE OF SELF INSTRUCTIONAL MATERIAL IN DISTANCE LEARNING

The need to plan effective instruction is imperative for a successful distance teaching repertoire. This is due to the fact that the instructional designer, the tutor, the author (s) and the student are often separated by distance and may never meet in person. This is an increasingly common scenario in distance education instruction. As much as possible, teaching by distance should stimulate the student's intellectual involvement and contain all the necessary learning instructional activities that are capable of guiding the student through the course objectives. Therefore, the course / self-instructional material are completely equipped with everything that the syllabus prescribes.

To ensure effective instruction, a number of instructional design ideas are used and these help students to acquire knowledge, intellectual skills, motor skills and necessary attitudinal changes. In this respect, students' assessment and course evaluation are incorporated in the text.

The nature of instructional activities used in distance education self-instructional materials depends on the domain of learning that they reinforce in the text, that is, the cognitive, psychomotor and affective. These are further interpreted in the acquisition of knowledge, intellectual skills and motor skills. Students may be encouraged to gain, apply and communicate (orally or in writing) the knowledge acquired. Intellectual-skills objectives may be met by designing instructions that make use of students' prior knowledge and experiences in the discourse as the foundation on which newly acquired knowledge is built.

The provision of exercises in the form of assignments, projects and tutorial feedback is necessary. Instructional activities that teach motor skills need to be graphically demonstrated and the correct practices provided during tutorials. Instructional activities for inculcating change in attitude and behavior should create interest and demonstrate need and benefits gained by adopting the required change. Information on the adoption and procedures for practice of new attitudes may then be introduced.

Teaching and learning at a distance eliminates interactive communication cues, such as pauses, intonation and gestures, associated with the face-to-face method of teaching. This is particularly so with the exclusive use of print media. Instructional activities built into the instructional repertoire provide this missing interaction between the student and the teacher. Therefore, the use of instructional activities to affect better distance teaching is not optional, but mandatory.

Our team of successful writers and authors has tried to reduce this.

Divide and to bring this Self Instructional Material as the best teaching and communication tool. Instructional activities are varied in order to assess the different facets of the domains of learning.

Distance education teaching repertoire involves extensive use of self-instructional materials, be they print or otherwise. These materials are designed to achieve certain pre-determined learning outcomes, namely goals and objectives that are contained in an instructional plan. Since the teaching process is affected over a distance, there is need to ensure that students actively participate in their learning by performing specific tasks that help them to understand the relevant concepts. Therefore, a set of exercises is built into the teaching repertoire in order to link what students and tutors do in the framework of the course outline. These could be in the form of students' assignments, a research project or a science practical exercise. Examples of instructional activities in distance education are too numerous to list. Instructional activities, when used in this context, help to motivate students, guide and measure students' performance (continuous assessment)

PREFACE

We have put in lots of hard work to make this book as user-friendly as possible, but we have not sacrificed quality. Experts were involved in preparing the materials. However, concepts are explained in easy language for you. We have included may tables and examples for easy understanding.

We sincerely hope this book will help you in every way you expect.

All the best for your studies from our team!

FINANCIAL STATEMENTS ANALYSIS

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BLOCK 4: MORE ON FINANCIAL STATEMENTS ANALYSIS

UNIT 1 ANALYSIS OF FINANCIAL RECORDS

Balance sheet Analysis, Income Analysis, portfolio Analysis, Risk Analysis

UNIT 2 INTRODUCTION TO PENSIONS AND POST-RETIREMENT BENEFITS

Introduction, Analysis statements

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FINANCIAL STATEMENTS ANALYSIS

BLOCK 4: MORE ON FINANCIAL STATEMENTS ANALYSIS

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Block Introduction

Analysis of financial statement is considered to be one of the important subject in the field of accounting and finance as it is the subject which measures the actual performance of the business. It is only because of this subject that we are able to measure the performance of the business, compare it with our standard or with our past performance and take corrective measure accordingly.

This block plays a very important role in the analysis of financial statements. Being the last block of the book it does loses its importance. It is even as important as the other blocks are. The block contains two units; the first one discusses how we will make analysis from our financial records. This block suggests various ratios which are used in order to measure the performance .There are a various ratios which are used to make analysis from balance sheet and profit and loss account. All have been disscussed in here in this block. The second contains analysis regarding pension and post retirment benefits and how can analysis be made on the basis of pension and post retirement benefits.

After studying this block we will be able to calculate the peformance of any business entity by simple application of ratios and we could easily make further analysis and interpretation too on the basis of those ratios.

Block Objective

After reading this block, you will be able to understand:

- Analysis of financial statements through various ratios.
- The categories of ratios such as balance sheet and profit and loss ratios.
- Much about analysis and interpretations.

Block Structure

Unit 1: Analysis of Financial Records

Unit 2: Introduction to Pension and Post Retirement Benefits

UNIT 1: ANALYSIS OF FINANCIAL RECORDS

Unit Structure

1.0 Learning Objectives

After learning this unit, you will be able to understand:

- Balance sheet analysis
- Income analysis through income statement of the company.
- Portfolio analysis
- Risk analysis

1.1 Introduction

We know business is mainly concerned with the financial activities. In order to ascertain the financial status of the business every enterprise prepares certain statements, known as financial statements. Financial statements are mainly prepared for decision making purposes. But the information as is provided in the

financial statements is not adequately helpful in drawing a meaningful conclusion. Thus, an effective analysis and interpretation of financial statements is required.Analysis means establishing a meaningful relationship between various items of the two financial statements with each other in such a way that a conclusion is drawn. By financial statements we mean two statements:

(i) Profit and loss Account or Income Statement

(ii) Balance Sheet or Position Statement

These are prepared at the end of a given period of time. They are the indicators of profitability and financial soundness of the business concern. The term financial analysis is also known as analysis and interpretation of financial statements. It refers to the establishing meaningful relationship between various items of the two financial statements i.e. Income statement and position statement. It determines financial strength and weaknesses of the firm.

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 the business units. Financial analysis serves the following purposes:

Measuring the profitability

The main objective of a business is to earn a satisfactory return on the funds invested in it. Financial analysis helps in ascertaining whether adequate profits are being earned on the capital invested in the business or not. It also helps in knowing the capacity to pay the interest and dividend.

Indicating the trend of Achievements

Financial statements of the previous years can be compared and the trend regarding various expenses, purchases, sales, gross profits and net profit etc. can be ascertained. Value of assets and liabilities can be compared and the future prospects of the business can be envisaged.

Assessing the growth potential of the business

The trend and other analysis of the business provide sufficient information indicating the growth potential of the business.

Comparative position in relation to other firms

The purpose of financial statements analysis is to help the management to make a comparative study of the profitability of various firmsengaged in similar

businesses. Such comparison also helps the management to study the position of their firm in respect of sales, expenses, profitability and utilising capital, etc.

Assess overall financial strength

The purpose of financial analysis is to assess the financial strength of the business. Analysis also helps in taking decisions, whether funds required for the purchase of new machines and equipments are provided from internal sources of the business or not if yes, how much? And also to assess how much funds have been received from external sources.

Assess solvency of the firm

The different tools of an analysis tell us whether the firm has sufficient funds to meet its short term and long term liabilities or not.

1.2 Balance Sheet Analysis

The purpose of financial statements is to communicate. Financial statements tell you and others the state of your business. The three most commonly prepared financial statements for a small business are a balance sheet, an income statement, and a cash flow statement.

A balance sheet (also known as a statement of financial position) is a formal document that follows a standard accounting format showing the same categories of assets and liabilities regardless of the size or nature of the business. The balance sheets you prepare will be in the same format as IBM's or General Motors'. Accounting is considered the language of business because its concepts are time-tested and standardized. Even if you do not utilize the services of a certified public accountant, you or your bookkeeper can adopt certain generally accepted accounting principles (GAAP) to develop financial statements.

The strength of GAAP is the reliability of company data from one accounting period to another and the ability to compare the financial statements of different companies. The standardization introduced by commonly defined terms is responsible for this reliability. To help you get a grip on accounting terminology, terms are defined as they are introduced and a glossary is included for reference.

Why Create a 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 12 months or the end of an operating cycle to complete a balance sheet. Savvy business owners see a balance sheet as an important decision-making tool.

Over time, a comparison of balance sheets can give a good picture of the financial health of a business. In conjunction with other financial statements, it forms the basis for more sophisticated analysis of the business. The balance sheet is also a tool to evaluate a company's flexibility and liquidity.

How to analyze a balance sheet?

After creating a balance sheet for your business, there are some easy calculations that you can perform that will give you a better understanding of your company. Using data from your balance sheet, you can calculate liquidity and leverage ratios.

These financial ratios turn the raw financial data from the balance sheet into information that will help you manage your business and make knowledgeable decisions. A ratio shows the relationship between two numbers. It is defined as the relative size of two quantities expressed as the quotient of one divided by the other. Financial ratio analysis is important because it is one method loan officers use to evaluate the credit worthiness of potential borrowers. Ratio analysis is a tool to uncover trends in a business as well as allow the comparison between one business and another.

In the following section, four financial ratios that can be computed from a balance sheet are examined:

- Current Ratio
- Quick Ratio
- Working Capital
- Debt/Worth Ratio

Current Ratio

The current ratio (or liquidity ratio) is a measure of financial strength. The number of times current assets exceed current liabilities is a valuable expression of a business' solvency. Here is the formula to compute the current ratio:

$$\text{Current Ratio} = \frac{\text{Total Current Assets}}{\text{Total Current Liabilities}}$$

The current ratio answers the question, "Does my business have enough current assets to meet the payment schedule of current liabilities with a margin of safety?" A rule-of-thumb puts a strong current ratio at two. Of course, the adequacy of a current ratio will depend on the nature of the small business and the character of the current assets and current liabilities. While there is usually little doubt about debts that are due, there can be considerable doubt about the quality of accounts receivable or the cash value of inventory.

A current ratio can be improved by either increasing current assets or decreasing current liabilities.

This can take the form of the following:

- Paying down debt.
- Acquiring a loan (payable in more than one year's time).
- Selling a fixed asset.
- Putting profits back into the business.

A high current ratio may mean that cash is not being utilized in an optimal way. That is, the cash might better be invested in equipment.

Quick Ratio

The quick ratio is also called the "acid test" ratio. It is a measure of a company's liquidity. The quick ratio looks only at a company's most liquid assets and divides them by current liabilities.

Here is the formula for the quick ratio:

$$\text{Quick Ratio} = \frac{\text{(Current Assets – Inventory)}}{\text{Current Liabilities}}$$

The assets considered to be "quick" assets are cash, stocks and bonds, and accounts receivable (all of the current assets on the balance sheet, except inventory). The quick ratio is an acid test of whether or not a business can meet its obligations if adverse conditions occur. Generally, quick ratios between 0.50 and 1 are considered satisfactory as long as the collection of receivables is not expected to slow.

Working Capital

Working capital should always be a positive number. It is used by lenders to evaluate a company's ability to weather hard times. Often, loan agreements specify a level of working capital that the borrower must maintain.

Working Capital = Total Current Assets - Total Current Liabilities

The current ratio, quick ratio and working capital are all measures of a company's liquidity. In general, the higher these ratios are better for the business and the higher degree of liquidity.

Debt/Worth Ratio

The debt/worth ratio (or leverage ratio) is an indicator of a business' solvency. It is a measure ofhow dependent a company is on debt financing (or borrowings) as compared to owner's equity. It shows how much of a business is owned and how much is owed.

The debt/worth ratio is computed as follows:

$$\text{Debt/Worth Ratio} = \frac{\text{Total Liabilities}}{\text{Net Worth}}$$

Check your progress 1

1. _____tell you and others the state of your business.

   a. Financial statements

   b. cost statements

2. The three most commonly prepared financial statements for a small business are a balance sheet, an income statement, and a ___-flow statement.

   a. cash

   b.fund

3. A _____provides a snapshot of a business' health at a point in time.

   a. balance sheet

   b. profit and loss account

4. _____should always be a positive number.

   a. Working capital

   b. running capital

5. The debt/worth ratio is an indicator of a business' _____

   a. solvency

   b. liability

1.3 Income Analysis

The income statement, also called an earnings statement or a profit and loss statement, is an accounting statement that matches a company's revenues with its expenses over a period of time, usually a quarter or a year. The components of the income statement involve a company's recognition of income and the expenses related to earning this income. Revenue less expenses results in a profit or loss. The income statement is a flow measure statement meaning that each value on an income statement represents the cumulative amount of that item through the given accounting period. Thus, the revenue on a first quarter income statement equals the cumulated amount of all sales during the first three months of the firm's fiscal year. The revenue on the second quarter income statement equals the cumulated amount of all sales during the second three months of the firm's fiscal year. The same applies to expenses and therefore profits.

1. Gross profit ratio

Gross profit ratios express the relationship between gross profit and net sales. This ratio is also known as "Turnover ratio"OR "Margin ratio" OR "Gross margin ratio" OR "Rate of gross profit". This ratio is expressed in percentage of net sales. This ratio says about %age gross profit to net sales.

a) Formula:-

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100$$

b) Components of this ratio are:-

1) Net sales = Total sales less sales return

2) Gross profit = Sales - Cost of sales

3) Cost of sales = (opening stock + purchases + direct labour +other direct charge) - closing stock

c) Significance:-

1) This ratio analyse the basic profitability of business.

2) It shows the degree to which the selling price per unit maydecline without resulting in loss from operations.

3) Yearly comparisons of gross profit ratio reveal the trend oftrading results.

2. Operating Ratio

This ratio studies the relationship between cost of activitiesand net sales i.e. cost of goods sold and net sales. This ratio shows the percentage of cost of goods sold with net sales. Thisratio is expressed in percentage.

a) Formula:-

$$\text{Operating Ratio} = \frac{\text{Operating Cost}}{\text{Net Sales}} \times 100$$

b) **Components:** Operating cost is equal to cost of goods soldand other operating expenses like administrative expenses, selling & distribution expenses etc. excluding finance expenses, income taxes, loss on sale of assets, etc.

c**) Purpose:** Purpose of operating ratio is to ascertain theefficiency of the management regarding operation of businessconcern.

d) **Significance:**

1) It is used to test operational efficiency of business.

2) This ratio is the yardstick which measures the efficiency ofall operational activities of business i.e. production, management, administration, sales, etc.

e) Limitation of operating ratio:-

1) It cannot test profitability of business without consideringextra - ordinary items.

2) The utility of operating ratio is limited owing to itsvulnerability to changes in management decisions.

3. Expenses Ratio

This ratio explains relationship of items or group of expenseto net sales. Such ratios are collectively known as expanses ratio.This is calculated and expressed in percentage. This ratio expresses the percentage of items of expenses with net sales.

a) Formula:-

$$\text{Expenses Ratio} = \frac{\text{Items or Group of Expenses}}{\text{Net Sales}} \times 100$$

b) Various expenses ratios are as follows:-

1) Administrative expenses ratio = $\frac{\text{Administrative Expenses}}{\text{Net Sales}} \times 100$

2) Selling & Dist. expenses ratio = $\frac{\text{Selling and Dist. Expenses}}{\text{Net sales}} \times 100$

3) Cost of material consumed ratio= $\frac{\text{Cost of material consumed}}{\text{Net Sales}} \times 100$

4) Manufacturing expenses ratio = $\frac{\text{Manufacturing Expenses}}{\text{Sales}} \times 100$

5) Non-operating expenses ratio = $\frac{\text{Non Operating expenses}}{\text{Net Sales}} \times 100$

c) Purpose and significance:-

1) This ratio helps us to know the cause behind overallchanges in operating ratio
2) Purpose of this ratio is to take corrective action.
3) It indicates the efficiency of management in controllingexpenses and improving profitability.
4) This ratio enables the income tax department to judge thecorrectness and reliability of income disclosed in income taxreturns.
5) Analytical study of this ratio can be judged by trend ofexpenses.
6) Comparative study of year to year expenses can be possible.

4. Net profit ratio

Net profit ratio indicates the relationship between net profitand net sales. Net profit can be either operating net profit or netprofit after tax or net profit before tax. Alternatively this ratio is alsoknown as "Margin on sales ratio". Normally this ratio is calculated& expressed in percentage.

a) Formula:-

$$\text{Net profit ratio} = \frac{\text{Net Profit}}{\text{Net Sales}} \times 100 \text{ OR } \frac{\text{NPAT}}{\text{Net Sales}} \times 100 \text{ OR } \frac{\text{NPBT}}{\text{Net Sales}} \times 100$$

b) Significance:-

1) It measures overall profitability of business.

2) It is very useful in judging return on investments.

3) It provides useful inferences as to the efficiency andprofitability of business.

4) It indicates the portion of net sales is available forproprietors.

5) It is clear index of cost control, managerial efficiency, salespromotion, etc.

5. Net operating profit ratio

Operating profit ratio indicates the relationship betweenoperating profit and net sales. This ratio is expressed inpercentage.

a) Formula:-

$$\text{Net operating profit ratio} = \frac{\text{Net Operating Profit}}{\text{Net Sales}} \times 100$$

b) Components:-

1) Net operating profit is equal to gross profit minus alloperating expenses or sales minus cost of goods sold andoperating expenses.

2) Net sales are equal to sales minus sales returns.

c) Significance:-

1) It signifies higher operating efficiency of management andcontrol over operating cost.

2) It indicates profitability of various operations of theorganization i.e. buy, manufacture, sales, etc.

3) It shows ability of organization to generate operating profitout of its daily operations.

6. Stock Turnover Ratio

Stock turnover ratio shows relationship between costs ofgoods sold and average stock. This ratio is also known as"Inventory Ratio" or "Inventory Turnover Ratio" or "Stock TurnRatio" or "Stock Velocity Ratio" or "Velocity of Ratio".This ratio measures the number of times of stock turns orflows or rotates in an accounting period compared to the salesaffected during that period. This ratio indicated the frequency ofinventory replacement. This ratio is expressed as rate.

a) Formula:-

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{Average Stock}}$$

b) Components:-

1) Cost of goods sold = Sales – Gross Profit

2) $$\text{Average Stock} = \frac{\text{Opening Stock + Closing Stock}}{2}$$

* If opening stock is not given, the closing stock is treated asaverage stock.

c) Alternative method of stock turnover ratio: This ratio canbe calculated by using average stock at selling price at as thedenominator. Under this method, average stock at selling priceis related to net sales.

$$\text{Stock Turnover Ratio} = \frac{\text{Net Sales}}{\text{Average Inventory at selling price}}$$

d) Purpose: - Purpose of stock turnover ratio is to

1) Calculate the speed at which the stock is being turned overinto sales.

2) Calculate the stock velocity to indicate the period takes byaverage stock to be sold out.

3) Judge how efficiently the stock are managed and utilised togenerate sales.

Check your progress 2

1. The income statement, also called an_____statement.

   a. earnings

   b. balance sheet

2. _____-profit ratios express the relationship between gross profit and net sales.

   a. Gross

   b. net

3. _____Ratio studies the relationship between cost of activities and net sales i.e. cost of goods sold and net sales.

   a. Operating

   b. net

4. _____turnover ratio shows relationship between costs of goods sold and average stock.

   a. stock

   b. Operating profit

5. _____ratio indicates the relationship between operating profit and net sales.

   a. Operating profit

   b. stock turnover

1.4 Portfolio Analysis

The single most prominent factor that has spurned the growth of portfolio management globally has been demographics. As more and more people across the developed world live longer, accumulate more wealth and have progressively higher standards of living, the need for financial security for the ageing population becomes vital. Increasingly, governments are withdrawing from the responsibility

of providing retirement benefits to individuals, leading to a reduction in the welfare system. Corporations are also diminishing their role in the provision of retirement benefits to their employees. Individuals themselves are becoming more accountable for their own financial well-being after retirement. And trends that start in developed countries are often later replicated in the developing world. Thus, portfolio management as a vehicle for increasing personal wealth is set to continue in an expansionary phase. Granted, markets go up and down, and individuals' inclinations towards investments in certain assets such as in bonds or in equities fluctuate over time. Nonetheless, portfolios or funds of pooled assets remain a means by which both individuals and institutions can, over time, enhance the returns on their savings.

The choices of types of funds in which to invest are also continually evolving as markets change and as innovative products surface and are incorporated into new categories of funds. The goal of portfolio management is to bring together various securities and other assets into portfolios that address investor needs, and then to manage those portfolios in order to achieve investment objectives. Effective asset management revolves around a portfolio manager's ability to assess and effectively manage risk. With the explosion of technology, access to information has increased dramatically at all levels of the investment cycle. It is the job of the portfolio manager to manage the vast array of available information and to transform it into successful investments for the portfolio for which he/she has the remit to manage.

Measuring returns

Once a portfolio has been established, it is important to monitor the fund's performance. Measuring the performance of a portfolio involves calculating the returns achieved by the fund over a particular period of time, known as the evaluation period. The evaluation period used to monitor performance may be weekly, monthly, quarterly or annually. Various methods may be used to calculate returns, each giving a different result. Parties interested in evaluating performance use consistent and standard methods for calculating and presenting returns, several of which are reviewed below. Performance evaluation involves comparing the performance of a fund against a suitable yardstick or benchmark (usually a relevant index) after adjusting for risk in order to determine how the fund manager has performed and how the returns were actually achieved. Evaluation enables the investor to check that the agreed investment strategy has been followed, and to assess the skill of the fund manager. Calculating returns Clients, trustees of pension funds and unit trusts, board of directors of investment trust companies and

managers of fund management departments are amongst the groups interested in monitoring the capabilities of the fund managers and analysts who contribute to the running of the funds. Although calculating returns is simple in theory, it is relatively more complex in practice. The methods considered are money return, time weighted return and money-weighted return.

Money return

The first step in assessing performance is to measure the total return that a fund has produced. To calculate this return, the value of each share in the fund at the beginning of the evaluation period is multiplied by the number of shares held. The sum of these values is the market value of the portfolio at the beginning of the time period. The same procedure is carried out using the market prices and amounts of the holdings at the end of the time period to calculate the market value of the portfolio at the end of the evaluation period. The total return (also known as money return) from the portfolio is calculated as follows:

$$\text{Total return } r = \frac{V_{end} - V_{beginning}}{V_{beginning}}$$

Where:

Vbeginning = market value of the fund at the beginning of the period

Vend = market value of the fund at the end of the period (including reinvested dividends orcoupon payments).

If, for example, Vend is £5 million, Vbeginning is £4 million, calculate the money return:

$r = £5 – £4/£4 \times 100 = 25\%$

The next step to examine is what happens when clients add new money to the fund orwithdraw money from the fund. Money may be added or withdrawn at any time during theexamination period. If the money is added just before the end of the period, the aboveformula would have to be adjusted as follows:

$$r = \frac{(V_{end} - D) - V_{beginning}}{V_{beginning}}$$

Where:

Vend = the portfolio value at the end of the period

Vbeginning = the portfolio value at the beginning of the period

D = deposits into the fund by the investor.

For example, if Vend is £5 million, Vbeginning is £4 million and a cash input (D) of £250

000 is made, the money return is calculated as:

r = (£5 – £0.25) – £4/£4 × 100 = 12.5%

If the cash input had not been subtracted, the return quoted would have been 25% rather than 12.5%. This would have been misleading, since part of the increase was due to money coming into the fund and not to the fund manager's skill. Withdrawals from a fund or distributions made from a fund to shareholders can also produce a distorting effect, and thus the timing of deposits into and withdrawals from a portfolio must be taken into account. The above example assumes distributions into and out of the fund is made at the end of the period. This is unlikely to be true in practice, and the following two methods overcome the problem by breaking the evaluation period into smaller sub-periods.

Risk-adjusted portfolio performance measures

Measuring the risk associated with a portfolio is one important aspect of measuring portfolio performance. Portfolio returns must be adjusted for risk before they can be compared meaningfully. The easiest way to adjust returns for portfolio risk is to compare rates of return amongst portfolios with similar risk profiles. This process may be misleading, however, for some managers may concentrate on particular subgroups, so that the portfolio profiles are not actually that comparable. More accurate measures of portfolio returns have come into vogue to calculate risk-adjusted returns using mean-variance criteria and measuring both risk and return. Riskadjusted returns are not necessarily perfect measurements, as they do not take into account transaction costs. They are, however, important tools for providing information about portfolios. Three of the most popular risk adjusted measures will now be examined. They differ from one another according to the risk measure used.

The Sharpe measure

The Sharpe ratio measures excess return per unit of risk, or, in other words, uses an estimate of total risk of a portfolio to calculate excess return to volatility (volatility being the standard deviation of the returns).

$$\text{Sharpe Measure} = \frac{R_p - R_f}{\sigma_p}$$

Where

Rp = the return achieved on the portfolio

R_f = the return available from a risk-free asset = the standard deviation of the return on the portfolio.

The higher the value of this measure the better value the portfolio represents, since as gets smaller the total risk of the portfolio gets smaller. If the Sharpe ratio is negative the portfolio's performance is less than the risk-free rate and the negative figure itself cannot be compared to other negative figures.

The Treynor measure

The Treynor ratio uses the beta coefficient or the systematic risk of the portfolio as its measure of risk. It is a measure of the portfolio's excess return with respect to its beta.

$$\text{Treynor measure} = \frac{R_p - R_f}{\sigma_p}$$

Where:

Rp = the return achieved on the portfolio

Rf = the return from the risk-free asset = the CAPM beta of the portfolio.

The higher the value of the Treynor measure the better the value represented by the portfolio, since a higher beta represents higher systematic risk. The Treynor measure may be preferred by investors who are running highly diversified portfolios, as the measure does not consider unsystematic risk. A portfolio holding a large number of investments should see the unsystematic risk diversified away. The Sharpe measure, which considers total risk, may be preferred by investors with less diversified portfolios.

The Jensen measure

The Jensen ratio calculates the excess return that a portfolio generates over that predicted by CAPM based on the beta of the portfolio and the average market return. Jensen's measure is the portfolio's alpha value. CAPM can be used to construct a benchmark portfolio with a given amount of systematic risk and measure the difference in return of this portfolio (benchmark) and the return achieved by the portfolio manager.

Jensen measure =

$R_b = R_f + \beta_b (R_m - R_f)$

Where:

R_p = the return on the portfolio being evaluated

R_b = the return on the benchmark portfolio

β_b = the benchmark portfolio's CAPM beta

To summarize:

The Sharpe ratio looks at total risk

The Treynor ratio takes into account systematic risk

The Jensen measure looks at the performance of the portfolio over and above that of a benchmark.

If an investor has limited holdings, then standard deviation may provide a more accuratemeasure of risk. Likewise, if an investor holds a wide variety of holdings outside of oneparticular mutual fund, then beta may be a more accurate measure of risk.

For example, two fund managers are employed to manage two portfolios with identicalobjectives. Details of their portfolios are as follow:

Fund	Return	Beta (β_p)	Total risk (σ_p)
A	10%	1.03	10%
B	14%	1.25	20%

Using the Sharpe measure,

$$\text{Sharpe measure} = \frac{R_p - R_f}{\sigma_p} \quad (\text{assume } R_f = 4.5\%)$$

$$\text{Fund A} = \frac{10 - 4.5}{10} = 0.55$$

$$\text{Fund B} = \frac{14 - 4.5}{20} = 0.48$$

Where:

It can be concluded that, on a risk-adjusted basis considering total risk, fund manager A has outperformed fund manager B.

Using the Treynor measure,

Where:

$$\text{Treynor measure} = \frac{R_p - R_f}{\beta_p}$$

$$\text{Fund A} = \frac{10 - 4.5}{} = 5.34\%$$

$$\text{Fund B} = \frac{14 - 4.5}{1.25} = 7.6\%$$

It can be concluded that, on a risk-adjusted basis taking into account systematic risk, fund manager B has outperformed fund manager A.

Using the Jensen measure, where:

Jensen measure $= \alpha = R_p - R_b$

$R_b = R_f + \beta_b (R_m - R_f)$ (assume $R_m = 8\%$)

$R_a = 4.5 + 1.03\ (8 - 4.5) = 8.1\ \%$

$R_b = 4.5 + 1.25\ (8 - 4.5) = 8.9\%$

$\alpha_a = R_a = 10.0 - 8.1 = 1.9\%$

$\alpha_b = R_b = 14.0 - 8.9 = 5.1\%$

It can be concluded that on a risk-adjusted basis (systematic risk), fund manager B has performed better than fund manager A. One more point to note is that returns will be affected by tax rates, inflation over time, and foreign exchange rates when applicable.

Check your progress 3

1. The single most prominent factor that has spurned the growth of portfolio management globally has been_____.

   a. demographics

   b. profit and loss

2. The goal of _____management is to bring together various securities and other assets into portfolios.

   a. portfolio

   b. asset

3. Once a _____has been established, it is important to monitor the fund's performance.

   a. portfolio

   b. Asset

4. The first step in _____performance is to measure the total return that a fund has produced.

   a. assessing

   b. interrelating

5. Measuring the risk associated with a portfolio is one important aspect of measuring_____.

   a. portfolio performance

   b. business performance

1.5 Risk Analysis

Modern society is often described as "the society of risk", which means that the social production of wealth is accompanied by the social production of risk Therefore, enterprises operating in such environment, are forced to take up different types of risk, in order to develop themselves and increase their effectiveness. Thus their exposure to risk is constantly growing. There is a huge variety of corporate risks that are analyzed and classified taking into account different types of criteria. One of the most important types of corporate risk is financial risk.

In the theory of finance, one can also find different meaning of financial risk. In narrow meaning the financial risk is described as the additional risk borne by the shareholders due to the substitution of debt for common stock. Thus, in this meaning, financial risk is an equivalent to the capital structure risk.

In broad meaning, the financial risk is defined as any fluctuation in the cash flows, financial results and the company's value due to the influence of different types of factors; mainly market ones, such as: interest rates, exchange rates and commodity and stock prices. So, according to this definition financial risk is responsible for any changes in the financial condition of the company.

By using balance sheet information the three components of the financial risk can be identified and analyzed: capital structure risk, liquidity risk and insolvency risk .To analyze the capital structure risk one should calculate the D/E ratio (debt-to-equity ratio) comparing debt to equity capital used by the company to finance its assets. D/E ratio is one of the most important indebtedness ratios showing the financial leverage used by the company. The higher this ratio is, the

higher financial risk connected with using debt capital by the company. The optimal value for this ratio is described as 1 till 3 – in this situation the company can use all the advantages of the debt capital (mainly tax shield) without too high risk of financial distress.

As from the discussion it is very clear that a business is exposed several risks in it day to day life. As far as their analysis is concerned there a certain risk which can be analysed through its financial statements with the help of various tools. They are as follows.

I. Analysis of a Company's Use of Debt

1. Debt to Total Capital

This measure the proportion of debt used given the total capital structure of the company. A large debt-to-capital ratio indicates that equity holders are making extensive use of debt, making the overall business riskier.

Formula

$$\text{Debt to capital} = \frac{\text{total debt}}{\text{total capital}}$$

Where:

Total debt = current + long-term debt

Total capital = total debt + stockholders' equity

2. Debt to Equity

This ratio is similar to debt to capital.

Formula

$$\text{Debt to equity} = \frac{\text{total debt}}{\text{total equity}}$$

II. Analysis of the Interest Coverage Ratio

3. Times Interest Earned (Interest Coverage ratio)

This ratio indicates the degree of protection available to creditors by measuring the extent to which earnings available for interest covers required interest payments.

Formula

$$\text{Times interest earned} = \frac{\text{earning before interest and tax}}{\text{Interest expense}}$$

4. Fixed-Charge Coverage

Fixed charges are defined as contractual committed periodic interest and principal payments on leases and debt.

Formula

$$\text{Fixed-charge coverage} = \frac{\text{earning before fixed charges and taxes}}{\text{Fixed charges}}$$

5. Times Interest Earned - Cash Basis

Adjusted operating cash flow is defined as cash flow from operations + fixed charges + tax payments.

Formula

$$\text{Times interest earned - cash basis} = \frac{\text{adjusted operating cash flow}}{\text{Interest expence}}$$

6. Fixed-Charge Coverage Ratio - Cash Basis

Formula

$$\text{Fixed charge coverage ratio - cash basis} = \frac{\text{adjusted operating cash flow}}{\text{Fixed charges}}$$

7. Capital Expenditure Ratio

Provides information on how much of the cash generated from operations will be left after payment of capital expenditure to service the company's debt. If the ratio is 2, it indicates that the company generates two times what it will need to reinvest in the business to keep operations going; the excess could be allocated to service the debt.

Formula

$$\text{Capital expenditure ratio} = \frac{\text{cash flow from operations}}{\text{capital expenditures}}$$

8. CFO to Debt

Provides information on how much cash the company generates from operations that could be used to pay off the total debt. Total debt includes all interest-bearing debt, short and long term.

Formula

$$\text{CFO to debt} = \frac{\text{cash flow from operations}}{\text{total debt}}$$

Check your progress 4

1. In broad meaning, the _____risk is defined as any fluctuation in the cash flows.

   a. financial

   b. environmental

2. By using _____information the three components of the financial risk can be identified and analyzed: capital structure risk, liquidity risk and insolvency risk.

   a. balance sheet

   b. profit and loss

3. Debt to Total _____measures the proportion of debt used given the total capital structure of the company.

   a. Capital

   b. asset

4. _____charges are defined as contractual committed periodic interest and principal payments on leases and debt.

   a. Fixed

   b. variable

5. _____Ratio information on how much of the cash generated from operations will be left after payment of capital expenditure to service the company's debt.

   a. Capital Expenditure

   b. asset expenditure

1.6 Let Us Sum Up

In this block we have studied that balance sheets present the health of a company as of one point in time, valuable information will be lost if managers do not take the opportunity to compare the progress and trend of a business by regularly evaluating and comparing balance sheets of past time periods. Information is power. The information that can be gleaned from the preparation

and analysis of a balance sheet is one financial management tool that may mean the difference between success and failure.

From the discussion of this unit now it has been very clear how far important is preparation of financial statements and more important how much important is its correct interpretation and analysis. In this unit we studied various balance sheet and profit and loss ratios which help us in different ways to make analysis of the performance of business and its current financial position.

1.7 Answers for Check Your Progress

Check your progress 1

Answers: (1-a), (2-a), (3-a), (4-a), (5-a)

Check your progress 2

Answers: (1-a), (2-a), (3-a), (4-a), (5-a)

Check your progress 3

Answers: (1-a), (2-a), (3-a), (4-a), (5-a)

Check your progress 4

Answers: (1-a), (2-a), (3-a), (4-a), (5-a)

1.8 Glossary

1. **Allowance for Bad Debts -** Amount of estimated debt to the business that is not expected to be repaid and is subtracted from accounts receivable on the balance sheet. Also known as an allowance for doubtful accounts.
2. **Assets -** Anything that a business owns that has monetary value.
3. **Accounts Payable -** Debts of the business, often to suppliers, and generally payable within 30 days.
4. **Accounts Receivable -** An amount owed to the business, usually by one of its customers, as result of the extension of credit.
5. **Accrued Payroll Taxes -** Taxes payable for employee services received, but for which payment has not yet been made.

6. **Balance Sheet -** A financial statement showing the assets, liabilities, and net worth of a business as of a specific date.
7. **Current Assets -** Cash and other assets readily converted into cash. Includes accounts receivable, inventory, and prepaid expenses.
8. **Current Liabilities -** The debts of a company which are due and payable within the next 12 months.
9. **Current Ratio -** Current assets divided by current liabilities.
10. **Debt/Worth Ratio -** Total Liabilities divided by Net Worth.
11. **Depreciation -** An accounting convention to take into account the physical deterioration of an asset. It is a systematic method to allocate the historical cost of the asset over its useful life.
12. **Fixed Assets -** Also called long-term assets with a relatively long life that is used in the production of goods and services, rather than being for resale.
13. **GAAP -** Abbreviation of Generally Accepted Accounting Principles. Conventions, rules, and procedures that define accepted accounting practice.
14. **Inventory -** Goods held for sale, raw material and partially finished products which will be sold when they are finished.
15. **Liabilities -** Debts of the business.
16. **Liquidity -** The ability to produce cash from assets in a short period of time.
17. **Long-Term Liabilities -** Debts of a company due after a period of 12 months or longer.
18. **Net Worth -** The business owner's equity in a company as represented by the difference between assets and liabilities.
19. **Owners' Equity -** See Net Worth.
20. **Quick Ratio -** Current Assets minus Inventory, divided by Current Liabilities. Also known as the acid test.
21. **Working Capital -** Current Assets minus Current Liabilities.

1.9 Assignment

What do you understand by financial statement analysis?

1.10 Activities

Discuss the various ratios which are computed from the balance sheet.

1.11 Case Study

Discuss the various ratios which are computed from the income statement.

1.12 Further Readings

1. Accounting Principles and Applications by Horace R. Brock (McGraw Hill, 1990).
2. Analysis and Use of Financial Statements by Gerald I. White, Ashwinpaul C. Sondhi and Dov Fried (John Wiley & Sons, 1997).
3. Corporate Controller's Handbook of Financial Management 2nd ed. by Joel G. Siegel, Jae K. Shim and Nicky A. Dauber (Prentice Hall, 1997).
4. Handbook of Budgeting 4th ed. by Robert Rachlin (Wiley, 2000).
5. Winning Business: How to Use Financial Analysis and Benchmarks to Outscore Your Competition (with CD-ROM) by Rich Gildersleeve (Gulf Publishing, 1999).

UNIT 2: INTRODUCTION TO PENSIONS AND POST-RETIREMENT BENEFITS

Unit Structure

2.0 Learning Objectives

After learning this unit, you will be able to understand:

- Retirement and post retirement benefits
- Statements analysis

2.1 Introduction

A pension is a fixed sum to be paid regularly to a person, typically following retirement from service. There are many different types of pensions, including defined benefit plans, defined contribution plans, as well as several others. Pensions should not be confused with severance pay; the former is paid in regular installments, while the latter is paid in one lump sum.

The terms retirement plan and superannuation tend to refer to a pension granted upon retirement of the individual. Retirement plans may be set up by employers, insurance companies, the government or other institutions such as employer associations or trade unions. Called retirement plans in the United

States, they are commonly known as pension schemes in the United Kingdom and Ireland and superannuation plans (or super) in Australia and New Zealand. Retirement pensions are typically in the form of a guaranteed life annuity, thus insuring against the risk of longevity.

A pension created by an employer for the benefit of an employee is commonly referred to as an occupational or employer pension. Labor unions, the government, or other organizations may also fund pensions. Occupational pensions are a form of deferred compensation, usually advantageous to employee and employer for tax reasons. Many pensions also contain an additional insurance aspect, since they often will pay benefits to survivors or disabled beneficiaries. Other vehicles (certain lottery payouts, for example, or an annuity) may provide a similar stream of payments.

Nature of Pension Plans

A pension plan is an arrangement whereby an employer provides benefits (payments) to retired employees for services they provided in their working years. Pension accounting may be divided and separately treated as accounting for the employer and accounting for the pension fund. The company or employer is the organization sponsoring the pension plan. It incurs the cost and makes contributions to the pension fund. The fund or plan is the entity that receives the contributions from the employer, administers the pension assets, and makes the benefit payments to the retired employees (pension recipients).

A pension plan is funded when the employer makes payments to a funding agency. That agency accumulates the assets of the pension fund and makes payments to the recipients as the benefits come due.

Some pension plans are contributory. In these, the employee's bear part of the cost of the stated benefits or voluntarily make payments to increase their benefits. Other plans are noncontributory. In these plans, the employer bears the entire cost. Companies generally design their pension plans so as to take advantage of federal income tax benefits. Plans that offer tax benefits are called qualified pension plans. They permit deductibility of the employer's contributions to the pension fund and tax-free status of earnings from pension fund assets.

2.2 Analysis Statements

The determination of pension costs and obligations is based on the attribution of pension benefits to periods of employee service and the use of actuarial assumptions to calculate the present value of such benefits. Actuarial assumptions reflect the time value of money and the probability of payment. The following three key economic assumptions determine pension costs

1. The discount rate
2. The salary scale
3. The expected long-term rate of return on plan assets

1. Discount Rate

Discount rates are used to calculate the present value of pension obligations and the service and interest cost components of net periodic pension cost. The discount rate is intended to represent the rate at which pension benefit obligations could be effectively settled. According to the Financial Accounting Standards Board, a variety of measures can be used as bases for determining the discount rate, including rates implicit in current annuity rates or available rates on high quality corporate bond yields. The disclosure of obligations in the financial statement is based on the discount rate selected at the end of the fiscal year. Components of pension cost are based on the discount rate selected at the prior year-end.

2. Salary Scale

The salary scale assumption is used to project current salaries into the future. The assumption is a factor for pay-related plans in determining the PBO and the service cost. Year-to-year growth in compensation results from long term trends in:

- Productivity improvements
- Price inflation
- Merit or promotional increases
- Seniority raises

3. Expected Rate of Return

The expected rate of return on assets is the long-term expectation of the pension fund's annual earnings rate. The expected return on assets is a credit component of net periodic pension cost.

Other Postretirement Benefit Costs and Obligations

The determination of the costs and obligations for post retirement benefits other than pensions is based on the calculation of the actuarial present value of the postretirement benefits that are expected to be paid to or on behalf of current and future retirees under the terms of the plan and the attribution of such present value to periods of service. Generally, the attribution period is from the date of hire to the date the employee gains full eligibility for benefits. Benefits are allocated equally to each year of service, unless the plan attributes a greater share of benefits to earlier years of service.

The accumulated post retirement benefit obligation (APBO) as of a particular date is the actuarial present value of expected benefits attributed to current and former employees' service rendered to that date. A postretirement benefit plan's APBO includes salary progression if the plan's benefits are pay-related.

Actuarial assumptions are used to determine the present value of expected benefits. The following actuarial assumptions are required to be disclosed:

- The discount rate
- The health care cost trend rate
- The salary scale assumption
- The expected long-term rate of return on plan assets

Check your progress 1

1. _____are used to calculate the present value of pension obligations and the service and interest cost components of net periodic pension cost.

   a. Discount rates

   b. ratio analysis

2. Generally, the attribution period is from the date of hire to the date the employee gains full _____for benefits.

   a. eligibility

   b. ineligibility

2.3 Let Us Sum Up

In this unit we studied about pension and post retirement benefits that are paid to an employee after his or her superannuation or retirement. The compensation in form of payment has certain cost that has to be incurred by the employer. Generally the payment of pension is prevailent in governement sector but when ever it is paid it puts a financial burden on the employer who is the payer. In this unit we have discussed the same in a very brief.

Employee compensation comes in many forms. Salaries and wages, of course, provide direct and current payment for services provided. However, it's commonplace for compensation also to include benefits payable after retirement. We discuss pension benefits and other postretirement benefits in this chapter. Accounting for pension benefits recognizes that they represent deferred compensation for current service. Accordingly, the cost of these benefits is recognized on an accrual basis during the years that employees earn the benefits.

2.4 Answers for Check Your Progress

Check your progress 1

Answers: (1-a), (2-a)

2.5 Glossary

1. **Pension -** a regular payment made by the state to people of or above the official retirement age and to some widows and disabled people.

2.6 Assignment

What do you understand by pension? Discuss.

2.7 Activities

Discuss pension and its nature.

2.8 Case Study

Discuss the various economic assumptions determining the pension cost.

2.9 Further Readings

1. Analysis and Use of Financial Statements by Gerald I. White, Ashwinpaul C. Sondhi and Dov Fried (John Wiley & Sons, 1997).

Block Summary

So after completing this block we understood various types of analysis which are essential for any kind of business entity. Analysis of business performance is even very much important and for this there are certain tools which help us a lot. There are a number of ratios for the purpose of analysis of business performance. In the above two blocks we studied a number of balance sheet, income statement ratios which help us in this purpose. In this block we even studied about pension and the cost associated with it.

After studying this unit we have learnt the various techniques that will help us in evalutating the performance of business and analysis of cost that have been incurred in the business. These tools also helps to compare the performance of our business with its past performance not only this they also provide us a comparative study with other business firms.

Block Assignment

Short Answer Questions

1. Analysis of financial statements.
2. Balance sheet analysis ratios.
3. Income statement analysis ratios.
4. Portfolio analysis.
5. Risk analysis.

Long Answer Questions

1. What do you understand by portfolio? How will you analyse a portfolio? Discuss.
2. Explain pension and post retirment benefits in reference to this block.

Enrolment No. ☐

1. How many hours did you need for studying the units?

Unit No	**1**	**2**	**3**	**4**
Nos of Hrs				

2. Please give your reactions to the following items based on your reading of the block:

Items	Excellent	Very Good	Good	Poor	Give specific example if any
Presentation Quality	☐	☐	☐	☐	_____
Language and Style	☐	☐	☐	☐	_____
Illustration used (Diagram, tables etc)	☐	☐	☐	☐	_____
Conceptual Clarity	☐	☐	☐	☐	_____
Check your progress Quest	☐	☐	☐	☐	_____
Feed back to CYP Question	☐	☐	☐	☐	_____

3. Any Other Comments

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Education is something which ought to be brought within the reach of every one.

- Dr. B. R. Ambedkar

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