Centre for Distance & Online Education
(CDOE)

BACHELOR OF COMMERCE

BCOM 501

MANAGEMENT ACCOUNTING

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CONTENTS

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Lesson no. :01	

AN INTRODUCTION TO MANAGEMENT ACCOUNTING

Structure

1.0 LEARNING OBJECTIVES

After reading this lesson, you should be able to

- Explain the meaning of management accounting and state the nature and scope of management accounting.
- Differentiate between financial accounting and management accounting, and cost accounting and management accounting.
- Describe the objectives, techniques and functions of management accounting.
- List down the advantages and limitations of management accounting.

1.1 INTRODUCTION

Accounting plays a critical role in the efficient use of a firm's resources. Decision-makers operate in a dynamic and complex business environment. Therefore, their information needs change with the changing environment and accounting must adapt to satisfy these changing needs. The importance of financial information has always been recognized but in the light of present business scenario, such information has become a resource parallel in importance to factors of production. As business organisations have begun to recognize this vital resource and their dependence on it, they have also begun to realize that a system for managing this resource is essential. This is perhaps the basic reason for business students to possess some knowledge about accounting.

Modern accounting as a dynamic and growing field has to monitor and analyse the rapidly changing business environment. It has to serve as a vehicle for communicating the essential data about the financial activities of a business to its management for making decisions. At the same time, management must possess a fair knowledge of tools and techniques that it can use for analysing and interpreting the available information in order to accomplish managerial objectives. Both these essential elements to modern business financial information and analytical techniques are covered by Management Accounting as it involves the study of accounting information and techniques that managers use in analysing such information.

1.2 MEANING, NATURE, CHARACTERISTICS AND SCOPE OF MANAGEMENT ACCOUNTING

The financial accounting is mainly concerned with the preparation of final accounts, i.e., Profit and Loss Account and Balance Sheet. It only ensures that all transactions done with funds entrusted to management have properly been recorded and capital has been kept intact. It measures the income of the concern as a whole by distinguishing between revenues and costs and gives assurance to owners and creditors that their investments are safe. Though, Financial accounting conveys meaningful information to the outsiders, it fails to communicate valuable and varied information to management. Such varied information can be had by interpreting and analysing the results. Thus, recording of transactions is now considered to be the secondary function of the accountant. His primary function is now to analyse and interpret the results and to report them to various levels of management. It is also alleged that financial accounting does not consider those factors which cannot be quantified. It is also said that financial accounting provides post-mortem records of business events.

A small undertaking with a local character is generally managed by the owner himself. The owner is in touch with day-to-day working of the enterprise and he plans and co-ordinates the activities himself. The use of simple accounting enables the preparation of Profit and Loss Account and Balance Sheet for determining profitability and assessing financial position of the enterprise.

All informational needs for managerial purposes are met by simple financial statements. Since the owner is both the decision maker and implementer of such decisions, he does, not feel the necessity of any communication system and no additional information is required for managerial purposes. The evolution of joint stock company form of organisation has resulted in large-scale production and separation of ownership and management.

The introduction of professionalism in management has brought in the division of organisation into functional area and delegation of authority and decentralisation of decision-making. The decision-making no more remains a matter of intuition. It requires the evolution of information system for helping management in planning and assessing the results. The accounting information is required as a guide for future. The management is to be fed with precise and relevant information so as to enable it in performing managerial functions efficiently and effectively.

Management accounting was not known to the business world until 1950. The term was first formally described in a report entitled 'Management Accounting' in 1950. The report was published by the *Anglo American Council of Productivity* Management Accounting Team after its visit to United States during April, May and June 1950. The terminology of cost accountancy had no reference to the word management accountancy before the report of this study group. The complexities of business environment have necessitated the use of management accounting for planning, co-ordinating and controlling functions of management.

Additionally, at present, when the tempo of our thinking and way of life in general having become faster, technological changes taking place day-after-day, economic and social values being obsolete over the night, the business or management can no longer wait upto the end of the year to know the relationship and problems arising from the day-to-day business transactions. He must know the effects of his policies sooner than it is too late and he is totally overpowered by the economic forces, In other words, correct information regarding the effect of each business transactions must be gathered often from week to week or from month to month.

Further, cost accounting, no doubt, serves the internal management by directing their attention on inefficient operations and assisting in a day-to-day control of activities of the enterprise. But even costing information fails to meet informational needs for managerial functions. The costing data needs to be arranged, re-analysed and processed further for playing more effective role in the managerial process. In addition to costing and accounting data, managerial functions need the use of socio-economic and statistical data. These information are beyond the scope of cost accounting and financial accounting which pave the way of emergence of management accounting. Management accounting provides all possible information required for managerial purposes. Probably, these are the main reasons which provided impetus to the development of the techniques which is now commonly known as management accounting.

Management Accounting is comprised of two words ‘Management’ and ‘Accounting’. It is the study of managerial aspect of accounting. It is the presentation of accounting information in such a way as to assist management in the creation of policy and the day-to-day operation of an undertaking. Thus, it relates to the use of accounting data collected with the help of financial accounting and cost accounting for the purpose of policy formulation, planning, control and decision-making by the management.

Some leading definitions of management accounting are as follows:

1. “Management accounting is concerned with accounting information that is useful to management.” –R.N. Anthony

2. “Management accounting is the term used to describe he accounting methods, systems and techniques which, coupled with special knowledge and ability, assist management in itstask of maximising profits or minimising losses.” –J. Batty

3. “Management accounting is the adaptation and analysis of accounting information and its diagnosis and explanations in such a way as to assist management.” –TG. Rose

NATURE AND CHARACTERISTICS OF MANAGEMENT ACCOUNTING

The following points may be considered as the characteristics or the nature of management accounting:

1. Technique of Selective Nature: Management accounting is a technique of selective nature. It takes into consideration only that data from the income statement and position statement (Balance Sheet) which is relevant and useful to the management. Only that information is communicated to the management which is helpful for taking decisions on various aspects of the business.

2. Concerned with Future: Management accounting unlike the financial accounting deals with the forecast with the future. t helps in planning the future because decisions are always taken for the future course of action,

3. Providing Accounting Information: Management accounting is based on accounting information. The collection and classification of data is the primary function of accounting department. The information so collected is used by the management for taking policy decisions. Management accounting involves the presentation of information in a way it suits managerial needs. Management accounting is a service function and it provides necessary information to different levels of management.

4. Taking Important Decisions: Management accounting helps in taking various important decisions. It supplies necessary information to the management on the basis of which decisions are taken. The historical data is studied to see its possible impacts on future decisions. The implications of various alternative decisions are also taken into account while taking important decisions.

5. Increase in Efficiency: The purpose of using accounting information is to increase efficiency of the concern. The efficiency can be achieved by setting up goals for each department. The performance appraisal will enable the management to pin point efficient and inefficient spots. An effort is made to take corrective measures so that efficiency is improved,

6. No Specific Rules Followed: In financial accounting, certain rules are followed for preparing different accounting books. On the other hand, no specific rules are followed in management accounting. Though the tools of management accounting are the same but their use differs from concern to concern. The analysis of data depends upon the person using it. The deriving of conclusions also depends upon the intelligence of the management accountant. Every concern has its own rules and by rules for analysing the data,

7. No get Formats for Information: Management accounting does not provide information in a prescribed proforma like that of financial accounting. It provides the information to the management in the form which may be more useful to the management in taking various decisions on the various aspects of the business.

8. Analysis of Different Variables: Management accounting helps in analysing the reasons as to why the profit or loss is more or less as compared to the past period. Moreover, it tries to analyse the effect of different variables on the Profits and Profitability of the concern.

9. Provides Data and not the Decisions: The management accountant is not taking any decision but provides data which is helpful to the management in decision-making. It can inform but cannot prescribe. It is just like a map which guides the traveller when he will be if he travels in one direction or another. Decisions depend on the efficiency and wisdom of the management.

10. Use of Special Techniques and Concepts: Management accounting uses special techniques and concepts to make accounting data more useful. The techniques usually used include financial planning and analysis, standard costing, budgetary control, marginal casting, project appraisal, control accounting etc. The type of technique to be used will be determined according to the situation and necessity.

11. Achieving Objectives: In management accounting, the accounting information is used in such a way that it helps in achieving organisational objectives. Historical data is used for formulating plans and, setting up objectives. The recording of actual performance and comparing it with targeted figures will give an idea to the management about the performance of various departments. In case there are deviations between the standards got and actual performance of various departments corrective measures can be taken at once. All this is possible with the help of budgetary control and standard costing.

SCOPE OF MANAGEMENT ACCOUNTING

The scope of Management Accounting is very wide and broad based. It includes all information, which is provided to the management for financial analysis and interpretation of the business operations. The following field of activities are included in the scope of this subject:

1. Financial Accounting: Financial accounting though provides historical information but is very useful for future planning and financial forecasting. It is an essential perquisite of any discussion of management accounting. Financial statements contain enough information that is used by management for decision-making. Management accounting contains only tools and techniques and it gets the data for interpretation and analysis mainly from financial accounting. Thus, without efficient financial accounting system, management accounting cannot be operative.

2. Cost Accounting: Cost accounting provides various techniques for determining cost of manufacturing products or cost of providing service. It uses financial data for finding out cost of various jobs, products or processes. Business executives depend heavily on accounting information in general and on cost information in particular because any activity of an organisation can be described by its cost. They make use of various cost data in managing organisations effectively. Cost accounting is considered as the backbone of management accounting as. it provides the analytical tools such as Budgetary Control, Standard Costing, Marginal Costing, Inventory Control, Operating Costing, etc., which are used by management to discharge its responsibilities effectively.

3. Financial Management: Financial management is concerned with the planning and controlling of the financial resources of the firm. It deals with the raising funds and their effective utilisation. Its main aim is to use the fund in such a way that the earning of the firm is maximised. Today finance has become the life blood of any business concern. Although, financial management has emerged as a separate subject, management accounting includes and extends to the operation of financial management also.

4. Financial Statement Analysis: The various parties (users) concerned with the financial statements may need information, which can be obtained by financial statement analysis and developing certain trends and ratios. A person can gain meaningful insights' and conclusions about the firm with the help of analysis and interpretation of the information contained in financial statements. Different techniques have been developed which can be used for the proper interpretation and analysis of financial statements.

5. Interpretation of Data: The work of interpretation of financial data is done by the management accountant. He interprets various financial statements to the management. This interpretation of data gives an idea about the financial and earning position of the concern. These statements may be studied in comparison to statements of earlier periods or in comparison with the statements of similar other concerns. The significance of these reports is explained to the management in a simple language. If the statements are not properly interpreted then wrong conclusions may be drawn. So, interpretation is as important as compiling of financial statements.

6. Management Reporting: Clear informative, timely reports are essential management tools in reaching decisions that make the best use of firm's resources. Thus, one of the basic responsibility of management accounting is to keep the management well informed about the operations of the business. The reports are presented in the form of graphs, diagrams, index numbers or other statistical techniques so as to make them easily understandable. The management, accountant sends interim reports to the management and these reports may be monthly, quarterly, half yearly. These reports may cover Profit and Loss statement, fund flowstatement, cash flow statement, stock reports and reports on orders in hand, etc. These reportsare helpful in giving a constant review of the working of the business,

7. Quantitative Techniques: Modern managers believe that the financial and economic data available for managerial decisions can be more useful when analyzed with more sophisticated analysis and evaluation techniques. The techniques such as time series, regression analysis and sampling techniques are commonly used for this purpose. Further, managers also use techniques such as linear programming, game theory, queuing theory etc., in their decision-making process.

8. Budgeting and Forecasting: Budgeting means expressing the plans, policies and goals of the enterprise for a definite period in future. Budgetary control, controls the activities of the business through the operation of budget by comparing the actual with the budgeted figures, finding out the deviations, analysing the deviations in order to pinpoint the responsibility and take remedial action so that adverse things may not happen in future. Forecasting, on the other hand, is a prediction of what will happen as a result of a given set of circumstances. Forecasting is a judgement whereas budgeting is an organisational object. Both budgeting and forecasting are useful for management accountant in planning various activities.

9. Inflation Accounting: Inflation accounting attempts to identify certain characteristics of accounting that tend to distort the reporting of financial results during the period of rapidly changing prices. It devises and implements appropriate methods to analyse and interpret the impact of inflation on the financial information.

10. Inventory Control: Inventory control is used to devote stock of raw materials, work-in-progress and finished products. Inventory has a special significance in accounting for determining correct income for a given period. The management should determine different levels of stocks, i.e., minimum stock level, maximum stock level, reordering level, danger level, etc. for inventory control. The control of inventory will help in controlling costs of products. Management will need effective inventory control for controlling stocks. Management accountant will guide management as to when and from where to purchase and how much to purchase. Thus, the study of inventory control will be helpful for taking managerial decisions.

11. Tax Accounting: In the present complex tax system, tax planning is an important part of Management Accounting. Taxation plays an important role in the profitability of a commercial concern. Therefore, it is essential for a management accountant to have a complete knowledge of business taxation. The Business Profit and tax thereon is to be ascertained as per the provision of taxation. The filing of tax returns and the payment of tax in due time is exclusively the responsibility of management accountant.

12. Cost Control Procedure: These procedures are integral part of the management accounting process and includes inventory control, cost control, labour control, budgetary control and variance analysis, etc.

13. Methods and Procedures: It includes in this study all those methods and procedures which help the concern to use its resources in the most efficient and economical manner. It undertakes special cost studies and estimations, reports on cost volume profit relationship under changing circumstances.

14. Internal Audit: The internal audit is a discipline of management accounting. It makes arrangements for performance appraisal of the firm’s various departments. Thus, a management accountant must possess knowledge about the fixation of responsibilities and measurement of results.

15. Office Services: To discharge the responsibilities efficiently a management accountant has to deal with data processing, filing, copying and duplicating. His area of responsibilities also includes the evaluation and reporting about the utility of different office procedures and machines.

1.3 DIFFERENCE BETWEEN FINANCIAL ACCOUNTING AND MANAGEMENT ACCOUNTING AND COST ACCOUNTING AND MANAGEMENT ACCOUNTING

Financial accounting and management accounting both are the two branches of the accounting information system of business enterprise. Financial accounting is concerned with the recording of day-to-day transactions of the business. These transactions are classified according to their nature. These transactions enable the concern to find out Profit and Loss for a particular period and financial position of the concern is also judged on a particular date through Balance Sheet. On the other hand, management accounting uses financial account. The accounts are used in such a way that they are helpful to the management in planning and forecasting various policies. Thus, financial accounting has a significant influence on management accounting. Further the principles of financial accounting are equally useful in management accounting. Both financial and management accounting are complementary and are necessary in running the concern effectively.

Despite the close relationship, there are certain points of distinction between financial accounting and management accounting. The main points of distinction are discussed below:

1. Objects: The main object of financial accounting is to measure business income and communication of information to the various categories of persons, such as, management, creditors, suppliers of goods, bankers, investors, etc. whereas, the main objectives of management accounting is to help the internal management in formulating policies and plans.

2. Nature: Financial accounting is objective in nature. It lays emphasis on the past activities and represents historical records just to show the results of the business. On the other hand, management accounting is subjective in nature. It stresses the future and uses historical costs and data for estimating the future. Thus, management accounting has prospective character.

3. Compulsion: The Indian Companies Act, 1956 has made financial accounting obligatory for joint stock companies to maintain a system of financial accounting. At the same time, the benefits as offered by a financial accounting system have made it more or less compulsory for the non-company organisation. On the other hand, the setting up of management accounting system is at the discretion of the management.

4. Subject Matter: Financial accounting considers the business as one entity and accordingly financial accounting reports have been confined to the business operations as a whole. Such statements present the position and the performance of the entire business. On the other hand, under management accounting system each unit/department is treated as a separate entity in order to ensure effective planning and control, Therefore, profitability and performance reports are prepared for each unit or division of the business separately.

5. Accounting Principles: Financial accounting system is based on some accounting principles and conventions which a financial accountant has to strictly follow, while preparing financial accounts and statements. On the other hand, management accounting is not bound by generally accepted accounting principles and conventions. The preparation of reports and statements under management accounting are governed by the requirements of the management. Management can frame its own ground rules and principles regarding form and content of information required for internal use.

6. Precision: Financial accounting pays more emphasis on precision and considers only actual figures in the preparation of its statements. There is no scope for approximate figures in financial accounting. On the other hand, the reports and statements prepared under management accounting system contain more approximate figures than the actual figures. Thus, management accounting is less precise as compared to financial accounting.

7. Frequency of Reports: The financial statements are prepared at the end of financial period which is usually a period of twelve months. But the management accounting reports and statements are prepared at a regular intervals so that management may not face any difficulty in decision-making. Management is constantly informed about the business performance through these reports and statements. Thus, the reporting frequency of management accounting is much higher as compared to the reporting of financial accounting.

8. Nature of Data Used: The financial statements as prepared under financial accounting contain only such transactions that are expressed in monetary terms. The non-monetary events such as nature of competition, business reputation, change in fashion, are not at all considered by financial accounting. But management accounting uses both monetary and non-monetary data.

9. Recipients: Financial statements such a Profit and Loss account and balance sheet, are extensively used by outsiders, i.e., shareholders creditors, tax authorities etc. on the other hand, management accounting reports and statements are exclusively meant for management. Such reports are not easily available for outsiders.

10. Methodology: Financial accounting records the transactions relating to income, revenue, personal accounts and property accounts, etc. whereas management accounting reports, cost and revenue by profit centre or responsibility centre.

11. Reporting: Financial accounts are prepared to find out profitability and financial position of the concern. These reports are useful for outsiders like bankers investors, shareholders, Government agencies, etc. These reports are prepared not only for the benefit of the concern but also for outsiders. On the other hand, management reports are meant for internal use only. These are prepared for the benefit of different levels of management. Financial report such as profit and loss account is prepared for a specific period and not on a particular date. On the other hand, there is no such binding for preparing management accounting reports. The main idea for preparing these reports is to enable the management to have a view about the position of the concern and no consideration is given to the period. Management accounting reports are rather future projections of figures.

12. Period: Financial accounts are prepared for a particular period. Profit and Loss account is generally prepared for one year. All the items relating to that year are taken to Profit and Loss Account. Balance Sheet is prepared on a particular date. It reveals the financial position of the concern on that date, Management accountant supplies information from time to time during the whole year. There is no specific period for which management accounts are prepared.

13. Audit: Financial accounts can be got audited, Under Companies Act, 1956 auditing of financial accounts is compulsory. On the other hand, management accounts cannot be audited. They are not based on actual figures and projected data are also used in management accounting. So it is not possible to get management accounts audited.

14. Publication: The financial accounting statements are almost published by every business concern for the information of the general public. The Indian Companies Act has made it compulsory for every company to publish its final account, i.e., Profit and Loss Account and Balance Sheet. On the other hand, management accounting reports and statements are not published.

From the above discussion we can conclude that financial and management accounting are necessary for a concern. While financial accounting lays more emphasis on the past but is very essential for future forecasting of the events. Management accounting though deals with the future events but has to take into consideration the past events also. For becoming a successful management accountant, knowledge of financial accounting is very essential,

DISTINCTION BETWEEN COST ACCOUNTING AND MANAGEMENT ACCOUNTING

Cost accounting and management accounting both have the same objectives of helping the management in planning, control and decision-making. Both are internal to the organisation and use common tools and techniques like standard costing variable costing, budgetary control etc. Inspite of these similarities there are certain differences between these two,

The main distinctions between these are discussed as follows:

1. Object: The object of cost accounting is to record the cost of producing a product or providing a service. The cost is recorded product-wise or unit-wise. Besides recording, it deals with cost control, matching of costs with revenue and decision-making. On the other hand, the object of management accounting is to provide information to the management for planning and co-ordinating the activities of the business.

2. Scope: The scope of cost accounting is narrow as compared to management accounting. It deals primarily with cost ascertainment. On the other hand, the scope of management accounting is very wide. It includes financial accounting, cost accounting, budgeting, tax planning, reporting to management and interpretation, of financial data.

3. Nature: Management accounting is generally concerned with the projection of figures for future. The policies and plans are prepared for providing future guidelines. On the other hand, cost accounting uses, both past and present figure.

4. Nature of data used: In cost accounting only those transactions are recorded which can be expressed in figures. In other words, only quantitative aspect is recorded in cost accounting. On the other hand, Management accounting uses quantitative and qualitative data both.

5. Deals with: Cost accounting deals with ascertainment, allocation, apportionment and accounting aspect of cost. On the other hand, Management accounting deals with the effect and impact of cost on the business.

6. Base: Cost accounting provides a base for the management accounting. On the other hand, Management accounting is derived from both cost accounting and financial accounting.

7. Status: The status of cost accountant comes after the management accountant. On the other hand, management accountant is senior in position to cost accountant.

8. Tools and Techniques: Cost accounting has standard costing, variable costing break-even analysis etc. as the basic tools and techniques. On the other hand, alongwith these, the management accounting has funds and cash-flow statements, ratio analysis etc. as accounting tools and techniques,

9. Period of Planning: Cost accounting is concerned with short-term planning. On the other hand, management accounting is concerned with both short-term and long term planning and uses techniques like sensitivity analysis, probability structure etc. Its special field is evaluation of capital investment projects.

10. Assistance: Cost accounting merely assists the management with functioning. On the other hand, management accounting assists and evaluates the management performance.

11. Principle Followed: Certain principles and procedures are followed for recording costs of different products. The same rules are applicable at different time too. On the other hand, no specific rules and procedures are followed in reporting management accounting. The information is prepared and presented as is required by the management.

12. Installation: Cost accounting can be installed without management accounting. On the other hand, in management accounting, financial and cost accounting are taken as the base for its installation.

13. Development: The development of cost accounting is related to industrial revolution. Financial accounting could not satisfy information needs of management. Cost accounting was thus evolved as a supplementary accounting method. On the other hand, management accounting has developed in the last fifty years. Thus, management accounting and cost accounting are both complementary subjects.

1.4 OBJECTIVES, TECHNIQUES, FUNCTIONS, IMPORTANCE AND LIMITATIONS OF MANAGEMENT ACCOUNTING

The main objectives of the management is to manage the business in a systematic way following a plan, allocating responsibilities to implement the plan, organising methods to execute the plan and also obtain efficiency. To achieve this, the management accountant is required to present the information to the management in such a form so that it may be helpful in formulating policies, making1ci5i0n5, planning activities and controlling business operations. The main objectives of management accounting are discussed below:

1. Helpful in planning and Formulation of Policies: Management accounting assists management in planning the activities of the business. Planning is deciding in advance what is to be done, when is to be done, how is to be done and by whom it is to be done. It involves forecasting 011 the basis of available information, setting goals, framing policies, determining the alternative courses of action and deciding on the programme of activities to be undertaken.

Thus, planning is making intelligent forecasting. This forecasting is based on facts. Facts are provided by past accounts on which forecast of future transactions is made, Management accounting helps management in its function of planning through the process of budgetary control.

2. Helpful in Organising: Organisation is related to the establishment of relationship among different individuals in the concern. It also includes the delegation of authority and fixing the responsibility. Management accounting is concerned with establishment of cost centres, preparation of budgets, preparation of cost control accounts and fixing the responsibility for different functions. This all needs the intensive study of the organisational structure. In turn, it helps to rationalise the organisational structure or efficient organisational frame work.

3. Helpful in Interpreting Financial Information: Accounting is a technical subject and may not be easily understandable by everyone till the user has a good knowledge of the subject. Management may not be able to use the accounting information in its raw form due to lack of knowledge of accounting techniques. Management accountant presents the information in an intelligible and non-technical manner. This will help the management in interpreting the financial data, evaluating alternative courses of action available and guiding the management in taking decisions. If necessary, management accountant uses statistical devices like charts, diagrams, index numbers, etc. so that the information is easily followed.

4. Motivating Employees: Management accounting helps the management in selecting the best alternatives of doing the things. Targets are determined for the employees. They feel motivated in achieving their targets and further, incentives may be given for improving their performance.

5. Helpful in Co-ordination: Management accounting helps the management in co-ordinating the activities of the concern. It provides tools which are helpful in co-ordinating the activities of different departments. The work of co-ordination is done through functional budgeting. Management accountant acts as a co-ordinator and reconciles the activities of different departments. Thus, management accounting is a useful tool in co-ordinating the various operations of the business.

6. Helpful in Controlling Performance: Management accounting devices like standard costing and budgetary control are helpful in controlling performance. For this, work is divided into different units and separate goals are set up for each unit and the responsibility of a particular person is determined. The actual results are compared with pre-determined objectives. The management finds out the deviations and takes necessary corrective measures. Different departmental heads are associated with preparing budgets and setting up goals. The management accountant acts as a co-ordinating link between different departments and he also monitors their performance to the top management. Thus, the management is also to control performance of each and every individual with the help of management accounting devices.

7. Helps in decision-making: The management of any concern has to take certain important decisions. Whenever there is a question of starting a new business, expanding or diversifying the existing business, strategic business problems has to be faced and solved. Similarly when in a particular situation, there are different alternatives as whether labour should be replaced by machinery or not, whether selling price should be reduced or not, whether to export the item or not etc., the management accountant helps in solving such problems and decision-making. For such decisions, the management accountant may take the help of marginal costing, cost volume profit analysis, standard costing, capital budgeting etc. Management accounting provides feed back to the management such as, what business to engage in or diversify, how to run that business efficiently. This is the most important contribution which the management accountant has made.

8. Communicating-up-to-date Information: One of the primary objectives of management accounting is to keep the management fully informed about the latest position of the concern. Management needs information for taking decisions and for evaluating performance of the business. The required information can be made available to the management by means of reports which are an integral part of the management accounting. Reports are means of communication of facts which should be brought to the notice of various levels of management so that they may be guided for taking suitable action for the purpose of control.

9. Helpful in Evaluating the Efficiency and Effectiveness of Policies: Management accounting also lays emphasis on management audit which means evaluating the efficiency and effectiveness of management policies. Management policies are reviewed from time to time to make an improvement in them so that maximum efficiency may be achieved.

10. Helpful in Tax Administration: The complexities of tax system are increasing day-after-day. Management accounting helps in assessing various tax liabilities and depositing correct amount of taxes with the concerned authorities. Various tax returns are to be filed under different tax laws. Tax administration is carried, on with the advice and guidance of the management accountant.

TECHNIQUES OF MANAGEMENT ACCOUNTING

Management accounting is an information system designed to communicate meaningful economic and financial information to the managers so that they may discharge their functions efficiently. The management accounting system consists of a number of tools and techniques which are frequently used by the management accountant to meet the increasing needs of the business. The main techniques and methods of management accounting are discussed below:

1. Financial Planning: Planning is necessary not only for efficient utilization of resources but also for better and progressive business results. Financial planning is the process of deciding in advance financial objectives, policies and procedures. An organisation can achieve long-term as well as short-term financial objectives by employing financial planning. In the short-term, it can help a concern in meeting its obligations by balancing the flow of funds. At the same time, its proper application can ensure efficient utilization of available financial resources in the long period.

2. Analysis of Financial Statement: The analysis of financial statement is meant to classify and present the data in such a way' that it becomes useful for the management. The meaning and significance of the data is explained in non-technical language. The techniques of financial analysis include comparative financial statements, trend analysis, ratio analysis, fund flow statements, etc.

3. Historical Cost Accounting: The historical cost accounting provides past data to the management relating to cost of each job, process and department so that comparison may be helpful to the management for cost control and future planning.

4. Marginal Costing: This is a method of costing which is concerned with changes in costs due to changes in the volume of production. Under this system, cost of product is divided into variable and fixed costs. Marginal costing is helpful for measurement of profitability of different lines of production, different departments and divisions of an enterprise. The decision about short-term utilisation of capacity is also assessed with the help of marginal costing.

5. Budgetary Control: It is a system of costing which uses budgets as a tool for planning and control. The budgets of all functional departments are prepared in advance. The budgets are based on historical data and future possibilities. Under this system, the actual performance is recorded and compared with the pre-determined targets. With the help of budgetary control, the management is able to assess the performance of each and every in the organisation. Thus, budgetary control is an important technique of directing business operations to achieve a satisfactory return on investment.

6. Standard Costing: Standard costing is an important technique for cost control purposes. Under this t0chnique, costs are determined in advance. The actual costs are recorded and compared with the standard costs. The variance, if any are analysed and their reasons are ascertained. It helps to increase the efficiency of the concern and also 'management by exception'.

7. Decision Accounting: Taking-decision is the important work of management. Decision-taking involves a device from various alternatives. There may decisions about capital expenditure, whether to make or buy, what price to be charged, expansion or diversification etc. The management accounting helps the management through the techniques of marginal costing, capital budgeting, differential costing to select the best alternative which will maximise the profits of the business.

8. Funds Flow Statement: The management accountant uses the technique of funds flow statement in order to analyse the changes in the financial condition of the concern between two periods. It explains, wherefrom the funds are coming in the business and how these are used in the business. It helps a lot in financial analysis and control, future guidance and comparative studies.

9. Revaluation Accounting: Revaluation accounting is also known as Replacement Accounting. The management accountant assures the maintenance and preservation of the capital through this technique. It brings into account the impact of changes in the prices on the preparation of the financial statements, According to J. Batty "Revaluation accounting is used to denote the methods employed for overcoming the problems connected with fixed asset replacement in a period of rising prices."

10. Communicating: The success or failure of the management is dependent on the fact, whether requisite information is provided to the management in right form at the right time so as to enable them to carry out the functions of planning, controlling and decision-making effectively. The management accountant will prepare the necessary reports for providing information to the different levels of management by proper selection of data to be presented, organisation of data or selecting the appropriate method of reporting.

11. Control Accounting: Control accounting is not a separate accounting system. Different systems have their control devices and these are used in control accounting. Standard costing and Budgetary control can be exercised through variance analysis reports. In control accounting we can use internal check, internal audit, statutory audit for control purposes.

12. Statistical and Graphical Techniques: The management accountant uses various statistical and graphical techniques in order to make the information more meaningful and presentation of the same in such form so that it may help the management in decision-making. The techniques used are master chart, chart of sales and earnings, investment chart, linear programming, statistical quality control, etc.

13. Management information System: With the development of electronic devices for recording and classifying data, reporting to management has considerably improved. The data planning coordination and control is supplied to the management. Feedback of information and responsive actions can be used as control techniques.

FUNCTIONS OF MANAGEMENT ACCOUNTING

Management accounting is a, special part of accounting. It has developed out of the need for making more and more use of accounting for taking managerial decisions. Management accounting is assigned the functions of classifying, presenting and interpreting data in such a way that it helps management in controlling and running the business in an efficient and economical manner. The major functions of management accounting are summarized below:

1. Planning and Forecasting: Planning is an activity of the management that requires an efficient system of decision-making. In any type of enterprise, plan should be made to guide future operations of the business. Thus, one of the major functions of the management accountant is to help management in the selection of company's goals and in the formation of policies and strategies to allocate resources to achieve these goals. Different accounting techniques are used by the management to discharge the function of planning efficiently. The important among them are financial statements analysis, budgeting, direct costing, capital budgeting, standard costing, marginal costing, trend ratios, funds flow statement, probabilities, etc. These techniques are useful in planning various activities.

2. Modification of Data: Management accounting helps in modifying accounting data. The information available is modified in such a way that it becomes useful for the management. If sales data is required, it can be classified according to product, area, season-wise, type of customers and time taken for getting payments, etc. Similarly, if production figures are required, these can be classified according to product, quality or time taken by the manufacturing processes rate of production, etc. The modification of data makes the data more understandable and useful. Management accountant classifies the data according to the need of the management.

3. Financial Analysis and Interpretation: Management accountant performs the work of presenting financial data in a simplified way. Financial data is generally collected in a technical way. But, top managerial personnel may lack technical knowledge. So management accountant analyses and interprets financial data in a simple way and presents it in a non-technical form. Further, he gives his opinion about various alternative courses of action so that it becomes easy for the management to take a correct decision.

4. Co-ordination: The co-ordination among different departments or units is essential for smooth functioning of the concern. The management accountant acts as the co-ordinator in this regard. The techniques such as budgeting, financial reporting and analysis and interpretation are commonly used by management accountants to co-ordinate efficiently the various activities of the business. The efficient co-ordination increases the efficiency of organisation which in turn increases the profitability of a concern.

5. Communication: The management accountant prepares various reports to communicate the results to the different levels of management, to motivate the employees, to exercise effective control on their activities and to enable the management to take sound decisions. He also communicates with the outside world account the progress of the business through published accounts.

6. Helpful in taking Strategic Decisions: Management accounting helps in taking strategic decisions. It supplies analytical information regarding various alternatives and the choice of management is made easy. These decisions may be regarding seasonal or temporary stoppage of production, replacement decisions, expansion and diversification of works, etc. with the help of management accounting, correct decisions are taken in this regard.

7. Special Studies: Modern business is operating under such dynamic conditions where even a minor change in business can have a significant impact on the business results. Therefore, management is always interested to know the area of business which can contribute to the stability and profitability of the concern. To meet this objective, management accountant undertakes various special studies such as sales analysis, economic forecasts, price spread analysis, etc.

8. Information to Various Levels of Management: Every management level needs accounting information for decision-making and policy execution. Top management takes broader decisions and leave day-to-day decisions for the lower levels of management. Management accountant feeds information to different levels of management so that further decisions are taken. The supply of adequate information at the proper time will increase efficiency of the management.

9. Helps in Managerial Control: Management accounting is very useful in controlling performance. For this, the standards of various departments and individuals are set-up. The actual performance is recorded and deviations are ascertained. It enables the management to assess the performance of everyone in the organisation and corrective measures are taken, if necessary. Performance evaluation is possible through standard costing and budgetary control which are an integral part of management accounting.

10. Qualitative Information: Management accounting is not restricted to the use of monetary data only rather it is concerned also with the use of qualitative information. While preparing a production budget, management accountant may not only use the past production figures, but he may rely on the assessment of persons dealing with production, productivity reports, consumer surveys and may other business documents. The use of qualitative information is as useful as monetary information,

1.10 IMPORTANCE OF MANAGEMENT ACCOUNTING

In the present complex industrial world, management accounting has become an integral part of management. Management accountant guides and advices the management at every step. Management accounting not only increases efficiency of the management but it also increases the efficiency of the employees. The main advantages of management accounting are discussed below:

1. Determination of Aim: Management accounting on the basis of the information available determines its goal and tries to find out the route through which it can reach the goal.

2. Helpful in the Preparation of Plan: Present age is the age of planning. That producer is considered as most successful producer who produces articles according to the plan and needs of the consumers. Before taking any plan the manager must study and analyse the present and future of the business.

3. Easy to take Judgement: Before taking any plan or to determine policy, there are several plans or policies before the management and on the basis of their study he decides which plan or policy to be adopted so that it may be more useful and helpful.

4. It increases efficiency of the business: Management accounting increases efficiency of the business concern. The targets of different departments of the enterprise are determined in advance and the achievement of these goals is taken as a tool for measuring their efficiency.

5. It Provides Effective Management Control: The tools and techniques of management accounting are helpful to the management in planning, controlling and co-ordinating activities of the business. The getting of standard anti assessing actual performance regularly enables the management to have 'management by exception'. Everybody assesses his own work and immediate actions are taken in case of deviation in performance.

6. Better Service to Customers: The cost control devices used in management accounting enables the reduction in prices. All employees in the concern are made cost conscious. The quality of products becomes good because quality standards are pre-determined. The customers are supplied goods of good quality at reasonable prices.

7. Measurements of Performance: The technique of budgetary control and standard costing enables the measurement of performance. In standard costing, standards are determined first and then actual cost is compared with standard cost. It enables the management to find out deviations between standard cost and actual cost. The performance will be good if actual cost does not exceed the standard cost. Budgetary control system too helps in measuring efficiency of all employee.

8. Maximum Profits can be Obtained: In this process, every possible efforts are made to control unnecessary expenses. The incapability or inefficiency is removed. New systems or techniques are found out to achieve the goal, so that there may be maximum profit out of the capital invested in the business.

9. Safety and Security from Trade Cycle: The information received from the management accounting gives more or throws enough light over the past trade cycles. The management tries to ascertain the causes of trade cycle and its affect. Thus, management accounting tries to safeguard the organisation from the affect of trade cycle.

LIMITATIONS OF MANAGEMENT ACCOUNTING

Despite of the fact that the management accounting is very useful for the business concern, still it has got certain limitations which are discussed below:

1. It is based on Financial Accounting: Whatever information the management accounting gets, they are of the financial accounting. The accuracy of the management decisions is based on the correctness of these information. If financial data is not reliable then management accounting will not provide correct analysis. Its effectiveness is limited to the reliability of those sources.

2. Lack of Knowledge: For taking a sound decision it is necessary that the management must have knowledge of various fields like accounting, statistics, economics, taxation, production, engineering and so on. But it has been observed that the person who is taking the decisions may not have comprehensive knowledge of all such subjects.

3. Lack of Continuity and Co-ordination: In order to make the conclusions drawn by management accountant meaningful, they must be implemented in the organisation at various levels. But in actual practice they lose their significance because it is not feasible to implement such conclusions.

4. Lack of Objectivity: There is every possibility of personal bias and manipulation from the collection of data to the interpretation stage in financial accounting. Thus, it loses objectivity and validity.

5. Costly: The installation of management accounting system in a concern requires large organisation and a wide network of rules and regulations and thus requires a heavy investment. Therefore, it cannot be utilized by the small organisations.

6. Evolutionary Stage: The management accounting is in a recent origin and still in an evolutionary stage. New theories and new techniques are being introduced every now and then. Thus, it is essential to keep a continuous track for the latest theories and their application.

7. Effect of Time Element: The information received in management accounting are all past and by the time the information and statistics are introduced, the situations are all changed and this condition puts the organisations in difficulties.

8. It cannot be treated as an alternative to Management: It must be remembered. that by seeing its activities it can be said that management accounting cannot be treated as an alternative to management. By providing a system for relevant data reporting, management accounting assists the management in taking proper decisions rather than making available to it readymade decisions.

9. Difficulty of Psychological Resistance: There is the difficulty of psychological resistance by the staff. Introduction of a new system needs a corresponding change in the style and attitudes of personnel. It calls for a rearrangement of personnel as well as their activities. But this is a time consuming process and during initial stage, staff difference certainly possesses a problem.

10. Wider Scope: The scope of management accounting has become so wide that the task to be performed becomes too difficult and complex. Sometimes the objectives laid down are so ambitious that they seem unattainable.

11. Unquantifiable Variable: There are various problems in business which cannot be expressed in monetary terms. Such problems cannot be interpreted for the future.

1.5 CHECK YOUR PROGRESS

A. State whether the following statements are True or False:

1. Management accounting provides all possible information required for managerial purposes.
2. Management accounting is a technique of selective nature.
3. Management accounting provides information in a prescribed proforma
4. The scope of Management Accounting is very limited.
5. The work of interpretation of financial data is done by the management accountant.

B. Fill in the blanks:

1. Financial accounting is concerned with the ______ of day-to-day transactions of the business.
2. The scope of cost accounting is _______as compared to management accounting.
3. Management accounting deals with the ______and impact of cost on the business.
4. Management accounting helps the management in selecting the best _______ of doing the things.
5. The budgets are based on historical _____and future possibilities.

1.6 SUMMARY

Accounting is a service function which provides financial information to the interested parties inside and outside the organisation for their effective decision making. Hence, the primary role of accounting information is to provide useful and reliable information for decision-making purposes. Financial accounting involves recording, classifying and summarizing the business events and transactions occurred during the particular period of time to the users in order to help them for making sound economic decisions about the performance and financial position. Cost accounting helps one to discover the cost of goods produced goods or services rendered by the business. Management Accounting deals with the processing of financial and cost accounting data for managerial decision making. Management accounting is the accounting system for making decisions of the business enterprise.

1.7 KEYWORDS

Financial Accounting: Financial accounting is a traditional method of accounting that supplies historical information about the firm during the past.

Cost Accounting: This helps management to conduct performance appraisal and also facilitates in formulating price policies.

Management Accounting: Management accounting provides necessary information to assist the management in the creation of policy and in the day-to-day operations.

Budgeting: It means expressing the plans, policies and goals of the enterprise for a definite period in future.

1.8 SELF ASSESSMENT TEST

1. What do you mean by Management Accounting? Explain its scope and objectives.
2. Define Management Accounting. Discuss its nature and scope?
3. What is Management Accounting? Discuss its needs and importance in modern age.
4. Explain in brief the functions of Management Accounting?
5. Define Management Accounting. How does Management Accounting differ from Financial Accounting? Explain the limitations of Management Accounting.
6. Define Management Accounting. How does Management Accounting differ from Cost Accounting?
7. Define Management Accounting. Discuss the importance of Management Accounting for the Management in taking various decisions.

1.9 ANSWERS TO CHECK YOUR PROGRESS

A. 1. True

2. True

3. False

4. False

5. True

B. 1. Recording

2. narrow

3. effect

4. alternatives

5. data

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Subject: Management Accounting	
Course code: BCOM 501	**Author: Prof. M. C. Garg**
Lesson no. :02	

BUDGETARY CONTROL

Structure

2.0 LEARNING OBJECTIVES

After going through the lesson, you will

- Explain the meaning and characteristics of a budget.
- Enlist the objectives, advantages and disadvantages of budgeting.
- Describe the process of budgeting.

2.1 INTRODUCTION

Budget is a precise statement of financial and quantitative implications of the course of actions that management has decided to follow in the immediate nest period. Budget is the basis for the management to observe that how the organization is functioning i.e. whether the targets set by management have been achieved or not. It is employed, no doubt, in large organizations, but even small businesses are using it in some informal manner. Probably, the greatest aid to good management that has ever been devised is the use of budgets and budgetary control. It is versatile tool and has helped managers cope with many problems.

2.2 MEANING AND CHARACTERISTICS OF BUDGET

A budget is a quantitative expression of a plan of action prepared in advance ofthe period to which it relates. It may be prepared for the entire organisation or for variousdepartments or for various functions involved in that organisation. Budget is a means of translating the overall objectives of the business into detailed feasible plan of action.

The concept of ‘budget’ is being made use of by every individual who undertakes a work involving expenditure. For examples, a person who wants to go on a holiday tour will prepare a budget involving expenditure on fares, boarding, lodging, purchasing, etc. After returning he will compare the actual expenses incurred with budgeted expenses to know whether he spent more or less as compared to budgets and if so what factors were responsible for it. This enables him to increase or decrease his budget for the next year.

In the same way, every business undertakes to budget its expenditure for utilising the available funds more judiciously. Similarly, to ensure proper utilisation of scare raw materials and other factors of production, the management of every business will prepare a budget relating to material, labour, production and various expenditure. This enables in proper planning of all activities, their co-ordination and finally controlling such activities. In this process it enables the management to know the performance of business for a given period of time.

Budget is a type of plan. It is a plan expressed in monetary terms relating to a specific period of time. A budget is effectively used for control purposes. The term ‘budget’ has been defined as follows:

1. The Chartered Institute of Management Accountants (I.C.M.A.), London, has defined a budget as, “a plan quantified in monetary terms prepared and approved prior to a defined period of time, usually showing planned income to be generated and or expenditure to be incurred during the period and the capital to be employed to attain given objective.”

2. According to Brown and Howard, “A budget is a pro-determined statement of management policy during a given period which provides a standard for comparison with results actually achieved.”

On the basis of above definitions it can be said that a budget is a comprehensive and co-ordinated plan, generally expressed in financial terms, for the operations and resources of an enterprise for some specific period in future budgets may be prepared for the organisation as a whole, or separate budgets may be prepared for different departments, or business functions, or for different set of financial and non-financial resources. Once a budget has beenapproved and accepted it works as a bench mark for measurement of performance.

Budgets are plans, converted in figures, financial or physical, for a pre–determined budget period. They may he either for short period or for long period or both intertwined. Budgets may relate to income, expenses and employment of capital i.e. plan for all flows of financial resources into, within and from an entity, aimed at serving the segment objectives in harmony with the organisational objectives through performing the functions of planning, co-ordination, communication, serving a reference point, motivation and control.

Budgets help addressing the questions, such as, where to go? How to go? When to reach? What has been achieved? Who has achieved it? What has gone wrong and where? What correction is required? What is the plan for correction? Does it require a fresh budget?

CHARACTERISTICS OF BUDGET

(1) A budget is prepared for a definite future period.

(2) Budgets are prepared in advance.

(3) A budget is prepared in monetary terms, though they make expressed in non-financial quantities also.

(4) Budgets are statements of plans expressed in members.

(5) Budget is primarily a planning and control device.

(6) It shows planned income and expenditure and also the capital to be employed.

(7) Purpose of a budget is to implement the policies formulated by management for attaining the given objectives.

(8) Budgets serve the purpose of planning, coordination, communication, control and motivation.

(9) Budgets require revision with changes in business objectives, policies and ground realities.

(10) Budgets may relate to an entire organisation or for various segments of the organisation.

(11) Budgets relate to inflow and outflow of financial and non-financial resources.

2.3 MEANING, OBJECTIVES, ADVANTAGES, DISADVANTAGES, ESSENTIALS, PRELIMINARIES AND PROCESS OF BUDGETING

2.3.1 Meaning of budgeting

The act of preparing budgets is called budgeting. In the words of J. Batty, "The entire process of preparing the budgets is known as budgeting".

2.3.2 Difference between Forecast and Budget

Both budgets and forecasts relate to future events relating to pre-specified period. Still there are points of difference between the two. They are:

1. Budgets relate to planned events. They refer to policies and programmes to be perused by the organisation. On the other hand, forecasts relate to anticipated events i.e., events expected to happen under anticipated conditions during the specified period.

2. Forecasting is pre-requisite for budgeting but budgeting is not a pre-requisite for

forecasting.

3. Budgets need to be executed, but there is no question of execution of forecasts.

4. Budgets are generally for an accounting period, though there may be budgets for a much shorter Period; e.g. weekly, monthly, or quarterly budgets. On the other hand, forecasts are generally for a much longer period. Forecasts may relate to a year, five year or even twenty years.

5. Various budgets for purchases, sales, production, personnel or finance etc. are integrated for effectiveness. On the other hand, various forecasts of sales, prices, technological change, etc. may be independent of each other.

6. Budgets are very precise but degree of preciseness in case of forecasts is less than that of budgets.

7. Scope of budgeting is generally more comprehensive. On the other hand, forecasts may relate to even a union test aspect of the business.

8. Budget is a tool of control, but forecasts are simply statements of anticipated events.

9. The process of budgeting starts where forecasts come to an end. On the other hand, the function of forecasting ends with the presentations of forecasts.

10. Budgets relate to economic activities in business, associations, government or elsewhere. On the other hand, forecasts may relate to economic as well as non-economic activities e.g. weather forecast.

2.3.3 Objectives of Budgeting

Budgeting is a forward planning. It serves basically as a tool for management control; it is rather pivot of any effective scheme of control. In the words of G. A. Welsch, “Budgeting is the principal tool of planning and control offered to management by accounting function. A similar view has been expressed by John G. Glover & Coleman L. Maze. In their opinion the prime objective of budgeting is to assist in systematic planning and in controlling the operations of the enterprise. In fact, budgeting is the best source of communication and an important tool in the hands of management. The objectives of budgeting may be summarised as under:

1. To help in Planning: Planning involves the setting up objectives and the creation of proper organisation to achieve those objectives. Such objectives include short-term and long-term plans for the business as a whole and for each department or sub-division.After setting up objectives in terms of plans, it becomes imperative to organise the factors production in such a way that planned results or returns could be achieved. With reference to budgeting, planning means the preparation of budgets in respect of such items as sales, advertisement, production, inventory, materials cost and requirements, labour cost and requirements, expenses, research, capital expenditures, financial plans, etc.

Planning through budgets brings together all segments of the concern in a cooperative way and they are compelled to think seriously about the planning. The views and line of thinking not only about their own departments but actually act and perform in each case taking into account the interest of the business as a whole. This changed attitude brings refinements in the process of planning. There/is no need to emphasize that all levels of management must be involved in the planning function. Planning should not be considered as exclusively the function of top management. In fact, all members from top to bottom would have to contribute to the process of planning. Needless to say, that such planning process is feasible only when budgeting is used as instrument of comprehensive planning.

2. To help in Co-ordination: Budgeting plays an important role in establishing and maintaining co-ordination. In fact, budgeting is basically an exercise in co-ordination. Since individual goal, problem and potentiality of all departments are given due consideration in the preparation of budget and each departmental executive has to actively participate in budget preparations, basic elements of co-ordination are built through the budget preparation. Again co-ordination also depends to a greater extent upon adequate communication system. It is very important that each member of management is having perfect and clear-cut knowledge as, “what is the plan and how, when and by whom it can be implemented.” This part of co-ordination is also accomplished by the budget. Plans converted into the form of budget may be distributed among the members of the management which may function as means of communication. In addition to establish basic elements of co-ordination, budget also provides continuity to co-ordination. In other words, budget may help us to evaluate and examine whether the members of the management are working on a co-operative way or not.

3. To help in Controlling: When we relate control function to budget, we find a system, which is generally termed as ‘Budgetary Control’. In this sense, control signifies such systematic efforts which help the management to know whether actual performance is in line with pre-determined goal, plan and policy or not. Thus, control involves measurement and for this there is need for some sort of yardstick or standard. Such yardstick is provided by the budgeting. Budget facilitates control in many ways. It provides not only yardstick but also helps in the comparison of actual results with budgeted ones. It analyses the variances between the two and locates the factor responsible for such variances. This is done not only at the end of year but throughout the year. Management can have perfect knowledge at any time about the areas where the progress is satisfactory and the areas where some remedial actions are needed. Thus, budgeting has to play on important role in control function of management.

2.3.4 Advantages of Budgeting

The main advantages of budgeting are summarised as under:

1. It creates the feeling of co-operation and understanding between different departments.

2. Budgeting is a process of self examination and self criticism which is essential for the success of any business.
3. It forces all levels of management to participate in the process of setting and fulfilment of targets.
4. Budgeting force the management to take necessary steps for getting satisfactory results.
5. Budgeting creates among the members of management a habit of considering timely and carefully all the related factors before reaching on a division.
6. It involves advance planning which is looked up on with favour by many credit agencies as an indicator of sound management.
7. Budgeting helps in preventing waste, reducing expenses and attaining the desired return on investments.
8. Budgeting forces basic policies to initiatives.
9. It sets responsibilities of employees in relation to each function,
10. Budgeting leads to maximum and most economical utilisation of materials, labour, capital and other resources with a view to ensure maximum return.
11. Budgeting force the management to keep adequate and correct historical data in the business.
12. Budgeting highlights up on the efficiency or shortcomings in the business and helps the management to remove them.
13. Budgeting increases the efficiency of the low level employees by removing from their minds the doubt that they are living in dark with respect to business polices and plans.
14. As goals are set up for being attained and achievements or failures are revealed only with reference to these goals, results can be viewed objectively and with minimum of personal prejudice.
15. Budgeting also aids in obtaining bank credit.

16. Budgeting creates cost consciousness and introduces an attitude of mind in which waste and efficiency cannot thrive.

2.3.5 Disadvantages of Budgeting

The main disadvantages of budgeting are:

1. The Budget Plan is based on Estimates: The success or failure of budget depend a large extent upon the accuracy of basic estimates or forecasts. It should always be remembered that a certain amount ofjudgement is always present in such forecasts. This aspect if budgeting should always be kept in view while interpreting the result thereof.

2. Danger of Rigidity: A budget programme must be dynamic and continuously with the changing business conditions. Budgets will lose much of their usefulness if they acquire rigidity and are not revised with the changing circumstances.

3. Budgeting is only a Tool of Management: Budgeting cannot take place of management but is only a tool of management. "The budget should be regarded not as a master, but as a servant." Sometimes, it is believed that introduction of a budget programme is alone sufficient to ensure its success. Execution of a budget will not occur automatically. It is necessary that the entire organisation must participate enthusiastically in the programme for the realization of the good of budgeting.

4. Expensive Technique: The installation and operation of budgeting system is a costly affair as it requires the employment of specialised staff and involves other expenditure which small concerns may find difficult to incur. However, it is essential that the cost of introducing and operating a budgeting system should not exceed the benefits derived there from.

5. Budget-execution is Not Automatic: Mere preparations of budget will not proper execution. It is very much required that each executive must feel the responsibility and should make efforts to attain the budgeted goals.

2.3.6 Essentials of Effective Budgeting

An effective budgeting system should have some essentials just to ensure best results. Following are the essentials of an effective budgeting system:

1. Support of Top Management: If the budget system is to be successful, it must be fully supported by every member of management and the impetus and direction must come from the very top management. Budgeting system cannot be effective unless the organisation is convinced that the top management considers the system to be important. Thus, the top management must be committed to the budget idea as well as to principles, policies philosophy underlying the system.

2. Sound Forecasting: Business forecasts are the foundation of budgets, these forecasts are discussed by the executives and when most profitable combinations of forecasts are selected they become budgets. The sounder are the forecasts better results would come out of the budgeting system. Hence forecasts should not be based on mere estimates or personal whims. These should be made by using most scientific and statistical methods and techniques.

3. Good Business Policies: Every budget reflects business policies formulated by the top management. In other words, budgets should always be prepared taking into account the policies set for particular department or function. For this purpose, policies should be precise and clearly defined as well as free from any ambiguity. Every department executive must have a clear knowledge of the impact of business policies on his department, so that he may start his budget exercise in right direction and can also submit constructive suggestions.

4. Adequate Accounting System: There is close relationship between budgeting and accounting. For the preparation of budgets, one has to depend on accounting department for reliable historical data which primarily forms the basis for many estimates. The accounting system should be to design so as to set up accounts in terms of areas of managerial responsibility. In other words, responsibility accounting is essential for successful budgeting system.

5. Good Reporting System: An effective budgeting system also requires the good reporting system. As work proceeds in the budget period, actual performance should not only be recorded but it should also be compared with budgeted performance. The variations should be reported promptly and clearly to the appropriate levels of management. The reporting system should be designed in such a way that along with variations, the causes for such variations and persons responsible for them are also reported, so that management may decide about suitable remedial.

6. Accurate and Adequate Statistical Information: As we know, budgets are always prepared and expressed in quantitative terms, it is necessary that adequate and accurate relevant data should be made available to each department. Such data may not be available from accounting system alone and therefore they may be processed through statistical techniques. For example, sales forecasts, production targets, price data, etc. may not flow from normal accounting system alone and these should be collected and processed by using advanced statistical techniques and methods. Further these data should be as far as possible accurate and adequate.

7. Participation by Responsible Executives: Those executives entrusted with the performance of the budgets should participate in the process in setting the budget figures. This will ensure proper implementation of budget programmes.

8. Clearly Defined Organisation: In order to derive maximum benefits from the budget system, well defined responsibility centres should be build up within the organisation. The controllable cost for each responsibility centre should be separately shown.

This will provide adequate opportunity to all executives to make best decisions and alsoto participate in the function of budget preparation. Thus, a well defined organisation helps not only in the budget preparation but it also plays important role in budget co-ordination and operation.

9. Reasonable Goals: The budget figures should be realistic and represent reasonably attainable goals. The responsible executives should agree that the budget goals are reasonable and attainable.

10. Formation of Budget Committee: Budget committee collects the forecasts and targets of each department as well as periodic reports and finalise the final acceptable targets in the form of master budget and also approves the departmental budgets. This committee with budget officer as its secretary gets involvement of all executives in the budget preparation. Even non-financial executives are also consulted in order to make them emotionally committed. Thus, in order to make a budgeting system more and more effective, a budget committee should always be set up.

11. MotivationalApproach: All the employees other than executives should be strongly motivated towards budgeting system. Human beings by nature do not like any pressure and they resent against anything imposed upon them. So, there is a need to make each employeemember feel much more involved in the budgeting system. To meet this end, motivational approach towards budgeting should be followed.

12. Integration with Standard Costing System: Where standard costing system isalso used, it should be completely integrated with the budget programme, in respect of bothbudget preparation and variance analysis.

13. Cost of the System: The budget system should not cost more than it is worth. Since it is not practicable to calculate exactly what a budget system is worth, it only implies a caution against adding expensive refinements unless their value clearly justifies them.

14. Constant Vigilance: Reports comparing budget and actual results should be promptly prepared and special attention focussed on significant exceptions-figures that are significantly different from those expected.

15. Continuous Budget Education: The best way to ensure the active interest of the responsible supervisors is continuous budget education in respect of objectives, potentials and techniques of budgeting. This may be accomplished through written manuals, meetings, etc. whereby preparation of budgets, actual results received, etc.

16. Maximum Profits: The ultimate object of realising the maximum profits should always be kept upper most.

2.3.7 Preliminaries in the Installation of Budget System

Following are the pre-requisites for the successful implementation of a budgeting system:

1. Creation of Budget Centres: A budget centre is a section of the organisation of an undertaking. A budget centre may be a department or a part thereof. Budget centre must beclearly defined because a separate budget has to be set for each such centre with the help of the head of the department concerned. For example, in the preparation of a purchase budget, the purchase manager has to be consulted. Similarly, while preparing labour cost budget the personnel manager will be of great help.

2. Introduction of Adequate Accounting Records: The accounting system should beso designed as to be able to record and analyse the information required. The budget procedures must also employ the same classification of revenues and expenses as the accounting department. Comparison cannot be made if the classifications do not coincide. A chart accounts corresponding with the budget centres should be maintained.

3. Establishment of Budget Committee: In large concerns, the direction and execution of the budget is delegated to the budget committee which reports directly to the top management. The financial controller is usually appointed to serve as the budget director.

He is incharge of preparing budget manual and accumulates the budget and actual figures for reporting. Other members of the budget committee usually comprise various heads of functional departments, like sales manager, purchase manager, production manager, chief accountant, etc. Each member prepares his own departmental budgets which are then considered by the committee for co-ordination.

FUNCTIONS OF BUDGET COMMITTEE

Following are the main functions of a budget committee:

1. To provide historical data to all departmental heads to help them in estimating.
2. To define the general policies of the management in relation to the budget system.

3. To receive budget estimates from various departments for consideration and review.
4. To issue instructions to departments regarding requirements, dates of submissionof estimates, etc.
5. To discuss difficulties with departmental heads and suggest possible revisions.
6. To evaluate and revise the estimates before preparing the final budget.
7. To make recommendations on budget matters where there is conflict between departments.
8. To prepare budget summaries.
9. To co-ordinate all budget work.
10. To inform departmental heads of any revisions made in their budgets by the committee.
11. Prepare a master budget after functional budgets have been approved.
12. To analyse variances and recommend corrective action, where necessary.

4. Forecast: A forecast forms the basis of budgets. A forecast is a future estimate based on some scientific and systematic methods. According to I.C.M.A., London, “A forecast is a statement of probable events.” Anderson has said that a forecast is nothing more than an estimate of future condition.

5. Budget Period: Budget period is a length of time for which a budget is prepared and operated. Budget periods vary between short-term and long-term and no specific period can be laid down for all budgets. It varies among concerns and industries for several factors.

A budget is usually prepared for one year which corresponds to the accounting year. It is then sub-divided into quarters and in turn each quarter is broken down into three separate months. Budget for capital expenditure are usually prepared on a long- term basis. For example, in electricity companies which incur very heavy capital expenditure, the need for new power station is forecasted possibly five to ten years in advance. Such long-term budgets are supplemented by short-term ones. According to I.C.M.A., London, “budget period is the period for which a budget is prepared and employed”

The following points should be considered while fixing the budget period:

1. Budget period should be long enough to complete the production cycle,
2. Budget period should be long enough to arrange for the finance.

3. Budget period should coincide with the accounting period to facilitate comparison of actual figures with budgeted figures.

4. If the business is of seasonal character, the budget period should cover atleast one entire season cycle.

6. Budget Manual: A budget manual is a document in the form of a booklet which spells out the responsibilities and duties of various executives engaged in the preparation and use of budgets. It also specifies the relations amongst various function arise. According to I.C.M.A., London, “A budget manual is a document which sets out the responsibilities of the persons engaged in the routine of and the forms and records required for, budgetary control.” Thus, a budget manual is a statement of budget policies. It lays down the details of the organisational set up with duties and responsibilities of executives including the budget committee and budget director and the procedures and programmes to be followed for developing budgets for various activities.

The contents of the budget manual are summarised as follows:

(1) Description of the budget system and its objectives.
(2) Procedure and forms to be used in budget preparation.
(3) Responsibilities of operational executives, budget committee and budget director.
(4) Budget calendar, specifying definite dates for the completion of each part of the budget and submission of the report.
(5) Method of accounting and account codes in use.
(6) Procedure to be adopted in operating the system.
(7) Follow-up procedures.

7. Budget Controller: A budget controller is a person appointed by the chief executive with an objective to link up the various departments and to co-ordinate their efforts in the preparation of budgets. His status is often as secretary to the budget committee and thus he does not control but only offers advice. He helps in the preparation of the various budgets and their co-ordination. He is empowered to scrutinise the budgets prepared by different departmental executives and to make change in them. He works as a co-ordinator among different departments and monitors the relevant information. He also complies the information about actual performance and determine the deviations in budget and actual performance which he summaries in a report and submits it to appropriate executive. He also brings to the notice of the management the need for revision of budgets and also assists them in this task.

8. Budget Key Factor: Key factor is also known as limiting factor, governing factor and principal budget factor. The key factor means the factor which limits the size of output.

The key factor serves as the starting point for the preparation of budgets. For example, when sales potential is limited, sales is the key factor. Therefore, sales budget should be prepared first. Production and other budgets will follow the sales budget. Thus, a key factor determines priorities in functional budgets. Among the various key factors which affect budgeting are sales, material, labour, plant capacity, etc.

It is possible the more than one key factor is operating at the same time. Under such conditions, the relative impact of such factor is considered in budget preparation. Moreover, key factor is not necessarily a permanent factor. The management may be provided with opportunities to overcome the limitations imposed by key factors. For example, plant capacity can be increased by the installation of new and improved plant and machinery.

9. Organisation Chart: Proper organisation is essential for a successful budget system. An organisation chart should be prepared which clearly shows the plan of the organisation. Each member of management should know the exact scope of his authority and responsibility and his relationship to other members. For this purpose, copies of the organisation chart and written supplements should be distributed to all concerned.

The organisation chart will depend upon the nature and size of the company. A specimen of the organisation chart is given as under:

ORGANISATION CHART

Managing Director

↓

Budget Committee

↓

Budget Director

Sales Manager	Purchases Manager	Production Manager	Personnel Manager	Chief Accountant
↓	↓	↓	↓	↓
1. Sales Budget 2. Selling Cost Budget 3. Distribution Cost Budget 4. Advertising Budget	Purchase Budget	1. Production Budget 2.Plan Utilisation Budget	1.Labout Cost Budget 2. Master Budget	1. Cash Budget 2. Capital Expenditure Budget

2.3.8 Process of Budget Making

The process to be followed in the preparation of budget may differ from business to business. However, a general outline of budget preparation may be sketched out. Normally, the following steps are involved in the preparation of budgets:

1. Guide Lines or Formulation of Policies: As discussed earlier, business policies are the foundation-stone of budget preparation. Therefore, the policies in regard to various functions should be formulated before the construction of budgets. These policies are mostly long-term plans which relate to sales, production, inventory, capital expenditure and cash, etc. Again, such policies differ from business to business and to a large-extent depend upon the efficiency of the management. In fact, policy formulation is the job of management and not that of budget committee.

2. Preparation of Estimates and Forecasts: Having formulated various policies, the departmental heads are asked by the budget controller to prepare budgets for respective departments. For this forecasts are made in respect of different activities of the business. Particularly in respect of; (i) sales, (ii) production, (iii) purchases, (iv) capital expenditure, (v) cost, (vi) cash, etc.

These forecasts are not were estimates, they are made by considering past and present situations and also future expectations. A member of scientific methods and techniques are used for this purpose. One important thing in this respect is to give proper weightage to key factor; if any, while making forecasts.

3. Comparison of Alternative Combinations of Forecasts: When forecasts are made and put for perusal, alternative combinations of forecasts are compared and considered with a view to examine and to establish as which combination would yield maximum profit and also keep to the long-term financial stability intact. If any key factor is found to operate in the accomplishment of a forecast that must be noted and remedies to get it over should also be designed. When the maximum profit yielding combination of forecasts is selected, the forecasts should be treated as final. This job is being generally done by the budget committee.

4. Preparation of Tentative Budgets: Tentative budgets should be prepared and circulated amongst those responsible for preparing and implementing budgets. Their comments and suggestions should be invited for improvement.

5. Preparation of Final Budgets: All suggestions received for improvements should be analysed and incorporated after careful scrutiny. Generally finalised sales forecasts are the starting points based on which sales budget is prepared. Considering sales budget and production facilities, production budget is finalised. Preparation of production budget leads to preparation of cost of production budget and budget for different categories of expenditures. All these budgets lead to formulation of finance budget. These budgets are co-ordinated in to a master budget.

2.4 CHECK YOUR PROGRESS

A. State whether the following statements are True or False:

1. Budget is a means of translating the overall objectives of the business into detailed feasible plan of action.

2. Budget is primarily a planning and control device.
3. The act of preparing budgets is called budgetary control.
4. Forecasting is not a pre-requisite for budgeting

B. Fill in the blanks:

1. Budgeting is a forward ________.
2. A budget programme must be dynamic and continuously with the changing_______________.
3. Every budget reflects business policies formulated by the __________.
4. __________is a length of time for which a budget is prepared and operated.

2.5 SUMMARY

A budget is a precise statement of the financial and quantitative implications of the course of action that management has decided to follow in the immediate next period of time (usually a year). Budgetary control is the establishment of budgets, relating the responsibilities of executive to the requirements of a policy and the continuous comparison of actual with budgeted results either to secure by individual action the objectives of that policy or to provide a firm basis for its revision. Budget manual is a document which sets out the responsibilities of the persons engaged in the routine of and the forms and records required for budgetary control. Budget key factor also known as limiting factor, governing factor or principal budget means the factor which limits the size of output. It is the factor the extent whose influence must first be assessed in order to ensure that functional budgets are capable of fulfilment.

2.6 KEYWORDS

Budget: A financial statement prepared for specified activity for future periods.

Budget Control: Quantitative controlling technique to assess the performance of the organization.

2.7 SELF-ASSESSMENT TEST

1. Define ‘budgetary control’. State the advantages of budgetary control in an organization.

2. Discuss briefly the objectives and limitations of the budgetary control.
3. Define budgetary control and discuss the objectives of introducing a budgetary control in an organization.
4. Define budgetary control. State its objectives. Explain the process by which the various budgets are prepared.
5. What do you think are the essentials of an effective budgetary control system?
6. Discuss the nature and functions of a budget committee.

2.8 ANSWERS TO CHECK YOUR PROGRESS

A. 1. True
   2. True
   3. False
   4. False

B. 1. Planning
   2. business conditions
   3. top management
   4. Budget period

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Subject: Management Accounting	
Course code: BCOM 501	Author: Prof. M. C. Garg
Lesson no. :3	

TYPES OF BUDGETS AND THEIR PREPARATION

Structure

3.0 LEARNING OBJECTIVES

After reading this lesson, you should be able to

- Make a classification of budget.
- Prepare the various types of budget.

3.1 INTRODUCTION

Budget is a precise statement of financial and quantitative implications of the course of actions that management has decided to follow in the immediate next period of time. Budget is a basis for the management to see how the organization has been functioning i.e. whether the targets are set by management have been achieved or not. It is a very effective control tool. Depending upon the various bases adopted, budgets may be classified into different categories.

3.2 CLASSIFICATION OF BUDGETS

Budgets may be of different types depending on budgeting objectives and the scope of budgets. Accordingly budgets may be classified into:

A. On the Basis of Time

1. Long-term Budget,

2. Short-term Budget,

3. Current Budget.

B. On the Basis of Functions

1. Sales Budget,

2. Production Budget,

3. Material Budget,

4. Labour Budget,

5. Factory Overhead Budget,

6. Administrative Overhead Budget,

7. Selling and Distribution Overhead Budget,

8. Research and Development Budget,

9. Capital Budget,

10. Cash Budget,

11. Master Budget,

12. Financial Budget.

C. On the Basis of Flexibility

1. Fixed Budget,

2. Flexible Budget.

D. Other Budgets

1. Performance Budgeting,

2. Zero-base Budget.

3.2.1 BUDGETS ON THE BASIS OF TIME

1. Short-term Budget: A short-term budget is prepared to cover duration of less than one year. Sometimes they are prepared for a month also. Cash budget is an example of short-term budget. Short-term budget is followed in many cases as it is difficult to forecast events on a long-term basis.

2. Long-term Budget: A budget which is prepared to cover a period of more than a year is known as long-term budget. The examples of a long-term budget are research and development budget, capital expenditure budget.

3. Current Budget: The I.C.M.A. Terminology defines a current budget as, "a budget which is established for use over a short period and is related to the current conditions", The budget under review will be adjusted to the current conditions prevailing in the business. This budget motivates the people preparing the budgets as they are sure of attaining the budget,

3.2.2 BUDGETS ON THE BASIS OF FUNCTION

Functional budgets relate to various functional activities of the business, e.g. sales, purchases, production, personnel, cash, etc. Functional budgets commonly prepared are:

I. SALES BUDGET

In most of the institutions, the sales budget is not only the most important but also the most difficult budget to prepare. The importance of this budget arises from the fact that if sales figure is incorrect, then practically all other budgets will be affected. The difficulties in thepreparation of this budget arise because it is not easy to estimate consumers' particularly when a new product is introduced.

The sales budget is a statement of planned sales in terms of quantity and value. It forecasts, what the company can reasonably expect to sell to its customers during the budget period. The sales budget can be prepared to show sales classified according to products, salesmen, customers, territories and periods, etc.

CONSIDERATIONS WHILE PREPARING SALES BUDGET

The following considerations must be kept in mind while preparing sales budget:

1. Nature of Product: Nature of product is significant for preparing its sales budget. Products may be of different kinds, such as, necessity items, luxury items, inferior goods durable goods, etc. These different products are differently affected by booms and depression and have different price elasticity.

2. Past Sales Trends: Past is the starting point for estimating the future. The records of previous year's sales are the most reliable basis as to future sales as the past performance is based on actual business conditions. But in addition to past sales other factors affecting future sales, e.g. seasonal fluctuations, growth of market, trade cycle, etc. should be considered in the preparation of the sales budget.

3. Salesmen's Estimates: In preparing the sales budget the sales manager should consider the estimates of sales received from salesmen because they can make more accurate estimates, being in direct contact with the customers. However, it should be seen that salesmen's estimates should neither be over-optimistic nor too-conservative.

4. General Trade Prospects: The probability of the sales going up or down depends on the general trade prospects. During period of boom generally all sales go up while during depression all sales go down. In this connection valuable information may be collected from financial papers and magazines such as the Economic Times, The Financial Express, The Commerce, etc.

5. Customer Profile: Whether the customers for the products belong to the poorest section or the middle class or the upper class. Different classes grow at a different rate in a growing economy and their demand grows at still different rates.

6. Changing Profile of Competition: In case of monopolistic market sales budgets can be prepared with greater accuracy. More intense the competition, greater are the uncertainties because sales are influenced not by the firm's own plans and strategies, but also by the strategies and counter strategies of the competitors. The sales manager has to anticipate all these.

7. Seasonal Fluctuations: In preparation of the sales budget, seasonal fluctuations should be kept in mind because sales are affected by these fluctuations. In order to have an even flow of production, efforts should be made to minimise the affects of seasonal fluctuations on sales by giving special concessions or added inducements during the off-seasons.

8. Plant Capacity: The budget should be within the plant capacity available and should ensure proper utilisation of plant facilities. Proposed plant extensions should be allowed for in the preparation of the sales budget.

9. Financial Aspect: The sales budget should be within the financial capacity of the concern. Sales expansion usually requires an increase in capital outlay. Thus, if any big sales expansion is planned, it must be ensured that facilities are available to finance the operations.

10. Price Elasticity: Sales quantities are budgeted always in relation to prices and *vice-versa*. Therefore, it is essential to ascertain price elasticity for different products. It may be advisable not to increase budgeted price of products which are highly price elastic; or if price increases are unavoidable, then bring down the budgeted sales quantities accordingly.

11. Orders on Hand: In case orders are received much in advance and there is a long time gap between receipt of orders and their execution due to productive process or some other reason, orders on hand play an important part in preparing sales budgets.

12. Government Regulation: Changes in government regulations regarding import of required raw materials or export of product or pertaining to other related matters should be carefully considered.

13. Availability of Raw Material and other Supplies: Adequate supply of raw materials and other supplies should be ensured before preparing the sales estimates. Sales estimates should be adjusted according to the availability of raw materials, if the raw materials are in short supply.

14. Adequate Return on Capital Employed: The budgeted sales volume should produce an adequate return on the capital employed.

15. Results of Market Research: A firm should carry on market research on a regular basis to ascertain sales potential of different products. The results of market research should be incorporated while preparing sales budgets.

16. Selling and Distribution Costs: Sale of certain goods involves high selling costs, while such costs are minimum in case of other goods. This fact is to be borne in mind while fixing prices and deciding which sale to promote.

17. Product Improvement: In case significant product improvement is being taken up during the budget period, it will have a definite impact on sales which should be taken into account while preparing sales budget.

18. Changes in Channel of Distribution: In case the firm has added to the existing channel of distribution or has eliminated a chain of channel for reaching out to its customers in a more direct manner, this will also have an impact on sales budget.

19. Proposed Expansion and Discontinuance of Product: The firm might he having plans for expansion or discontinuance for products due to its plans of overall expansion, diversification, merger or acquisition.

20. Miscellaneous Considerations: Other considerations such as sales promotion efforts, government intervention, import possibility, product possibility, etc. should also be kept in mind.

The sales manager should evaluate all above factors and related considerations, such as, overall political situation before finalising the sales budget. He should remember that this is the most crucial budget which influences all other budgets.

Example 1

Amit Bros. produces and sells two products in a plant. During the year 2012, it plans to sell the following quantities of each product:

Budget Sales (Units)

	I Quarter	II Quarter	III Quarter	IV Quarter	Total
Product P	1,000	2,500	3,000	1,500	8,000
Product Q	800	600	500	800	2,700
Selling Price (p.u.)	P = Rs.10 Q = Rs. 20				

It reveals from the past experience that Amit Bros. has lost about 3% of Total Revenue, each your because of returns 2%, and for allowance and bad debts 1%.

You are required to prepare Sales Budget for the 2012.

Solution. **Amit Bros. Sales Budget**

(for the year 2012)

Particulars	I Quarter	II Quarter	III Quarter	IV Quarter	Total
Product P	10,000	25,000	30,000	15,000	80,000
Product Q	16,000	12,000	10,000	16,000	54,000
Total Revenue (A)	26,000	37,000	40,000	31,000	1,34,000
Loss due to:					
1. For Returns 2% of T. Revenue	520	740	800	620	2,680
2. For Allowance and Bad Debts @ 1% of Total Revenue	260	370	400	310	1,340
Total Deductions (B)	780	1,110	1,200	930	4,020
Net Sales Revenue (A –B)	25,220	35,890	38,800	30,070	1,29,980

2. PRODUCTION BUDGET

The production budget is the initial step in budgeting manufacturing operations. It is an estimate of production for the budget period. Primary production objective is to product right product at right time, in right quantity, and at right-cost. Production budget provides a well planned for cost of total volume of production with break up for each product and with detailed schedule of operations by days, weeks, months and quarters together with a forecast of closing inventories of work-in-progress and finished stocks. Preparation of production budget is the responsibility of production manager. It is generally prepared in physical units, though it can be prepared in terms of monetary value also. Thus it can be prepared in two parts – budget for physical output and cost of production budget giving separately budgets for material and labour requirement, machine utilisation and overheads. The sales budget is the basis for preparing production budget.

OBJECTIVES OF PRODUCTION BUDGET

Following are the main objectives of production budget:

1. Only desired products having good qualities are produced.
2. Production schedules are strictly maintained.
3. Excess inventory of work-in-progress and finished output is avoided.

4. Output is available first at the time it is required.
5. Demand is not denied due to lack of production.
6. To facilitate preparation of cash budget.
7. To facilitate preparation of production cost budgets for materials, labour and over-heads.
8. To control cost relating to materials, labour and overheads.
9. To minimise scrap, defectives and rectification costs.
10. Production takes place through a most economical process.
11. In general, there is optimisation of resource use, i.e., optimum utilisation of plant and manpower particularly the key factor.

CONSIDERATION IN PREPARING PRODUCTION BUDGET

The following factors must be kept in mind while preparing production budget:

1. Availability of production resources, such as, plant capacity, expansion of plant, plant improvement, availability of manpower.
2. Plant maintenance standards expected during the budget period.
3. Key factor restricting the production process.
4. Sales requirements including the quantity, product changes and customer profile influencing quantity and design of products.
5. Time lag between productions and sale.
6. Time involved in production process.
7. Relation between cost and production run.
8. Economic batch quantity of production.

9. Cost associated with change over from production of one product to another.

10. Production control producers, their effectiveness and flexibility.

11. The rate of technological obsolescence.

12. Inventory policies determining the size of stocks of work-in-progress and finished goods desired at different times of the year.

Example 2

A manufacturing company submits the following figures for the first quarter of 2013:

	Product		
	X	Y	Z
Sales in Units: January	25,000	30,000	10,000
February	20,000	25,000	10,000
March	30,000	35,000	10,000
Selling price (p.u.)	Rs.10	Rs.20	Rs.40
Targets for Ist Quarter, 2013			
	X	Y	Z
Sales in quantity increase	20%	10%	10%
Sales price increase	Nil	10%	25%
Stock position on 1st Jan., 2013:			
% of Jan. 2013 Sales	50%	50%	50%
Stock position on 31st March, 2013	20,000	25,000	5,000
Stock position at end of Jan. and Feb.			
% of subsequent month's sales	50%	50%	50%

You are required to prepare the Sales and Production Budget for the first quarter of 2013.

Solution:

I Increase in Units

X

January : 25,000 + 20% = 30,000

February : 20,000 + 20% = 24,000

March : 30,000 + 20% = 36,000

Y

II increase in S.P. (p.u.)

X = Rs.10 + Nil = Rs.10

Y = Rs.20 + 10% = Rs.22

Z = Rs.40 + 25% = Rs.50

January : 30,000 + 10% = 33,000
February : 25,000 + 10% = 27,500
March : 35,000 + 10% = 38,500

Z

January : 10,000 + 10% = 11,000
February : 10,000 + 10% = 11,000
March : 10,000 + 10% = 11,000

Sales Budget

(for the Ist Quarter 2013)

Month	Product X		Product Y		Product Z	
	Units	Value (Rs.)	Units	Value (Rs.)	Units	Value (Rs.)
January	30,000	3,00,000	33,000	7,26,000	11,000	5,50,000
February	24,000	2,40,000	27,500	6,05,000	11,000	5,50,000
March	36,000	3,60,000	38,500	8,47,000	11,000	5,50,000
Total	90,000	9,00,000	99,000	21,78,000	33,000	16,50,000

Where Value = Units × SP (p.u.)

Working Notes:

I. Stock Position

I. On Ist Jan., 2007, 50% of Sales on Jan. 2013:

X = 50% of 30,000 = 15,000 units
Y = 50% of 33,000 = 16,500 units
Z = 50% of 11,000 = 5,500 units

II. On 31st March, 2013 (given):

X = 20,000 : Y = 25,000; Z = 5,000

III. On 31st Jan., 2013, 50% of Sales on Feb. 2013:

X = 50% of 24,000 = 12,000 units
Y = 50% of 27,500 = 13,750 units
Z = 50% of 11,000 = 5,500 units

IV. On Feb. end 2013, 50% of Sales on March 2013:

X = 50% of 36,000 = 18,000 units
Y = 50% of 38,500 = 19,250 units
Z = 50% of 11,000 = 5,500 units

II. Quantity Produced

Product X

	Jan.	Feb.	March
Sales	30,000	24,000	36,000
Add: Closing Stock (Jan. end)	12,000	18,000	20,000
Produced	42,000	42,000	56,000
Less: Opening Stock (Jan.)	15,000	12,000	18,000
Produced	27,000	30,000	38,000

Product X

Sales	33,000	27,500	38,500
Add: Closing Stock (Jan. end)	13,750	19,250	25,000
Produced	46,750	46,750	63,500
Less: Opening Stock (Jan.)	16,500	13,750	19,250
Produced	30,250	33,000	44,250

Product Z

Sales	11,000	11,000	11,000
Add: Closing Stock (Jan. end)	5,500	5,500	5,000
Produced	16,500	16,500	16,000
Less: Opening Stock (Jan.)	5,500	5,500	5,500
Produced	11,000	11,000	10,500

Production Budget

(for the Ist Quarter of 2013)

Month	Product X (units)	Product Y (units)	Product Z (units)
January	27,000	30,250	11,000
February	30,000	33,000	11,000
March	38,000	44,250	10,500
	95,000	1,07,500	32,500

3. MATERIAL BUDGET

As we know, materials used in production may be classified into direct and indirect materials. Thus material budget deals with the requirement and procurement of direct materials. Indirect materials are with under the works overhead budget. Preparation of material budget is related to production budget because which materials are to be procured, how such materials are to be procured and when these are to be procured depends on what is to be produced, how much to be produced and when it is to be produced. Preparation of material budget includes the following:

1. Determination of the types of material required for budgeted production.

2. Estimation of quantities of each type of material required for production.

3. Ascertaining the opening and closing stock requirement for each type of material.

4. Determining the purchases to be made of different type of materials.

5. Determining how much materials should be 'on order' at different times.

6. Scheduling of purchase of materials in required quantities at required times.

COMPONENTS OF MATERIAL BUDGET

Material budget can be prepared in three stages:

1. Determining the requirement of materials for production.

2. Determining the quantity of materials to be purchases or procured.

3. Determining the extent of orders to be placed.

FACTORS TO BE CONSIDERED IN PREPARING MATERIAL BUDGET

The following items should be considered while preparing material budget:

1. Conditions on the supply side of materials.
2. Safety stocks for each type of material.
3. Budgets for various types of production.
4. Overall stocking policy of the organisation.
5. Seasonal and cyclical fluctuations in the demand for the products.
6. Ordering cost per order and average storage cost of materials.

7. Time gap between placement of an order and actual delivery of materials.

8. Standard time lag between purchase of materials and their actual use in production. This may be different for different materials.

9. Units of different types of raw materials required for each item of output.

10. An approximate percentage of each type of raw material cost to cost of' production soas to have abroad idea regarding raw material requirement.

ADVANTAGES OF MATERIAL BUDGET

Following are the main advantages of material budget:

1. Order can be placed in the nick of time.

2. Smooth operation of production process.

3. Forecasting of the amount to be invested on the purchase of material.

4. Comparison of budgeting value and actual value.

5. Control over misuse of material.

6. Economic in purchase of material.

Example 3.

The Sales Director of a manufacturing company reports that next year he expects to sell 60,000 units of a certain product. The production department gives the following figures:

Two kinds of materials A and B are required for manufacturing the product. Each unit of the product requires 2 units of A and 3 units of B. The estimated opening balances at the commencement of the next year are:

	Units
Finished Products	12,000
Raw Materials (A)	15,000
Raw Materials (B)	18,000

The desirable closing balances at the end of the next year are: Units

Finished Products	18,000
Raw Materials (A)	12,000
Raw Materials (B)	27,000

Draw up a material budget for the next year.

Solution:

Working Notes:

Budgeted Production (Units)		Unit
Units desired		60,000
Add: Closing Stock		18,000
		78,000
Less: Opening Stock	12,000	
Budgeted Production	66,000	

Material Budget (Quantity)

(for the period……)

Particulars	Finished Products (units)	Materials	
Production Budget	66,000	1,32,000*	1,98,000*
Closing Balance of Raw Material	(18,000)	12,000	27,000
	48,000	1,44,000	2,25,000
Opening Balance of Raw Material	12,000	(15,000)	(18,000)
Estimated Sales of Finished Goods	60,000	–	–
Estimated Purchase of Raw Materials	–	1,29,000	2,07,000

*(i) 66,000 × 2 = 1,32,000 (ii) 66,000 × 3 = 1,98,000

4. LABOUR BUDGET

Labour cost is classified into direct and indirect labour cost. Some concerns prepare a labour budget that includes both direct and indirect labour, while others include only direct labour cost and include indirect labour in the overhead cost budget. This budget gives an estimate of the requirements of direct labour essential to meet the production target. This budget may be classified into labour requirement budget and labour recruitment budget. The labour requirement budget is developed on the basis of requirement of the production budget given and detailed information regarding the different classes of labour, e.g., fitters, welders, turners, millers, grinders, dritters, etc.; required for each department, their sales of pay and hours to be spent. This budget in prepared with a view to enable the personnel department to carry out programmes of training and transfer and to find out sources of labour needed so that every effort may be made to remove difficulties arising in production through lack of suitable personnel.

Labour recruitment budget is prepared on the basis of labour recruitment budget after taking into consideration the available workers in each department, the expected changes in the labour force during the budget period due to the labour turnover. This budget gives information about the personnel specifications for the jobs for which workers are to be recruited, the degree of skill and experience required and the rates of pay. A broad idea regarding the direct labour cost can be obtained on the basis of historical record of percentage of direct labour cost multiplied by the budgeted units will give budgeted direct labour cost.

OBJECTIVES OF LABOUR BUDGET

The objective behind planning for labour is to have right quality of labour in right number at right time and with right qualification so that per unit labour cost is least. The main objectives of labour budget are:

1. To estimate the labour cost of production,
2. To provide data for managerial control of labour cost.
3. To provide data for determination of cash requirements for payment of wages.
4. To provide the personnel department with personnel requirements so that it may plan recruitment activities.
5. To determine the direct labour required in terms of labour hours andhence the numberand grade of workers required to meet the production requirements.

6. Providing for training of' different classes of labour and their placement.

CONSIDERATIONS IN PREPARING LABOUR BUDGET

The following considerations should be kept in mind while preparing labour budget:

1. Total quantum of output of different types and production schedules.
2. Labour requirement for each unit of output of each product.
3. Labour already employed in different departments.
4. Policy regarding recruitment of temporary and casual workers.
5. Existing and anticipated wage rates.
6. Scheme of wage payment and incentive scheme already in operation and those proposed.
7. Policy of the organisation regarding overtime payment.
8. Current level of' efficiency and efficiency anticipated during the budget period in view of special training programmes.

ADVANTAGES OF LABOUR BUDGET

Following are the main advantages of labour budget:

l. Forecasting of required number of labours.
2. Appointment of efficient workers.
3. Reduction in production cost.
4. Decrease in industrial dispute.
5. Operations of continuous production process.
6. High moral character f the workers.
7. Leads towards economic prosperity, etc.

MANPOWER BUDGET

Sometimes another budget known as Manpower Budget is prepared. This budget gives requirements of direct and indirect labour necessary to meet the programme set out in the sales, manufacturing, maintenance, research and development and capital expenditure budgets. The labour requirements are expressed in terms of rupee value, number of labour hours, number and grade of workers, etc. This budget makes provision for shift and for the effective training for new workers on labour cost.

The main purposes of this budget are:

1. It provides efficient personnel management.
2. It helps in reducing labour turnover by providing favourable conditions.
3. It helps to make provision for a suitable economic form with which the actual labour force may be compared and controlled.
4. It also helps to measure and stabilize the ratio between direct labour and indirect labour.
5. It gives the requirements of cash for paying wages and thus facilitates the preparation of cash budget.
6. It provides better control on human resource cost.

5. FACTORY OVERHEAD BUDGET

The budget gives an estimate of the works overhead expenses to be incurred in a budget period to achieve the production target. The budget includes the cost of indirect materials, indirect labour and indirect works expenses. The budget may be classified into fixed cost, variable cost and semi-variable cost. It can be broken into departmental overhead budget to facilitate control. In preparing the budget, fixed works overhead can be estimated on the basis of past information after taking into consideration the expected changes which may occur during the budget period. Variable expenses are estimated on the basis of the budgeted output because these expenses are bound to change with the change in output.

The cost accountant prepares the budget on the basis of figures available in the manufacturing overhead ledger or the head of the workshop may be asked to give estimate for the manufacturing expenses. A good method is to combine the estimates of the cost accountant and the shop executive.

Example 4

From the following information, prepare factory overhead budget:

	Rs.
Depreciation	30,000
Insurance	10,000
Salaries	25,000
Electricity	50,000
Repairs and Maintenance	5,000
Materials	10,000
Labours	30,000

Solution:

Factory Overhead Budget

(For the period….)

	Rs.
Fixed Overhead:	
Depreciation	30,000
Insurance	10,000
Salaries	25,000
Total (a)	65,000
Semi-variable Overhead:	
Electricity	50,000
Repairs and Maintenance	5,000
Total (b)	55,000
Variable Overhead:	
Materials	10,000
Labours	30,000
Total (c)	40,000
Total Factory Overhead (a + b+ c)	1,60,000

6. ADMINISTRATION OVERHEAD BUDGET

This budget covers the expenses incurred in framing policies, directing the organisation and controlling the business operations. All expenses of central office relating to general administration including administration salaries, printing and stationery, telephone, office equipment, etc. form part of this budget. In other words, the budget provides an estimate of the expenses of the central office and management salaries. The budget can be prepared with the help of past experience and anticipated changes. Budget may be prepared for each administration department so that responsibility for the increasing such expenses maybe fixed and related to the different executives. Much difficulty is not experienced in developing such budget as most of the administration expenses are of a fixed nature. Although fixed expenses are remain constant and are not related to sales volume in the short run, they are dependent upon sales in the long run with a small change in output, they do not change. However, if there is a persistent fall in output, administrations expenses will have to be reduced by discharging the services of same members of the staff and taking other economy measures. On the other hand, with persistent increase in output or business activity, administration expenses will increase but they may lag behind business activity.

7. SELLING AND DISTRIBUTION OVERHEAD BUDGET

This budget is the forecast of the cost of selling and distribution for budget period and clearly related to the sales budget. All expenses relating to selling and distribution of the various products as indicated in the sales budget are included in it.

These expenses are based on the volume of sales set in the sales budget and budgets are prepared for each item of selling and distribution overhead. Long-term expenses as advertisement are spread over more than one period. Selling and distribution overheads are divided into fixed and variable category with reference to volume of sales. Separate budgets are prepared for variable and fixed items of selling and distribution overheads. Certain items of selling and distribution costs as cost of transport departmentare included in the departmental. Production cost budget from control point of view rather than including in selling and distribution costs budgets.

Example 5

You are required to prepare a selling and distribution overhead budget from the estimates given below:

	Rs.	
Advertisement	1,000	
Salaries of the Sales Department		1,000
Expenses of the Sales Deptt. (Fixed)	750	
Salesmen's Remuneration		
Salaries and D. A.		3,000

Commission @ 1% on Sales Affected,

Carriage Outward estimated@ 5% on Sales

Agents' Commission $6\frac{1}{4}$% on Sales

The sales during the period were estimated as follows:

Rs.80,000 including Agents' Sales Rs.8,000

Rs.90,000 including Agents' Sales Rs.10,000

Rs.1,00,000 including Agents' Sales Rs.10,500

Solution: **Selling and Distribution Overhead Budget**

Particulars	Rs.	Rs.	Rs.
Estimated Sales	80,000	90,000	1,00,000
Fixed Overheads:			
Advertisement	1,000	1,000	1,000
Salaries of Sales Department	1,000	1,000	1,000
Expenses of Sales Department	750	750	750
Salaries and D.A.	3,000	3,000	3,000
Total (a)	5,750	5,750	5,750
Variable Overheads:			
Salesman's Commission			
(@ 1% on Net Sales)	720	800	895
Carriage Outward @ 5% on Total Sales	4,000	4,500	5,000
Agents' Commission			

(@ $6\frac{1}{4}$% on Agents' Sales)	500	625	656
Total (b)	5,220	5,925	6,551
Total Selling & Distribution O.H. (a +b)	10,970	11,675	12,301

8. RESEARCH AND DEVELOPMENT BUDGET

While developing research and development budget, it should be kept in mind that work relating to research and development is different from that relating to the manufacturing action. Manufacturing function gives quicker results than research and development which may go on for several years. Therefore, these budgets are established on a long-term basis. Basic research involves a long period of time, say 20 years, or even more and also large investment. Benefits from such research are also uncertain. Therefore, only large organisations are able to undertake basic research. The budget for such research is mostly in the form of percentage to sales, say 1%, or percentage of profit.

Even applied research is on a long-term basis, say for 5 to 10 years, which is sub-divided to annual budgets uncertainty in applied research is less than that is basic research. As a rule research workers are less cost conscious, so they are not susceptible to strict control. A research and development budget is prepared taking into consideration the research projects in hand and the new research and development projects to be taken up. Thus this budget provides an estimate of the expenditure to be incurred on research and development during budget period.

After fixation of the research and development budget, the research executive fixes priorities for the various research and development projects and submits research and development project authorisation forms to the budget committee. The budgets are finally approved by the senior executive. Before giving the approval, the expenditure on research and development is matched against the benefits likely to be awaited of from the new project. After the approval of the budget, a close watch is kept on the expenditure so that it may not exceed budget provisions. It is also seen that extent of progress made is commensurate with the expenditure incurred.

OBJECTIVES OF RESEARCH & DEVELOPMENT BUDGET

Following are the main objects of research and development budget:

1. To maintain adequate facilities for research and development,

2. Continuous research for new products and product designs,

3. Continuous .research for new techniques of production,

4. Keep in time with changes in stragic business decision,

5. Continuous conversion of research into viable commercial projects,

6. Regular control on research projects, and

7. To secure business growth through research.

9. CAPITAL BUDGET

The capital budget gives an estimate of the amount of capital that may be required forrequiring the fixed assets for fulfilling production requirements as specified in the production budget. Capital budget may include not only assets to be acquired for production function butalso for marketing and administration functions separately. The budget is prepared alter taking into consideration the available productive capacities, probable reallocation of existing assets and possible improvement in production techniques. Separate budget may be prepared for different items of fixed assets such as plant and equipment budget, building budget, etc.

The capital expenditure budget is an important budget providing for acquisition of assets, necessitated by the following factors:

CONSIDERATIONS IN PREPARING CAPITAL BUDGET

1. Planned improvement in production techniques.

2. Production programmes during the budget period.
3. Existing production and establishment facilities and capacities in different departments.
4. Existing allocation of fixed resources for different purpose.
5. Analysis into heavy repairs vs. replacement of assets.
6. Study of comparative efficiency and profitability differentasset alternatives.
7. Programmes for modernisation in office and administration and marketing during the budget period.
8. Programmes for expansion in production facilities and the time duration over such expansion programmes are spread.
9. Listing of assets to be purchased during the budget period for:

   (i) Replacement of existing assets.

   (ii)Productivity improvement and cost-reduction.

   (iii)Expansion of existing capacities.

   (iv) Purchase of additional assets because of starting up of new lines of production.

   (v) Purchase of additional assets to meet a proposed increase in production dueto increase in demand.

10. CASH BUDGET

Cash budget is one of the crucial budgets for an organisation. It is a forecast of cash from time to time. In other words, this budget gives an estimate of the anticipated receipt and payments of cash during the budget or for a long period. A firm may have weekly, monthly, quarterly, or annual cash budget, depending on the requirement. This budget is divided in two parts, one showing the estimated cash receipt on account of cash sa1es, credit collections, and miscellaneous receipts and the other showing the estimated disbursement on account of cash purchases, amount payable to creditors, wages payable to workers, indirect expenses payable, income-tax payable, dividend payable, budgeted capital expenditure, etc. In short, every factor which affects the receipt and payments of cash is taken into account in the preparation of cash budget.

Cash budget makes a provision for a minimum cash balance which will be available at all times. In general, this balance should be equal to one month's operating expenses plus some provisions for contingencies. The minimum balance of cash will help in tiding over adverse conditions of a minor nature. Mean while management can make alternative arrangement foradditional cash. Cash budget has been defined by different scholars as follows:

"Cash budget is an estimate of cash receipts and disbursement for a future period of time."

–Guthman and Dougall

"Cash budget is a schedule to record cash inflows, and outflows over a period with a view to locating the timing magnitude of cash surplus and shortage."

– S. C. Kuchhal

ADVANTAGES/IMPORTANCE OF CASH BUDGET

Following are the main advantages of preparing cash budget:

1. It provides an opportunity to review the cash flow for future periods as realistically as possible and make sure that cash is available for revenue and capital expenditure.
2. Preparation of cash budget by a company will help to plan its cash position in such a way that maximum seasonal discounts can be availed of.
3. Where adequate amount of cash is not likely to be available during certain periods e.g. when payment of bonus, dividend, tax, etc. fall due, the company can know in advance so that advance action can he taken to make available the required amount on the most advantageous terms.
4. The importance of cash budget may be more is some trades than in others. e.g. in trades where there are wide seasonal fluctuations or where long contracts are undertaken.
5. If large surplus of cash is likely to result during certain periods then it will be possible to plan most profitable investment of these funds (surplus).

6. Even for obtaining funds from financial institutions, the system of preparing cash budget helps to convince the bank or financial institutions about the bonafide of the company's requirements.
7. It serves as a sound basis for cash control.
8. Budgeted cash balance at the beginning and at the end of each period are available at a glance.
9. It facilitates co-ordinating cash requirement in relation to working capital, sales, raising of debt and capital, and investments.
10. It shows whether capital expenditure may be financed internally.

CONSIDERATIONS IN PREPARING CASH BUDGET

The following consideration should be kept in mind while preparing cash budget:

1. Cash budgets for the previous periods.
2. Minimum cask requirement during different periods.
3. Sources of raising liquid funds, their comparative costlines and to what extent the firm proposes to use these sources.
4. The anticipated increase or decrease in the level of activities during the budget period.
5. Changes in the nature of production, sales and customer profile.
6. Changes in the credit policy of suppliers and the policy regarding availing of cash discount.
7. Changes in firm's credit policy.
8. Nature of business including business fluctuations, risks and uncertainties.
9. Planned capital expenditures.

METHODS OF PREPARING CASH BUDGET

Cash budget can be prepared in any of the following ways:

(i) Receipt and Payment Method,

(ii)Adjustment Profit and Loss Method,

(iii) Projected Sheet Method.

(i) RECEIPT AND PAYMENT METHOD

Under this method, cash budget is prepared on the basis of anticipated cash receipts and anticipated cash payments during the budget period. One part of the budget shows anticipated cash receipts on account of cash sales, collection from debtors, receipt of cash on account of interest and dividends, proposed sale of old assets, issue of capital or debenture, etc. The otherpart shows estimated disbursement of cash on account of cash purchases, payment to creditors, operating expenses, payment of interest and dividends, redemption of capital and debentures, payment of direct and indirect taxes, etc. These receipts and payment may be calculated on monthly or quarterly or any other basis. For example, in case of monthly cash budget, opening balance of the first month + anticipated cash receipts – anticipated. Cash payments during the first month gives anticipated closing balance of cash at the end of the first month, which becomes opening cash for the next month, and so on. The budgeted cash balance may be positive or negative but actual cash balance can never be negative.

Minimum cash balance required at any time is also pre-determined. The size of minimum cash depends on the nature of business and economic fluctuations. Larger minimum balance is required during a period of higher uncertainties. In case the budgeted cash is less than the minimum cash required, arrangements are to be made to meet cash deficits. If it is in excess, plans should be prepared for profitable deployment of temporary or permanent surplus. A cash budget may be presented in the following form:

CASH BUDGET

(For the year ended 31st March)

	Jan.	Feb.	March	Total
Opening Balance of Cash	–	–	–	–
Receipts:				
Cash Sales	–	–	–	–
Receipt from Debtors	–	–	–	–
Dividend Received	–	–	–	–
Issue of Shares, etc.	–	–	–	–

Total Receipts	–	–	–	–
Payments:				
Cash Purchases	–	–	–	–
Trade Creditors	–	–	–	–
Wages & Salaries	–	–	–	–
Dividend Payable	–	–	–	–
Capital Expenditure	–	–	–	–
Taxes	–	–	–	–
Total Payments	–			
Closing balance	–	–	–	–

TIME-LAG IN PAYMENT

It is important to keep in mind that the amount of month's expenditure in the ratio of time-lag would be payable in the next months. For example, if the wages for the months of March are Rs.1,000 and time-lag in payment of wages is one month then Rs.1,000 will be paid in April. If the time-lag is $\frac{1}{2}$ month then $\frac{1}{2}$of Rs.1,000 = Rs.250 will be paid in April and the balance Rs.750 (1,000 – 250) in March itself. If the time-lag is $\frac{1}{8}$ month then $\frac{1}{8}$of Rs.1,000 = Rs.125 will be paid in April and the balance Rs.875 (1,000 – 125) will be paid in March itself.

If the wages for the month April is Rs.1,200 then on the basis of above time-lag, amount payable in the month April will be:

(1) 1,200 × $\frac{1}{2}$ = Rs.600 + Rs.500 of March = Rs.1, 100

(2) 1,200 × $\frac{1}{4}$ = Rs.300 + Rs.250 of March = Rs.550

(3) 1,200 × $\frac{1}{8}$ = Rs.150 + Rs.125 of March = Rs.275

Example 6.

Estimate cash requirements of Meerut Fruit Co. Ltd. for June, 2013:

1. Sales:

		Rs.
February	2013	25,000
March	2013	20,000
April to June	2013	30,000 p.m.

1. Roughly half of the sales are for cash. 90% of credit sales are collected in the month following the sale and the balance one month later.
2. Fruits are always bought for cash to avail of the cash discount of 5%. The purchase budget for the second quarter (April to June) was 1,500 baskets p.m. at Rs.10 per basket.
3. Wages and salaries for second quarter (April to June) were budgeted at Rs.5,000 p.m.
4. Manufacturing and other expenses budget for the quarter:

	Rs.
Cash Expenses	4,500
Depreciation	7,500
Selling Expenses	3,000
Administrative Expenses	2,000 (in April & May only)

Solution:

Cash Budget

(For the period of 3 months ending June, 2013)

Particulars	2013		
	April	May	June
Receipt	Rs.	Rs.	Rs.
Balance b/d	Nil	2,500	9,250
Cash Sales ($\frac{1}{2}$ of each month's sales)	15,000	15,000	15,000
Cash collected from Debtors	10,250	14,500	15,000
Total (A)	25,250	32,000	39,250
Payments:			
Cash Purchases of Fruit			
(Less: Cash Discount @ 5%)	14,250	12,250	14,250
Wages and Salaries	5,000	5,000	5,000

Cash Expenses (4,500 ÷ 3)	1,500	1,500	1,500
Selling Expenses (3,000 ÷ 3)	1,000	1,000	1,000
Administrative Exp. (2,000 ÷ 2) (April and May)	1,000	1,000	–
Total (B)	22,750	22,750	21,750
Balance of Cash (A –B)	2,500	9,250	17,500

Cash requirements for June, 2013 Rs.21,750.

Working Notes:

Calculation of Cash Collected from debtors:

	Feb.	March	April	May	June
	12,500	10,000	15,000	15,000	15,000
Collection from Debtors:					
90% of Previous month's Sales	–	–	9,000	13,500	13,500
10% Credit Sales of Two Month's Back	–	–	1,250	1,000	1,500
Total	12,500	10,000	10,250	14,500	15,000

For April : 90% of Rs.10,000 = Rs.9000

For May: 90% of Rs.15,000 = Rs.13,500

For June : 90% of Rs.15,000 = Rs.13,500

For April : 10% of Rs.12,500 = Rs.1,250

For May : 10% of Rs.10,000 = Rs.1,000

For June : 10% of Rs.15,000 = Rs.1,500

Cash Purchase of Fruit 15,000 × 1 = 15,000

Less: 5% Cash Discount = 750

Rs.14,250 each year (April to June)

Note: As the opening balance of cash in the month of April is not given in the question, so it has been assumed as nil.

(ii) ADJUSTED PROFIT AND LOSS METHOD

This method is suitable for long-term cash forecast. It is based on the view that it is the profit that is one of the sources of cash in the business. The profit as per Profit and Loss Account is converted into cash figure by preparing an Adjusted Profit and Loss Account. This method is known as Adjusted Profit and Loss Account method because net profit, in most cases, is not equal to net inflow of cash from operations. This requires adjustments. All non-cash expenses, such as, depreciation, preliminary expenses written off, goodwill written off are added to net profit figure. Increase in trade creditors and bills payable and decrease in trade debtors, bills receivable and stocks are added to net profit. Increase in debtors, bills receivable and stocks and decrease in trade creditors and bills payable are all deducted from net profit so as to arrive at cash from operations.

In brief, for arriving at cash from operations, increase in current liabilities and decrease in current assets are added to net profit and decrease in current liabilities and increase in current assets (in both cases, other than cash and bank) are deducted.

Raising of cash through issue of shares and debt, sale of assets, etc. are added and application of cash in the form of redemption of pref. share capital or debt, purchase of assets payment of dividends, etc. are deducted to arrive at budgeted cash balance at the end. A format of cash budget under this method is given as under:

CASH BUDGET

(For the Period…………)

	Jan. (Rs.)	Feb. (Rs.)	March (Rs.)	Total (Rs.)
Opening Balance of Cash Additions:				
Budgeted Net profit	–	–	–	–
Depreciation				
Provisions				
Goodwill written off				
Preliminary Exp. Written off				
Sale of Plant				

Issue of Capital and Debenture				
Decrease in Current Assets				
Increase in Current Liabilities				
Total Cash available				
Deductions:				
Purchase of Assets (P. & M. etc.)				
Payment of Dividend, Taxes etc.				
Increase in Current Assets				
Decrease in Current Liabilities				
Total Deductions				
Closing balance of Cash				

I. Items to be included in Opening Balance of Cash:

1. Non-cash Expenses:
   (i) Depreciation
   (ii) Deferred Expenses or Fictitious Assets Written-off
   (iii) Prepaid Expenses written-off.
2. Decrease in Assets:
   (i) Decrease in Sundry Debtors
   (ii) Decrease in Closing Stock
   (iii) Decrease in Bills Receivable
   (iv) Decrease in Investment or Securities
   (v) Sale of Fixed Assets.
3. Increase in Liabilities:
   (i) Increase in Sundry Creditors
   (ii) Increase in Bills Payable
   (iii) Increase in Loans and Advances
   (iv) Tax Payable
   (v) Issue of Capital
   (vi) Issue of Debenture etc.

4. Increase in Net Worth.

II. Items to be deducted from Opening Balance of Cash:

1. Non-cash Incomes:
   (i) Rent accrued
   (ii) Interest accrued
   (iii) Dividend accrued
2. Increase in Assets:
   (i) Increase in Sundry Debtors
   (ii) Increase in Closing Stock
   (iii) Increase in Investments
   (iv) Purchase of Fixed Assets
   (v) Increase in Bills Receivable.
3. Decrease in Liabilities:
   (i) Decrease in Sundry Creditors
   (ii) Decrease in Bills Payable
   (iii) Return of Capital
   (iv) Redemption of Debentures
   (v) Redemption of Preference Shares.
4. Decrease in Net Worth.

Example 7.

Following are the Balance Sheets of Ishika Ltd., on actual as on 31st March, 2013 and the other forecasted as on 31st March, 2013:

Ishika Ltd.
(Balance Sheet as at)

Particulars	Notes	Amount Actual Rs.	Amount Budgeted Rs.
1. EQUITY & LIABILITIES:			
1. Shareholder's Funds:			
(a) Share Capital		1,25,000	1,75,000
(b) Reserve & Surplus			
Statement of Profit and Loss		1,33,500	2,87,500
2. Non-current Liabilities			
Debentures		73,500	50,000
3. Current Liabilities:			

Sundry Creditors		67,300	1,00,000
Total (1 + 2 + 3)		3,99,300	6,12,500
II. ASSETS:			
1. Non-current Assets:			
(a) Fixed Assets:			
Plant and Machinery (at cost)		2,20,000	2,40,000
Accuvalated Depreciation		(50,000)	(30,000)
		1,70,000	2,10,000
(b) Investment		1,00,000	90,000
2. Current Assets:			
Inventory (Stock)		61,900	92,500
Trade Receivable (Debtors)		49,000	83,200
Cashes hand at Bank		18,400	1,36,800
Total (1+2)		3,99,300	6,12,500

Statement of Forecasted Profit and Loss

For the Budgeted year ended 31st March, 2013

Particulars	Notes	Amount Rs.	Amount Rs.
Revenue from Operation (Gross Profit)			2,00,000
Add: Other Income:			
Profit on Sale on Investment etc.		2,000	
Interest		10,000	12,000
Total Revenue			2,12,000
Less: Expenses:			
Accumulated Depreciation		22,000	
Administration & Selling Expenses		10,000	
Interest Charges		3,000	
Loss on Sale of Plant & Machinery		8,000	43,000
Profit before Taxes			1,69,000
Less: Income Tax			(5,000)
Net Profit after Taxes			1,64,000
Less: Appropriation of Profits:			
Dividend			(10,000)
Net Profit during the year			1,54,000

Additional Information:

(1) A new plant and machinery costing Rs.80,000 was purchased during the year.

(2) An old plant and machinery costing Rs.60,000 with accumulated depreciation of Rs.42,000 was sold for Rs.10,000.

(3) Investment and securities costing Rs.10,000 were sold for Rs.12,000.

Prepare a cash forecast (cash budget) for the management of the company by Adjusted Profit and Loss Method.

Solution: **Cash Budget (Adjusted P/L A/c)**

(for the Budget period ended March, 2013)

	Rs.	Rs.
Opening Balance of Cash	–	18,400
Add: Additions to Cash:		
Issue of Share Capital	50,000	–
Sale of Plant and Machinery	10,000	–
Sale of Investment etc.	12,000	–
Depreciation Written-off	22,000	
Loss on Sale of Plant & Machinery	8,000	–
Increase in Sundry Creditors	32,700	–
Profit for the year	1,64,000	2,98,700
		3,17,100
Less: Reduction in Cash:		
Redemption of Debentures	23,500	
Purchase of Plant & Machinery	80,000	
Payment of Dividend	10,000	
Profit on Sale of Investment etc.	2,000	
Increase in Stock	30,600	
Increase in Debtors	34,200	1,80,300
Closing Balance of Cash		1,36,800

(iii) PROJECTED BALANCE SHEET METHOD

This method is also used for forecasting cash requirements for long periods and is rather similar to Adjusted Profit and Loss Account methods discussed earlier in this chapter. Under this method a budgeted balance sheet is prepared with all items of assets and liabilities excluding cash or bank balance. The two sides of the balance sheet are then totalled and the balancing figure is taken as cash. If the liabilities are more than assets, this reveals a balance of Cash/Bank, and if assets exceed liabilities, this reveals a bank overdraft.

11. MASTER BUDGET

When all functional budgets have been prepared, these are summarised into, what is known as master budget. Thus a master budget is a consolidated summary of all the functional budgets. According to C.I.M.A., London, "Master budget is a summary budget incorporating its component functional budgets and which is finally approved, adopted and employed.

Master budget is prepared by the budget committee by co-ordinating various functional budgets. Once a master budget is approved by the budget committee it becomes a set of goals to be achieved by the organisation during the budget period. This budget is generally in three parts – budgeted income statement, budgeted balance sheet at the end of budget period, and budget ratios relating to the above two statements, such as, profit ratios, turnover ratios, working capital ratio, and debt-equity ratio, etc.

ADVANTAGES OF MASTER BUDGET

Following are the main advantages of master budget:

1. It co-ordinates and integrates all functional budgets.

2. A summary of all functional budgets in capsule from is available in one report.

3. It reveals managerial goals regarding revenues, expenses, profits, cash flows, etc.

4. It gives a projected overall profit position of the organisation.

5. It serves as set of goals to be achieved during the budget period.

6. It gives forecast relating to all assets and liabilities at the end of the budget period.

7. The accuracy of all the functional budgets is checked because the summarised information of all functional budgets should agree with the information given in the master budget.

Thus, this budget is very useful for the top management because it is usually interested in the summarised meaningful information provided by this budget.

Example 9.

From the following information of a glass manufacturing company, prepare the Master Budget:

Sales:	
Toughened Glass	Rs. 3,00,000
Bent Toughened Glass	Rs.5,00,000
Direct Material Cost	60% of Sales
Direct Wages	20 workers @ Rs.150 p.m.
Factory Overhead:	
Indirect Labour	Rs.500 p.m.
Works Manager	Rs.400 p.m.
Foreman	Rs.12,600
Stores and Spares	$2\frac{1}{2}$ % on Sales
Depreciation on Machine	Rs.3,600
Light and Power	Rs.5,000
Repairs etc.	Rs.8,000
Administration, Selling & Distribution Expenses	Rs.14,000 p.a.

Solution: **Master Budget**

(for the period…..)

I. Sales Budget:		Rs.
Toughened Glass		3,00,000
Bent Toughened Glass		5,00,000
		8,00,0000
Less: Administrative, Selling and Distribution Expenses	14,000	
Net Sales Revenue (a)		Rs.7,86,000
II. Production Cost Budget:		Rs.
Direct Materials $\left\{\frac{8,00,000 \times 60}{100}\right\}$	4,80,000	

Direct Wages (20 × 150 × 12)		36,000
	Prime Cost	5,16,000
Factory Overhead (Variable):		
Variable Stores and Spares	Rs.	
$\frac{8,00,000 \times 2.5}{100}$	20,000	
Light and Power	5,000	
Repairs etc.	8,000	33,000
		5,49,000
Fixed Expenses:		
Indirect Labour (500 × 12)	6,000	
Works Manager (400 × 12)	4,800	
Foreman	12,600	
Depreciation	3,600	27,000
	Work Cost (b) Rs.	5,76,000
	Expected Profit (a–b) Rs.	2,10,000

12. FINANCIAL BUDGET

Financial budget reports about the estimated receipts and payments, which facilitate the correct estimate of working capital. Alternatively, financial budget may include projected statement of affairs and projected income statement on the basis of which it is determined as what cash balance would be at the end of the budget period. This budget also helps the owner of cashier of the business to forecast the need for cash for cash for the conduct of business operations during the definite future period. Financial budget includes monthly cash budget and capital expenditure budget.

GENERAL PRINCIPLES OF FINANCIAL BUDGET

Following are the general principles of Financial Budget:

1. Financial Budget should be based on Capital Expenditure Budget.

2. It should be approved by concerned authority.

3. Short-term and long-term financial management should be disclosed in it.

4. Payment of dividend should be disclosed in this budget.

5. Planned changes in stock and expected changes in debtors should also be shown by this budget.

FUNCTIONS OF FINANCIAL BUDGET

Main functions of Financial Budget are:

1. To make planning for the division of working capital.
2. To make clear the need of changes in capital structure and to assist the cash accountant in the provision of cash.
3. To supply information of profit earned and to assist in preparing budget for the success of business.
4. To make estimation of Profit and Loss Account, Statement of Affairs and Cash Position at the end of the year.

Example 10.

Manjula& Co. estimated its sales of products for the next four years as under:

I Year	3,000 units @ Rs.5 p.u.
II Year	4,000 units @ Rs.5 p.u.
III Year	6,000 units @ Rs.4 p.u.
IV Year	8,000 units @ Rs.4 p.u.

The additional investments in current assets at the end of the each year is expected to be:

	Rs.
I Year	Nil
II Year	2,000
III Year	3,000
IV Year	3,000

The purchase of machine is estimated as follows:

III Year	5,000
IV Year	8,000

It is estimated that variable cost over the four year period will be Rs.2.5 p.u. and that the fixed overhead will be Rs.3,000 p.a. Prepare Finance Budget.

Solution:

Manjula& Co. Finance Budget

(For the year ……)

Particulars	I year Rs.	II year Rs.	III year Rs.	IV year Rs.	Total Rs.
Receipt from Sales (A)	15,000	20,000	24,000	32,000	91,000
Payment for:					
Variable Cost	7,500	10,000	15,000	20,000	52,500
Fixed Cost	3,000	3,000	3,000	3,000	12,000
Current Assets	–	2,000	3,000	3,000	8,000
Machines	–	–	5,000	8,000	13,000
(B)	10,500	15,000	26,000	34,000	85,500
Net Balance of Cash (A–B)	4,500	5,000	(2,000)	(2,000)	5,500

3.2.3 BUDGET ON THE BASIS OF FLEXIBILITY

Based on level of activity or capacity, budgets are classified into fixed budget and flexible budget.

1. FIXED BUDGET

A fixed budget is one which is prepared keeping in mind one level of output and one set of conditions. It has been defined as a budget which is designed to remain unchanged irrespective of the level of activity attained. It is also known as a ‘Rigid Budget’. It is drawn on the assumption that there will be no change in the budgeted level of activity. It does not take into consideration any change in expenditure arising out of changes in the level of activity. Fixed budget is prepared on the assumption that output and sales c Ban be estimated with a fare degree of accuracy. This means that in those situations where sales and output cannot be accurately estimated, fixed budget does not suit.

However, a fixed budget can be usefully employed for cost comparisons and control if actual level of activity is close to the budgeted activity and conditions relating to production, sales, prices, demand competition remain more or less static. Fixed budgets are also useful where fixed costs are of step character and differ at different level of output.

LIMITATIONS

Following are the main limitations of fixed budget:

1. These budgets cannot be used as a tool for effective cost control.

2. Actual costs and budgeted costs cannot be compared with the help of fixed budget.

3, Actual level of activity is generally different from the anticipated level of activity.

4. Actual conditions of productions, sales, etc. may be different from anticipated conditions.

5. Preparation of fixed budget does not involve detailed analysis of costs into fixed variable and semi-variable,

6. These budgets cannot be used for cost ascertainment and price fixation.

2. FLEXIBLE BUDGET

In contrast to fixed budget, a flexible budget is one, "which is designed to change in relation to the level of activity attained." The basic principle of flexible budget is that a budget is of little use unless cost and revenue are related to the actual volume of production. Flexible budget has been developed with the objective of changing the budget figures to correspond with the actual output achieved. Thus a budget might be prepared for various levels of activity, say, 50%, 60% 70%, 80%, 90% and 100% capacity utilisation. Then whatever the level of output actually reached, it can be compared with an appropriate level.

A flexible budget is also known as dynamic budget, variable budget, sliding scale budget step budget or expenses control budget. A flexible budget is prepared after making an intelligent classification of all expenses between fixed, semi-variable and variable because the usefulness of such a budget depends upon the accuracy with which the expenses can be classified. The C.I.M.A., London defines flexible budget as, "a budget which by recognising the difference between fixed, semi-variable and variable cost is designed to change as volume of output changes."

APPLICATION OF FLEXIBLE BUDGETS

Flexible budget is prescribed under the following cases:

1. Where overall business situation is highly dynamic and fast changing.
2. Where the industry is subject to fast changes in fashion, designs, tastes, and consumer preferences.
3. In case consumer profile, product profile and technology are fast changing.
4. Where industry, is continuously suffering from shortage of various production inputs which determine the level of activity.
5. Where, there is large variation in the level of business activity during different periods due to seasonal and cyclical fluctuations.
6. Where it is difficult to forecast the level of business activity during the budget period because business is new.
7. Where large part of output is intended for export.
8. Where company frequently introduces new products.
9. Where sabs are affected by weather conditions e.g. soft drink industry, woollen garments, etc.
10. Where there are general changes in sales.
11. Where the industries are engaged in business like ship-building.

DISTINCTION BETWEEN FIXED AND FLEXIBLE BUDGETS

Following are the main differences between fixed and flexible budgets:

	Point of distinction	Fixed Budget	Flexible Budget
1.	Condition	It assumes that conditions would remain static	It is designed to change according to changed conditions
2.	Flexibility	It is not flexible and does not change with the actual volume of output achieved.	It is flexible and can be recasted quickly according to level of activity attained.
3.	Classification of Costs	Under this budget, costs are not classified according to their variability i.e. fixed, semi-variable and variable.	Under this budget, costs are classified according to their nature, such as, fixed, semi-variable and variable.
4.	Forecasting	Under this budget it is difficult to forecast the results accurately	This budget clearly shows the impact of various expenses on the operational aspect of the business.
5.	Comparison	Under this budget, comparison between actual costs and budgeted costs cannot be made if the volume of output differs.	Under this budget, actual costs and budgeted costs can be compared and corrective actions may be taken.
6.	Ascertainment of Cost	If there is a change in circumstances, it is not possible to ascertain costs accurately.	Under this budget, costs can be easily ascertained at different levels of activity.
7.	Cost Control	This budget is ineffective as a tool of cost control and it has a limited application.	This budget can be used as a tool for cost control and it is widely used.
8.	Budget	Only one budget at a under it, fixed level of activity is prepared due to an unrealistic expectation of the part of the management i.e. all conditions will remain unaltered.	Under it, series of budgets are prepared at different levels of activity.
9.	Fixation of Prices and Submission of Tenders	If the budgeted and actual activity levels vary, the correct ascertainment of costs and fixation of prices becomes difficult.	It helps in fixation of price and submission of tenders due to correct ascertainment of costs.

ADVANTAGES OF FLEXIBLE BUDGET

The following are the main advantages of flexible budgets:

1. With flexible budget it is possible to establish budgeted cost for any range of activity.
2. A flexible budget is very useful for purpose of budgetary control because it corresponds with changes in the level of activity.
3. It is helpful in assessing the performance of departmental heads because their performance can be judged in relation to the level of activity attained by the organisation.
4. It provides a logical comparison of budgeted cost with the actual cost.
5. By this budget, cost ascertainment at different levels of activity is possible because a flexible budget is prepared for various levels of activity.
6. It is helpful in price fixation and sending quotations.
7. Flexible budget reckons operational realities and streamlines control function and profit planning. It gives balanced perspective comparison.
8. It facilitates production planning and profit planning.

Example 10.

The cost of an article at a capacity of 5,000 units is given under 'M' below. For a variation of 25% in capacity above or below this level the individual expenses vary as indicated under 'N' below:

	M (Rs.)	N (Rs.)
Material Cost	50,000	100% Varying
Labour Cost	30,000	100% Varying
Power	3,000	80% Varying
Repairs and Maintenance	4,000	80% Varying
Stores	2,000	100% Varying
Inspection	1,000	20% Varying

Depreciation	20,000	100% Varying
Administrative Expenses	10,000	25% Varying
Selling Expenses	5,000	50% Varying
	1,25,000	
Cost per unit	25.00	

Find the unit cost of the product at production level of 4,000 and 6,000 units.

Solution:

Flexible Budget

Particulars	Level of Production (Units)		
	5,000	4,000	6,000
	Rs.	Rs.	Rs.
Variable Expenses:			
Materials	50,000	40,000	60,000
Labour	30,000	24,000	36,000
Stores	2,000	1,600	2,400
Total (A)	82,000	65,600	98,400
Semi-variable:			
Power: Variable 80%	2,400	1,920	2,880
Fixed 20 %	600	600	600
Repairs and Maintenance: Variable 80%	3,200	2,560	3,840
Fixed 20 %	800	800	800
Inspection: Variable 20%	200	160	240
Fixed 80%	800	800	800
Administrative Exp.: Variable 75%	2,500	2,000	3,000
Fixed 25%	7,500	7,500	7,500
Selling Expense: Variable 50%	2,500	2,000	3,000
Fixed 50%	2,500	2,500	2,500
Total (B)	23,000	20,840	25,160
Fixed Expenses:			
Depreciation	20,000	20,000	20,000
Total (C)	20,000	20,000	20,000
Total Cost (A+B+C)	1,25,000	1,06,440	1,43,560
	Rs.25	Rs.26.61	Rs.23.93

10.2.4 OTHER BUDGETS

1. PERFORMANCE BUDGETING

In traditional system of budgeting as used in business enterprises and government departments, the main defect is that the control of performance in terms of physical units and the related costs in not achieved. This is because in such budgeting, money concept is given more importance. Performance budgeting is a relatively new concept which focuses on functions, programmes and activities. Performance budgets are established in such a manner that each item of expenditure related to a specific responsibility centre is closely linked with the performance of that centre. Thus performance budgeting lays stress on activities and programmes. It tries to answer questions like – What is to be achieved? How is to be achieved? When is to be achieved? etc.

The Government of India has now decided to introduce performance budgeting in all its departments in phased manner. An example of performance budgeting in governmentsystem of accounting may be that generally expenditure is classified under the heads pay and allowances, transport repairs and maintenance, etc. In performance budgeting, the classification of expenditure may be setting up of a steel mill, construction of railway station, purchase of an aircraft carrier, etc. and other physical targets. When work on these activities is started, funds are obtained againstthese physical targets. Reports are then prepared for any under-spending or over-spending which are then analysed for corrective action to be taken.

STEPS IN PERFORMANCE BUDGETING

The following steps are generally followed in the process of performance budgeting.

1. Under it, overall budgetary objectives are laid down.
2. Objectives are classified in accordance with main objectives.
3. Long-term strategy and short-term tactics are related to each other.

4. Alternative activities are identified and analysed in terms of other costs and benefits for selecting activities that can be taken up.
5. Agencies or segments responsible for carrying out different set of activities are identified.
6. Resources are allocated for each set of activities. There may be sub-allocationfor individual activities falling under an activity classification.
7. Sources of finance detailing the budgetary and account head under which funds are provided should also be specified for each set of activity. This is particularly important in case of government budgeting.
8. Time schedules and orders and instructions should be issued while giving ‘go ahead’ for budgeted activities.
9. Officers in-charge of activities should submit periodic reports on progress of work output.
10. Corrective action should be ascertained for the performance budget in question and for other such budgets which could be taken up in near future.
11. On completion of activities, a detailed report on these activities should be thoroughly analysed in terms of cost variances and under or over achievements in terms of physical units.

OBJECTIVES OF PERFORMANCE BUDGETING

1. To present more clearly, the purpose and objectives for which the funds are sought and to bring out the programmes and accomplishments in financial and physical terms.
2. To render performance audit more purposeful.
3. To help better understanding and better review of the- budget by the legislature.
4. To improve the formulation of the budget and to facilitate the process of decision-making at all levels of the government.

5. To enhance the accountability of the management and at the same time to provide an additional total to management for control of financial operations.

PERFORMANCE BUDGETING Vs. TRADITIONAL BUDGETING

1. Traditional budgeting is basically retrospective. It draws heavily from the budgets for the previous period. On the other hand, performance budgeting is based on prospective approach focusing on situation expected to prevail during the budget period.
2. In traditional budgeting decision-making flaws both top down and bottom up. In performance budgeting it mainly flows downward.
3. Traditional budgeting focuses on costs while performance budgeting focuses on purposes, targets and products.
4. Under traditional budgeting both input and output are mostly measured in monetary units, where asunder performance budgeting lays more emphasis on achievement of physical targets.

2. ZERO BASE BUDGETING (ZBB)

This budget is prepared starting from zero. This technique was introduced in the budgeting in the State of Gorgia by Mr. Jimmy Carter who was then the Governor of the State. When Mr. Carter later on become the President of the U.S.A., ZBB as a managerial tool has become increasingly popular since the yearly 1970s. It is steadily gaining acceptance in the business world because it is providing its utility as a tool integrating the managerial function of planning and control.

Conventional budgets are prepared only on past performance and actual costs. Thus a conventional budget represents a qualification of the firm's objectives and the efficiency of budgeting as a planning and control device depends upon the activity in which being used. Budgets are best used as a managerial control activities which are directly related to the final output of the organisation because the inputs used by these activities can be compared with the output of these activities. Thus a more accurate budget can be framed once the relationship between inputs and output is established. But there are some activities which are not directly related to the firm's output such as the legal staff and the personal office. A more accurate budget cannot be developed for such activities because the tasks assigned and resources allocated to such activities are not directly related to the firm's output such as the legal staff and the personnel office. A more accurate budget cannot be developed for such activities because the tasks assigned and resources allocated to such activities are not directly related to the firm's output and it is difficult to develop and use standard cost for such activities. ZBB is most appropriate in controlling these staff and support areas.

A conventional budget is developed mainly on the concept of incrementalism. Under this approach cost levels of the previous year are often taken as a base to start within; and budget units focus their attention on ascertaining what changes from the previous year are required. Thus, a budget is developed on the basis of incremental changes from the previous year's figures taken as base. An incremental approach to budgeting carries forward previous year's inefficiencies and extra vagances because previous year's figures are taken as base for the development of a budget. Thus incremental approach does not promote operational efficiency because it does not require managers to review their past activities.

On the other hand, ZBB is not based on the incremental approach and previous year' figures are not adopted as a base. Rather, zero is taken as a base as the name goes. Taking zero as a base, a budget is developed on the basis of likely activities for the future period. In ZBB, by delinking the budget from the past, the past mistakes are not repeated. Funds required for any activity for the next, budget period should be obtained by presenting a convincing case. Funds will not be available as a matter of course.

FEATURES OF ZBB

Following are the main features of ZBB:

1. All programmes, both old and proposed, are considered totally afresh.
2. Resources are allocated for each decision package.

3. All packages are evaluated in depth by systematic analysis.
4. All activities are identified in appropriate decision packages.
5. Every benny to be spent needs to be fully justified.
6. There is a manager who is responsible for all decision packages.
7. A detailed cost benefit analysis of each programme is undertaken.
8. Proposals are initially made, evaluated and presented by managers of decisions packages.
9. Priorities are established and decision packages are ranked.
10. There is free and frank communication between unit managers and top management.
11. Total responsiveness to changing conditions.
12. Total involvement of unit managers in ZBB process and they have corresponding accountability.
13. Decision packages are linked to corporate objectives and segment objectives.

ADVANTAGES OF ZBB

Following are the main advantages of ZBB:

1. ZBB is not based on incremental approach, so it promotes operation efficiency because it requires managers to review and justify their activities. Under it, past inefficiencies are not repeated.
2. It encourages generation of alternatives and location of most profitable alternative.
3. ZBB is based on prioritising of decision packages. This process promotes optimisation of resources use.
4. It facilitates more effective delegation of authority.
5. It promotes high level of motivation at the level of unit managers.
6. Under it, unit managers are made accountable for the resources allocated to them.

7. It forces managers to remain up-dated in terms of technologies, available options and opportunities.
8. Both old and new proposals compete equally for scarce resources without any bias for any of these.
9. It encourages closer coordination and improved communication between manages of decision units and top management.
10. It encourages managers to search for efficient and effective ways to improve operations.
11. There is greater participation and involvement of the personnel who are responsible for implementation of the budget.
12. It is less time consuming and straight forward as itavoids consideration of budget. Proposals at numerous managerial levels. The proposals go for approval straight from unit managers to top management.
13. It is eminently suitable for service activities and marketing, administration and personnel functions and other areas where flexible budgeting is difficult.
14. The documentation of decision packages provides management with a deep, co-ordinated knowledge and dependable information regarding all organisational activities.
15. All continuing activities are also re-appraised for justifying further claims for budget allocations.This forces critical appraisal of all activities and decisions.
16. ZBB is particularly useful for service departments and governments.
17. It makes managers cost conscious and helps them in identifying priorities in the overall interest of the organisation.

DISADVANTAGES/LIMITATIONS OF ZBB

Following are the main defects or ZBB:

1. Paper work will increase periodically due to large number of decision packages.
2. The cost of preparing the various packages may be very high in large firm involving vast number of decision packages.
3. Ranking of packages is very often subjective and may give risk to conflicts.
4. Bad managers may resist new ideas and changes as they feel threatened by ZBB.
5. It cannot be introduced without first educating the managers regarding its pros and cons and training them for implementing ZBB.
6. Managers at different levels between the unit managers and top management may feel neglected and by-passed.
7. Certain activities may involve lots of costs and benefits of qualitative character, incapable of qualification. It may be difficult to fix their rank or priorities.
8. ZBB lays emphasis on short-term costs and benefits.
9. Effective ZBB requires a continuous flow of correct, up-dated and complete information relating to each decision package.
10. ZBB can be manipulated by unscrupulous managers by initially starting work on a project to be discarded later, facilitating misappropriation of resources.
11. In a labour plenty economy ZBB may result in substitution of labour by capital resulting in greater unemployment.

With due safeguards in place for the above defects, ZBB is an effective tool of planning, coordination, control, motivation and efficiency improvement.

3.3 CHECK YOUR PROGRESS

State whether the following statements are True or False:

1. The production budget is the initial step in budgeting manufacturing operations.

2. Cash budget makes a provision for a minimum cash balance which will be available at all times.
3. Financial budget reports about the estimated receipts only.
4. Flexible budget is one, which is designed to change in relation to the level of activity attained.

3.4 SUMMARY

The production budget is a statement of goods, how much should be produced. The ultimate aim of the production budget is to find out the volume of production to be made during the year based on the sale volume. Sales Budget is an estimate of anticipation of sales in the near future prepared by the responsible person for the sale of a product by considering the various factors of influence. The expected increase or decrease in the sales volume should be incorporated at the time of preparing the sales budget from the yester periods sale figures. Cash budget is nothing but an estimation of cash receipts and cash payments for specified period. Zero-base budgeting is one of the renowned managerial tools, developed in the year 1962 in America by the Former President Jimmy Carter. The Zero-base budgeting considers the current year as a new year for the preparation of the budget but the yester period is not considered for consideration.

3.5 KEYWORDS

Functional budgets: These relate to various functional activities of the business

Cash budget: Cash budget gives an estimate of the anticipated receipt and payments of cash during the budget or for a long period.

Master budget: It is a summary budget incorporating its component functional budgets and which is finally approved, adopted and employed.

Fixed Budget: A fixed budget is one which is prepared keeping in mind one level of output and one set of conditions.

3.6 SELF ASSESSMENT TEST

1. What do you understand by flexible budget? How it is prepared?

2. What is sales budget? Discuss the principal factors that should be considered in developing a sales budget.

3. What purposes does production budget serve? How is it prepared?

4. What do you understand by zero-base budgeting? Explain its advantages.

5. Sumit Bros. produces and sells two products in plant. During the year 2012, it plans to sell the following quantity of each product.

Budget Sales (Units)

	I Quarter	II Quarter	III Quarter	IV Quarter	Total
Product A	5,000	12,500	15,000	7,500	43,000
Product B	4,000	3,000	2,500	4,000	15,500
Selling Price (p.u.)	A = Rs.10 B = Rs. 20				

It reveals from the past experience that Sumit Bros. has lost about 3% of Total Revenue, each year because of returns 2%, and for allowance and bad debts 1%.

Prepare a budget incorporating the above given information.

6. Prepare production budget for six months ending 31st March, 2013 from the following information:

Product	Estimated Stock on Oct. 1, 2012 (units)	Desired Closing Stock on 31-3-2013 (units)	Budgeted Sales during Oct. to March (units)
A	12,500	18,750	50,000
B	31,250	25,000	62,500
C	50,000	37,500	93,750

7. You are required to prepare a selling and distribution overhead budget from the estimates given below:

	Rs.	
Advertisement		6,000
Salaries of the Sales Department	6,000	
Expenses of Sales Department (Fixed)	4,500	

Salesman's Remuneration:

Salaries and D.A. 18,000

Commission @ 1% on sales affected.

Carriage outward estimated @ 5% on Sales Agent's Commission $6\frac{1}{4}$% on Sales.

The Sales during the period were estimated as follows:

Rs. 4,80,000 including Agent's Sales	Rs.48,000
Rs. 5,40,000 including Agent's Sales	Rs.60,000
Rs. 6,00,000 including Agent's Sales	Rs.63,000

8. From the following information, prepare a cash budget for the months of January to April, 2013:

Month	Expected Sale (Rs.)	Expected Purchase (Rs.)
January	80,000	60,000
February	55,000	1,05,000
March	62,000	95,000
April	53,000	1,15,000

Wages to be paid to workers Rs.6,000 each month. Balance at Bank on 1st January, 2013 is expected to be Rs.16,000. It has been decided by the management that:

(i) In case of deficit of funds within Rs. 10,000 arrangements can be made with the bank.
(ii) In case of deficit of funds exceeding of Rs.10,000 but within the limit of Rs.50,000 issue of debenture is to be preferred.
(iii) In case of deficit of funds exceeding Rs.50,000 issued of shares is to be preferred.

9. From the following information, prepare cash budget for the period from 1st April to 30th June. The opening cash balance was Rs.4,000 on 1st April:

Months	Sales	Selling Exp	Purch.	Wages	Factory Exp.	Adm. Exp.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
January	34,000	1,400	16,000	3,000	2,000	1,000
February	32,000	1,500	16,800	3,200	2,200	1,100
March	36,400	1,300	16,600	3,360	1,600	900
April	31,000	1,360	16,600	2,400	2,100	950
May	33,000	1,480	15,200	3,600	2,400	1,080

June	40,000	1,400	13,600	3,200	1,920	1,140

Further Information:

1. Period of Credit allowed by suppliers and to customers one month (1 month).
2. Lag in Payment of:
   (a) Wages 1/8 month,
   (b) Factory expenses 1 month,
   (c) Administration expenses 1 month,
   (d) Selling expenses 1 month.
3. Machinery purchased for Rs.10,000 in March payable on delivery.
4. Building purchased in April for Rs.30,000 payable in two equal instalments in May and June.
5. Commission @ 5% on sales payable one month after sale.

10. From the following information of a manufacturing company prepare the master budgets:

	Rs.
Sales	4,00,000
Direct Material Cost	60% of Sales
Direct Wages	20 workers @ Rs. 75 p.m.
Factory Overhead:	
Indirect Labour	Rs.250 p.m.
Works Manager	Rs.200 p.m.
Foreman	Rs. 6,300
Stores and Spares	$2\frac{1}{2}$ % on Sales
Depreciation on Machine	Rs.1,800
Light and Power	Rs.2,500
Repairs etc.	Rs. 4,000
Administrative, Selling and Distri. Expenses	Rs.7,000

11. The cost of an article at a capacity of 5,000 units is given under ‘A’ below. For a variation of 25% in capacity above or below this level the individual expenses vary as indicated under ‘B’ below:

	A	B
	(Rs.)	(Rs.)
Material Cost	40,000	(100% Varying)

Labour Cost	24,000	(100% Varying)
Power	2,000	(80% Varying)
Repairs & Maintenance	3,200	(75% Varying)
Stores	1,600	(100% Varying)
Inspection	800	(20% Varying)
Depreciation	16,000	(100% Fixed)
Administrative Expenses	8,000	(25% Varying)
Selling Expenses	4,800	(50% Varying)
	1,00,400	
Cost per Unit	Rs. 20.08	

12. A depart of company 'X' attains sales of Rs. 6,00,000 at 80% of its normal capacity and its expenses given below:

Administrative Cost:	
Office Salaries	Rs.90,000
General Expenses	2% of Sales
Depreciation	Rs.7,500
Rates and Taxes	Rs.8,750
Selling Cost:	
Salaries 8% of Sales	
Travelling Expenses	2% of Sales
Sales Office Expense	1% of Sales
General Expense	1% of Sales
Distribution Cost:	
Wages	Rs.15,000
Rent	1% of Sales
Other Expenses	4% of Sales

Draw up flexible administration, selling and distribution cost budget operating at 90%, 100% and 110% of normal capacity.

3.7 ANSWERS TO CHECK YOUR PROGRESS

1. True

2. True
3. False
4. True

3.8 REFERENCES/SUGGESTED READINGS

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Subject: Management Accounting	
Course code: BCOM 501	Author: Prof. M. C. Garg
Lesson no. :04	
MARGINAL COSTING	

MARGINAL COSTING

Structure

4.0 LEARNING OBJECTIVES

After reading this lesson, you will be able to

- Define marginal costing and explain its characteristics.
- Differentiate between Absorption Costing and Marginal Costing.
- Describe the meaning and applications of Break-even Point, Profit Volume Ratio, Margin of Safety and Angle of Incidence.

4.1 INTRODUCTION

This is one of the techniques of ascertaining cost of production of goods or services manufactured. In fact, it is not a method of costing but it could be used in conjunction with any method of costing such as job or process costing. This technique can also be used along with other techniques of costing such as standard costing, and budgetary control. This technique is also known as ‘variable costing’ or ‘direct costing’. Under this technique, only variable costs are charged as product costs and included in inventory valuation. Fixed manufacturing costs are not allotted to products but are considered as period costs and thus charged directly to profit and loss Account of that year. Fixed costs also do not enter in stock valuation. Here it is necessary to know about these two terms product costs and period costs:

Product Costs: Product costs are those costs which become a part of production cost. Such costs are also included inventory valuation.

Period Costs: Period cost, on the other hand, are those costs which are not associated with production, such costs are treated as an expense of the period in which these are incurred.

4.2 MEANING, CHARACTERISTICS, ADVANTAGES AND DISADVANTAGES OF MARGINAL COSTING

Marginal cost is the additional cost of producing an additional unit of product. It is the total of all variable costs. It is composed of all direct costs and variable overheads. The CIMA, London has defined marginal cost, ‘as the amount at any volume of output by which aggregate costs are changed, if volume of output is increasedor decreased by one unit.” It is the cost of one unit of product which would be avoided if that it were not produced. An important point is that marginal cost per unit remains unchanged irrespective of the level of activity.

Example: A company manufactures 100 units of a product per month. Total fixed cost month is Rs.4,000 and marginal cost per unit is Rs. 220. The total cost per month will be:

Rs.

Marginal (variable) cost of 100 units (100 x 220)	22,000	
Fixed Cost		4,000
	Total Cost	26,000
Now, if output is increased by one unit, the cost will appear as follows :	Rs.	
Marginal (variable) (101 × 220)		22,220
Fixed Cost		4,000
		26,220

Thus, the additional cost of producing one additional unit is Rs.220 (i.e. 26,220 –26,000) which is its marginal cost. However where fixed costs also increase with the increase in the volume of output, this may be the result of increase in production capacity. Such increase in fixed costs are dealt with as a part of what is known as ‘differential cost analysis’.

The term ‘Marginal costing’ has been defined by the Institute of Cost and Management Accountants, London as, “The ascertainment, by differentiating between fixed costs and variable costs, of material cost and of the effect on profit of changes in volume or type of output.”

From this definition, it is clear that marginal costing is a special technique which is concerned with the differentiation between fixed costs and variable costs ascertainment of marginal cost and finding out the effect on profit of changes in volume or type of output, In short, it is the special technique of ascertaining the marginal cost or variable cost of a product.

The main characteristics of marginal costing are:

(1) In marginal costing all costs are classified into fixed and variable. Semi-variable costs are also segregated into fixed and variable elements.

(2) Marginal costing takes into account only variable costs in computing the cost of production.

(3) Marginal costing excludes fixed costs from the cost of products, as they are considered as period costs and not as the costs of the products.

(4) Under marginal costing, the stock of finished goods and work-in-progress are valued at marginal cost only.

(5) The difference between the sales and the marginal costs of sales is called the contribution.

(6) The difference between the contribution and fixed costs represents either profits or losses.

(7) Under marginal costing, the relative profitability of a product is judged by the marginal contribution.

(8) Under marginal costing, prices are based on marginal costs plus contribution.

(9) In marginal costing, variable costs increase or decrease in proportion to the increase or decrease in output.

(10) In marginal costing, marginal cost per unit remains unaffected due to change in the volume of output.

(11) Total fixed cost is not affected due to change in output or it remains constant toa certain level of-production.

(12) Fixed cost per unit decreases with the increase in production.

(13) Aggregate of variable cost and fixed cost is called total cost.

COMPUTATION OF MARGINAL COST

Marginal cost is the aggregate of following items

(1) Direct materials,

(2) Direct wages,

(3) Other direct expenses,

(4) Variable manufacturing overhead,

(5) Variable selling and distribution overhead.

Note: General administrative overhead is a fixed expense, so it is not considered in marginal cost.

MARGINAL COST EQUATION

$$TC = FC + VX$$

Where,

TC = Total cost

FC = Fixed cost

V = Variable cost per unit

X = Production (in units)

On the basis of above equation it can be said that fixed cost the part of total cost does not vary in proportion to output, where as variable cost varies in proportion to the output. Cost per unit is affected by the nature of these expenses. Thus cost per unit decreases when the volume of output increases. On the other hand, total variable expenses increase with the increase in the volume of production, but cost per unit remains unchanged.

Above things can be explained with the help of following example.

Example:

Total Production (units)	500
Fixed Costs	Rs.15,000
Variable Exp. (p.u.)	Rs.10

Then,

$$TC = FC + VX$$
$$= 15,000 + (10 \times 500)$$
$$= 15,000 + (5,000)$$
$$= Rs.20,000$$

In above example, total fixed expense is Rs.15,000 and variable expense is Rs.5,000 or fixed cost per unit is Rs.30 (i.e. 15,000 ÷ 500) and variable expense per unit is Rs.10 (i.e.

5,000 ÷ 500), and total cost per unit is Rs.40 (i.e. Rs.30 + Rs.10). If production units are increased to 1,000 then total costs will be:

TC = PC + VX

= 15,000 + (10 × 1,000)

= 15,000+ 10,000

=Rs.25,000

In case of increased units of production total cost p.u. will be Rs.25 (i.e. 25,000 ÷ 1,000),where as when production unit was 500 units then total cost per unit was Rs.40. In second case, fixed cost per unit will be Rs.15 (i.e.15,000 ÷ 1,000) where as variable cost per unit will remain the same as Rs.10 (i.e.10,000 ÷ 1,000). Thus, total cost per unit on the production of 1,000 units will be as follows:

variable cost	Rs.10
fixed cost	Rs.15
Total cost	Rs.25

ADVANTAGES OF MARGINAL COSTING

Following the main advantages of marginal costing

(1) Help in managerial decisions: The most important advantage of marginal costing is to assist management in taking many valuable decisions. Information regarding marginal cost and contributions provided by marginal costing facilitates making policy decisions in like fixing selling prices below cost, make or buy, introduction of a new product line, utilization of spare plant capacity, selection of the most profitable product mix., etc. In addition to these marginal, costing technique helps in taking managerial decisions in the following

(2) What to produce: The manufacturer of which product should be undertaken can be divided upon after comparing the profitability results of different products. Certain products may turn to be unprofitable with the passage of time. Selection of orders and products depends on their profitability and sales effort can be properly directed.

When the existing capacity is to be utilized for producing different products in varying quantities, marginal costing is a good guide for deciding the optimum combination of products to match the available capacity and resources. Thus, for the choice of alternative products and introduction of new products, marginal costing technique is helpful to a great extent.

(b) How much to produce: The level of output which is most profitable for a running concern can be determined. Therefore, the production capacity can be utilised to the maximum possible extent. Maximisation of profit can be achieved and profit planning becomes easier on basis of applying marginal costing technique.

(c) Whether to Produce: The decision whether a particular product should be manufacture in the factory or bought from outside source can be taken by comparing the price at which it can be had from outside and the marginal cost of producing that article in the factory.

(d) How to Produce: When a particular product can be manufactured by two or more methods, the ascertainment of marginal cost of manufacturing the product under each method shall be helpful in dividing as to which method should be adopted for its manufacture. Further, problem of employing machine or to produce entirely by hand labour can be solved withhelp of marginal costing technique.

(e) When to Produce: In periods of trade recession, whether the production in the plant is to be suspended temporarily or permanently closed down, can be decided upon after carefully examining the marginal cost structure.

(2) Helpful in Controlling Cost: On the basis of marginal costing system, greater control over cost is possible. This is so because by classifying costs into fixed and variable, the management can concentrate more on the control of variable costs which are generally controllable and pay less attention to fixed costs which may be controlled only by the top management and that too, to a limited extent.

(3) Simple Technique: Marginal costing is comparatively simple to operate because it avoids the complications involved in allocation, apportionment and absorption of fixed overheads which is, in fact, arbitrary division of indivisible fixed costs.

(4) Helpful in Profit Planning: To aid profit planning, marginal costing technique enables data to be presented to management in such a way as to show cost volume profit relationship. Graphic Presentation in the form of break-even charts and profit-volume charts are also used to facilitate planning future performance.

(5) Realistic Valuation of Stocks: Under marginal costing system, stock of work-in-progress and finished goods are valued only at variable costs. Thus no fictitious profits can arise due to fixed cost being absorbed and capitalised in unsold stock. This is because marginal costing prevents the carry forward in stock valuation of some portion of current year’s fixed costs. Stock valuation in marginal costing is therefore, more realistic and uniform.

(6) Constant cost per unit: Marginal costing takes in to account only variable costs which remain the same per unit of product irrespective of the volume of output. It thereforeavoids the effect of varying cost per unit as it ignores fixed costs which are on a time basis and have no relation with the Size of production.

(7) Exact absorption of overheads: Under marginal costing system, there is no of problem of under or over absorption of overheads.

(8) Adjunct to other techniques: Marginal costing is valuable adjunct to standard costing and budgetary control.

(9) Performance evaluation: It helps in evaluation of performance of different departments, divisions and salesmen.

(10) Flexibility: Marginal costing technique is a flexible technique in the Sense that it can be used along with other techniques such as budgetary control and standard costing.

DISADVANTAGES OF MARGINAL COSTING

Following are the main disadvantages of marginal costing system:

(1) Difficult Analysis: Marginal costing assumes that all costs can be analysed into fixed and variable elements. In practice however, it may be difficult to segregate all costs into fixed and variable components. Certain costs are caused purely by management divisions and cannot be strict by classified as fixed or variable, e.g. amenities to staff, bonus to workers, etc.

(2) Difficulty in application of marginal costing system: Those industries where large stocks of work-in-progress, it is difficult to apply marginal costing system technique. Thus ship-building or construction contracts if fixed overheads are not included in the valuation of work-in-progress there may be loss every year, while on the completion of contracts, there may he huge profits. Such fluctuations in profits can be avoided if total absorption costing is employed.

(3) Less effective in capital intensive industries: In capital intensive industries, the proportion of fixed costs (like depreciation, maintenance, etc.) is large. The marginal costing technique, which ignores fixed costs, thus proves less effective in such industries. With the increased automation in industries, marginal costing is, therefore, left with a limited scope.

(4) Lack of sound basis of pricing: Where prices are fixed by competition, marginal costing gives the impression that so long as prices exceed marginal cost production is profitable. It ignores the danger of two much sales being made at marginal cost or marginal cost plus some contribution as it may result in overall losses. Although in certain circumstances product may be sold at less than total cost, prices in the long run must corer total cost as otherwise cannot be earned.

(5) It ignores time factor: As discussed earlier in this chapter, fixed cost is treated as period cost, so by ignoring fixed cost time factor is also ignored. For example, marginal cost of two jobs may be identical but if one job takes twice as long to complete as the other, the true cost of the job taking longer time is higher than that of the other. This is not disclosed by marginal costing. Production cannot be achieved without incurring fixed costs but marginal costing creates an illusion that fixed costs have nothing to do with production.

(6) Lack of cost control: Cost control cannot be done by this method. Cost control can be better achieved with the help of other techniques such as budgetary control andstandard costing as marginal costing technique does not provide any standard for the evaluation of performance which is provided by standard costing and budgetary control.

(7) Acceptance of order from a new customer at a very low price: Sometimes an order from a new customer is accepted at a very low price on the argument that if marginal cost is little loss than the price of the order it will give some contribution. This may sometimes lead to a general reduction in selling price and thus to losses.

(8) Ignorance of impact of fixed expense on production: With the development of technology fixed expenses have increased and their impact on production is much more than that of variable expenses. So a system of costing which ignores fixed expense is less effective because a significant portion of the cost representing fixed expenses is not taken care of.

(9) Classification of expenses is not logical: The separation of expenses into fixed and variable presents certain technical difficulties where as marginal costing technique assumes that all expenses can be divided into fixed and variable. In fact, no variable cost is completely variable and no fixed cost is completely fixed. Actually, most of the expenses are semi-variable and it is difficult to segregate there into fixed and variable.

4.3 DIFFERENCE BETWEEN ABSORPTION COSTING AND MARGINAL COSTING

Absorption costing differs from marginal costing in several respects. The main difference between two are:

(1) Under absorption costing, costs are classified on functional basis as production costs, administrative costs and selling and distribution costs. On the other hand, under marginal costing costs, are classified according to their variability as variable costs and fixed costs.

(2) Under absorption costing, variable and fixed costs are charged to products. But, under marginal costing, only variable costs are charged to products.

(3) Under absorption costing, stocks are valued at production costs (i.e. fixed and variable both). On the other hand, under marginal costing stocks are valued at variable costs only.

(4) On account of the difference in the valuation of stocks, the value of closing stocks under absorption costing is more than the value of closing stocks under marginal costing.

(5) Absorption costing results in carrying over the fixed factory overheads of one period to another period. But marginal costing does not result in carrying over of fixed costs of one period to another period.

(6) Under absorption costing, there is the arbitrary apportionment of fixed 'factory overhead costs; which may result in under or over recovery of fixed overheads. But there is to such arbitrary apportionment of fixed overheads under marginal costing; as marginal costing excludes fixed costs from product costs entirely.

(7) Absorption costing focuses its attention one profit, which is the excess of sales over the total costs in solving managerial problems. On the other hand, marginal costing focuses its attention on contribution, which is the excess of sales over variable costs, in solving marginal problems.

(8) The profit under absorption costing does not bear a direct relationship to sales. But the contribution under marginal costing bears a direct relationship to sales.

(9) Absorption costing is not quite suitable for decision making, whereas marginal costing is highly suitable for decision-making.

(10) Absorption costing does not reveal the cost volume profit relationship, whereas the disclosure of the cost volume profit relationship is an important aspect of marginal costing.

Example 1

The cost of production of 8,000 units is given below:

	Rs.
Materials	60,000
Labours	25,000
Overhead	40,000 (50% Fixed)

Find out the marginal cost in total and per unit and test the equation TC= FC + VX.

Solution:

Statement of Marginal Cost (8,000 units)

	Total	Per Unit
	Rs.	Rs.
Material	60,000	7.500
Labours	25,000	3.125
Variable Overhead (50% of 40,000)	20,000	2.500
Marginal Costs Rs.	1,05,000	13.125

Test of Equation: TC = FC + VX

= 20,000 + 13.125 × 8,000 = 20,000 + 1,05,000

= Rs.1,25,000

Example 2.

In two periods, total costs amount to Rs.45,000 and Rs.55,000 against production of 20,000 units and 25,000 units respectively. How much is marginal cost per unit and how much is fixed cost?

Solution:

As we know TC = VX + FC

In First Period 45,000 = 20,000 V + FC … (i)

In Second Period 55,000 = 25,000 V + FC … (ii)

By solving both the equations, i.e. deducting equation (ii) from equation (i)

20,000 V + FC = 45,000

25,000 V + FC = 55,000

– – –

–5,000 V = – 10,000

or $V = \frac{10,000}{5,000}$ $\therefore$ V = Rs.2 p.u.

Now putting the value of V in equation (i) we get,

$$TC = VX + FC$$

$$45,000 = 20,000 \times 2 + FC$$

or $40,000 + FC = 45,000$

or $FC = 45,000 - 40,000$

$\therefore$ $FC = Rs.5,000$

Thus, Marginal Cost p.u is Rs.2 and Fixed Cost Rs.5,000.

Example 3.

Cost data of a manufacturing company are as follows

	2011	2012
Output (units)	1,50,000	1,20,000
Sales (units)	1,20,000	1,50,000
Fixed Cost for the year	Rs.12,00,000	12,00,000
Material Cost (per unit)	Rs. 4	4
Wages (per unit)	Rs. 2	2
Variable Exps. (per unit)	Rs. 3	3

The selling price per unit is Rs.25. There was no stock on 1-1-2011. You are required to work out profit for 2011 and 2012 from the following methods:

(i) Absorption Costing Method,

(ii) Marginal Costing Method.

Solution: 1. Statement of Profit under Absorption Costing Method

	2011	2012
	Rs.	Rs.
Materials	6,00,000	4,80,000
Wages	3,00,000	2,40,000
Prime Cost	9,00,000	7,20,000
Overheads:		
Fixed	12,00,000	12,00,000
Variable	4,50,000	3,60,000
Cost of Production	25,50,000	22,80,000

Add: Opening Stock (Finished Goods)	–	5,10,000
	25,50,000	27,90,000
Less; Closing Stock (Finished Goods)	5,10,000	–
Cost of Sales	20,40,000	27,90,000
Profit	9,60,000	9,60,000
Sales (1,20,000 × 25; 1,50,000 × 25) Rs.	30,00,000	37,50,000

Working Note:

Valuation of Stock:

(12,00,000 ÷ 1,50,000) = Rs. 8 + (Rs.4 + Rs.2 + Rs.3), Variable

= Rs.17 p.u. Total Cost.

Now, 1,50,000 units – 1,20,000 units = 30,000 units

= 30,000 unit × Rs.17

= Rs.5,10,000

II. Statement of Profit under Marginal Costing Method:

		2011	2012
		Rs.	Rs.
Sales	(A)	30,00,000	37,50,000
Material		6,00,000	4,80,000
Wages		3,00,000	2,40,000
Variable Expenses		4,50,000	3,60,000
Marginal Cost of Production		13,50,000	10,80,000
Add: Opening Stock (1,50,000 – 1,20,000)			
= 30,000 × (4 + 2 +3)		–	2,70,000
		13,50,000	13,50,000
Less: Closing Stock		2,70,000	–
Marginal Cost of Sales	(B)	10,80,000	13,50,000
Contribution	(A–B)	19,20,000	24,00,000
Less: Fixed Costs		12,00,000	12,00,000
Profit		7,20,000	12,00,000

EXPLANATION

It is clear from the above example that according to marginal costing method the consolidated aggregate profits for the year 2011 and 2012 are Rs.19,20,000 (i.e. Rs.7,20,000 + 12,00,000) and according to absorption costing method it is also Rs.19,20,000. But according to absorption costing method, profit for the year 2011 exceeds Rs.2,40,000 (i.e., 9,60,000 – 7,20,000) and in the year 2012 it decreases by Rs.2,40,000 (i.e., 12,00,000 – 9,60,000) in comparison to marginal costing method. This is due to difference in the valuation of stocks.

According to marginal costing technique a profit of Rs.7,20,000 has been earned on a sale of Rs.30,00,000 in the year 2011 whereas in the year (2012) profit earned is Rs.12,00,000 on a sale of Rs.37,50,000. Thus on a less sale proceed less profit has been earned and on a more sale proceed more profit has been earned. On the other hand, under absorption costing method equal profits have been earned in both the years (2011 and 2012), i.e. Rs.9,60,000.

Sale units and production units for the year (2011 and 2012) are 1,20,000 units and 1,50,000 units respectively and thus there is a closing stock of 30,000 units in the year 2006 (i.e. 1,50,000 – 1,20,000) which has been transferred to the year 2011 as opening stock. This 30,000 units have been valued on the basis of variable expenses which is Rs.2,70,000 (i.e. 30,000 units ×(4 + 2 + 3), according to marginal costing technique. On the other hand, according to absorption costing technique closing stock of 30,000 units have been valued at total cost of production as under:

1,50,000 – 1,20,000 × (Rs.8 + Rs.4 + Rs.2 + Rs.3)

= 30,000 units × Rs.17

= Rs.5,10,000

4.4 BREAK-EVEN POINT, PROFIT VOLUME RATIO, MARGIN OF SAFETY AND ANGLE OF INCIDENCE

Earning profit is the main objective of any business. Earning profit cannot be left on chance, rather it requires proper planning. For evaluating earning capacity of the business and for making plans, break even analysis is used by the financial manager.Under this analysis, revenues and costs of a firm in relation to sales volume are studied. In other words, break even analysis is a costing technique that helps managers of the business in profit planning.

Break-even Analysis attempts to study the revenue and cost in relation to sales volume of a business unit and to determine that point where sales revenue just equals to total costs. It is also important to know that in Cost Volume Profit Analysis. Break-even point is just one point indicating the volume at which sales revenue and total costs are equal. Thus, it refersto a system of determination of that level of activity where total sales just equal to total costs. This level of activity is generally termed as Break-even-point. At this point of activity, a producer neither earns any profit nor incurs any loss. That is why it is also called as "No profit no Loss Point" or "Zero Profit and Zero Loss" point.

In narrow sense, break-even-analysis limits it to the study of break-even-point. But, break-even-analysis is not limited merely to seeking the break-even point. In a broader sense, it refers to the study of relationship between cost, volume and profit at different levels of sales or production which in technical terminology is known as cost volume profit analysis. Cost volume profit analysis is a planning tool analysis the inherent relationship between price, structure and volume and profit. Some important definitions are given below:

1. According to Charles T Horngren, "The Break-even point is that point of sales volume where total revenues and total expenses are equal, it is also said as the point of zero profit or zero loss.

2. According to G. R. Growningshield, "Break-even-point is the point at which sales revenue equals the cost to make and sell the product and neither profit nor loss is reported."

Since, at Break-even point, total sales and total costs are equal resulting into no profit no loss, therefore, it can be shown with the help of equation as follows:

Sales = Variable Costs + Fixed Costs

or $S = VC + FC$

or $FC = S - VC$

or $VC = S - FC$

If sales exceed break-even point, profit arises and if sales fall below break-even point, loss emerges. Thus, BEP is also known as point at which loss ceases and above which profit begins.

ASSUMPTIONS OF BREAK-EVEN ANALYSIS

The break-even analysis is based upon the following assumptions:

(i) All elements of cost (i.e. production, administration and selling and distribution) can be classified into fixed and variable components.

(ii) Variable cost remains constant per unit of output irrespective of the level of output and thus fluctuates directly in proportion to changes in the volume of output.

(iii) Fixed cost remains constant at all volume of output.

(iv) Selling price per unit remains unchanged at all levels of output.

(v) Volume of production is the only factor that influences cost.

(vi) There will be no change in the general price level.

(vii) There is only one product or in case of multi-products, the sales mix remains unchanged.

(viii) There is synchronisation between production and sales.

(ix) Normally there is no change in productivity per worker.

(x) Suitable co-ordination is made possible in production and sales.

ADVANTAGES OF BREAK-EVENANALYSIS

Break-even-analysis plays an important role in solving a number of managerial problems. In addition to these break-even-analysis may also be used advantageously in studies mentioned below:

(i) Controlling the manufacturing, administrative, general and selling and distribution expenses.

(ii) Evaluating the promotional potentiality of a new project.

(iii) Forecasting the effect of price changes on profit and break-even-point,

(iv) Forecasting the effect of changes in wage rates on profit and break-even-point.

(v) Forecasting the ‘effect of changes in the size of plant and procedure on profit and break-even point.

(vi) Forecasting the effect of changes in the sales channels and methods on profit and break-even-point.

(vii) Examining the operating and financial leverage.

(viii) Comparing the profitability of two or more concerns.

(ix) Analysing the effect of taxation on profits.

(x) Analysing the effect of operating organisation and building structure on the operational economies of the business.

LIMITATIONS OF BREAK-EVEN-ANALYSIS

The break-even-analysis is a simple and useful concept. But it is based on certain assumptions, which have been discussed earlier. These assumptions limit the utility and general applicability of the break-even analysis. Therefore, the analysis should recognise these limitations and adjust data, wherever possible, to get meaningful results, the cost volume profit or break-even analysis suffers from the following limitations:

1. Cost Segregation (Separation): One of the most important prerequisites of the break-even analysis is that costs can be classified as fixed or variable. Some of the costs can be easily identified as fixed, such as rent of buildingor variable, such as direct material cost. But a large number of costs belong to the mixed category. Such costs, known as semi-variable or semi-fixed costs;consist of fixed as well as variable elements and are difficult to separate. Furthermore, some costs aredifficult to determine. For example, there are various methods of calculating depreciation. It is not easy todecide which method is the best.

2. Constancy of Fixed Costs: The assumption that total fixed costs remain constant over the entire volume range is not valid. If a firm has zero output, some of the fixed costs can certainly be reduced or eliminated. For example, some of the supervisors or executives can be dismissed and salaries can be reduced. On the other hand, if the company uses its idle capacity, additional fixed costs may be incurred. The conclusion is that fixed costs are constant over a relevantrange of activity and would increase in a step wise fashion.

3. Change in Unit Variable Cost: The variable cost per unit also does not remain constant and, therefore, total variable costs do not change proportionately to output. As a company increases its volume of operations, it needs more workers. The workers may be less efficient because of the lack of experience or training. If the company does not employ inefficient workers, it may have to put existing workers on overtime and pay costly overtime wages. Similarly, materials cost will be less due to purchase discount and other concessions if the company makes bilk purchases.

4. Change in Selling Price: Selling price hardly remains constant. Selling price may remain, constant under perfect competition. But in real market situations of monopolistic competition or oligopoly, selling price will have to be reduced to increase the sales volume. Thus, sales revenue will not change in direct proportion with output.

But the break-even analysis is not totally a useless concept. The activities of a business will fluctuate within a limit range, which is called the relevant range. Within the relevant range, it can be assumed that, for all practical purposes, fixed costs are constant and variable costs vary proportionately with output.

5. Applicability of Multi-product Firm: The break-even analysis is perhaps best suited for a firm producing a single product. In case of multi-product firm, the break-oven point for the firm can be calculated assuming some specific product mix. The break-even point would be lower if the product mix is weighted in favour of a higher profit product or would be higher if a larger portion of sales are of lower profit product. If it is desired to calculate the break-even point for each product, then the firm’s fixed costs will have to be allocated to each product. Allocation of fixed costs poses a problem in practice. Because of the difficulty of fixed costs allocation, meaningful break-even point cannot be calculated for each product in case of multi-product firm, Furthermore, the break-even .point for the firm as a whole is valid only if the sales mix is constant.

6. Short-term Focus: The Break-even analysis is a short-term technique of profit planning. It cannot be used for long-range profit planning and may lead to wrong decisionsfrom long-run point of view. For example, a company may wish to increase its productive capacity. The added capacity may not yield enough revenue in the first year. Thus, in terms of break even analysis, the company may drop the idea of adding to its productive capacity. But in fact, it may be beneficial to add the capacity as it may very profitable over a long period of time. This limitation warms the analyst to supplement the break-even technique by the long-run techniques, such as discounted cash-flow.

7. Static: The assumptions of the break-even analysis make it a static measure of a dynamic process. It shows the relationship between costs, volume and profit of a firm at a given point of time. The break-even chart used for analysis represents static sales and costs line which fails to predict future revenues and costs. It is unrealistic to assume that price level is constant and that whatever is manufactured in a period is sold.

Although the break-even analysis suffers from a number of limitations, yet it remains an important tool of profit planning. What is needed is that the financial analyst should understand the underlying assumptions and their corresponding limitations and adjust his data appropriately to suit his needs.

COMPUTATION OF BEP

(i) B.E.P. in units

(ii) B.E.P. in Rupees

(iii) B.E.P. capacity

(iv) B.E.P. Ratio .

(v) Composite B.E.P.

1. B.E.P. in Units: This is also known as break-even point in quantity. This is calculated only when per unit selling price and per unit variable cost or per unit contribution areknown. This is calculated with the help of following formula:

$$\text{B.E.P.} = \frac{\text{Fixed Cost}}{\text{Selling Price p.u. } - \text{Variable Cost p.u}}$$

$$= \frac{\text{FC}}{\text{SP (p.u.)} - \text{VC (p.u)}}$$

OR

$$= \frac{\text{Fixed Cost}}{\text{Contribution p.u}}$$

$$= \frac{\text{FC}}{\text{C (p.u)}}$$

Where,

C = Contribution

and Contribution (p.u) = SP (p.u.) – VC (p.u.)

2. B.E.P. in Rupees:

(a) When Selling Price p.u. and Variable Cost p.u. are known:

$$\text{B.E.P} = \frac{\text{FC}}{1 - \frac{\text{VC}}{\text{SP}}} \qquad \text{OR} = \frac{\text{FC} \times \text{SP}}{\text{C (p.u.)}}$$

Where,

C = Contribution

OR

B.E.P. = B.E.P in units × SP

(b) When Selling Price p.u. and Variable Cost p.u. are not known:

B.E.P. = $\frac{FC \times SP}{SP - VC}$ OR $\frac{FC \times SP}{C}$ OR $\frac{FC}{1 - \frac{VC}{SP}}$

OR

B.E.P = Actual Sales – Margin of Safety

Where,

FC = Total fixed Cost

VC = Total variable Cost

SP = Total selling price

C = Contribution

Margin of Safety % = $\frac{\text{Sales} - \text{BEP Sales}}{\text{Sales}} \times 100$

OR

$= \frac{\text{Profit}}{\text{P/V Ratio}}$, When profit is given

Where P/v Ratio = $\frac{C}{SP} \times 100$

3. B.E.P. Capacity: Sometimes Break-even point is expressed as percentage of capacity. This is done by dividing BEP in units or in rupees by total installed capacity and multiplied by 100 just to present in percentage form. Thus,

B.E.P. Capacity = $\frac{\text{B.E.P.in units}}{\text{Total capacity in units}} \times 100$

OR

$= \frac{\text{B.E.P.in Rupees}}{\text{Total Capacity in Rupees}} \times 100$

4. B.E. Ratio: This is the ratio between break-even sales and actual sales made by the business concern. It is calculated with the help of following formula:

$$\text{B.E. Ratio} = \frac{\text{B.E.P.Sales}}{\text{Actual Sales}} \times 100$$

Note: It may be expressed in the form of rate also.

5. Composite B.E.P.: It is also known as combined BEP or overall BEP and is calculated only when the business concern is dealing in several products. Such composite break-even point may be calculated with the help of following formula:

$$\text{Composite B.E.P. in (Rs.)} = \frac{\text{Total F.C.}}{\text{Composit P/V Ratio}}$$

$$= \frac{\text{Total FC} \times \text{Total Sales}}{\text{Total Contribution}}$$

Note: It is always calculated in rupees.

Example 4.

Ascertain the B.E.P. in Units from the following:

Selling Price (SP)	Rs. 20 p.u.
Variable Cost (VC)	Rs.12 p.u.
Fixed Costs (FC)	Rs.20,000
Units Produced	8000 units

Solution:

$$\text{B.E.P. (Units)} = \frac{\text{FC}}{\text{SP} - \text{VC}}$$

Where, FC = Total Fixed Cost

SP = Selling Price p.u.

VC = Variable Cost p.u.

Now, putting the value in formula:

$$\text{B.E.P. (Units)} = \frac{20{,}000}{20-12}$$

$$= \frac{20{,}000}{8} = 2{,}500 \text{ Units.}$$

PROFIT VOLUME RATIO (P/V RATIO)

The profit volume ratio, which is also called the ‘contribution ratio’ or ‘marginal ratio’, expresses the relation of contribution to sales. Profit volume ratio seems to be misleading term because profit here does not indicate profit but represents contribution. Similarly, volume does not signify the volume of sales but denotes value of sales. As pointed out earlier, contribution is the difference between sales revenue and marginal cost. Since it is not affected by any fixed expenses, profit volume ratio remains constant for varying level of production. Profit volume ratio can be expressed either in percentage or in turnover (rate). Normally it is expressed as percentage.

The profit volume ratio, which establishes the relationship between contribution and sales is of vital importance for studying the profitability of operations of a business. It reveals the effect on profit of changes in the volume. P/V ratio can be used to find out which product, department or process is more profitable. Higher the P/V ratio, more will be the profit and lower the P/V ratio, lesser will be the profit. Thus, every management aims at increasing the P/V ratio. The ratio can be increased by increasing the contribution, this can be done by (i) Increasing the selling price p.u. (ii) reducing the variable cost (iii) changing the sales mixture and selling more profitable products for which the P/V ratio is higher.

This ratio can be calculated in the following ways:

(1) $$\text{P/V Ratio} = \frac{C}{SP} \times 100$$

where, C = Total Contribution, (SP –VC)

SP = Total Sales Price

With the help of P/V Ratio B.E.P. can also be calculated for which the following formula is adopted:

$$\text{B.E.P.} = \frac{\text{FC}}{\text{P/V Ratio}}$$

(2) $$\text{P/V Ratio} = \frac{\text{SP} - \text{VC}}{\text{SP}} \times 100$$

(3) When sales and profits are given for two periods:

$$\text{P/V Ratio} = \frac{\text{Changes in Profit}}{\text{Changes in Sales}} \times 100$$

(4) $$\text{P/V Ratio} = \frac{\text{Profit}}{\text{Margin of Safety}} \times 100$$

(5) $$\text{P/V Ratio} = \frac{\text{FC}}{\text{B.E.P. in Rs.}}$$

(6) $$\text{P/V Ratio} = 100 - \left\{\frac{\text{VC} \times 100}{\text{SP}}\right\}$$

When ratio has to be calculated in rate:

(7) $$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{SP}} \text{ Or } 1 - \frac{\text{VC}}{\text{SP}}$$

(8) Composite P/V Ratio = $\frac{\text{Total Contribution}}{\text{Total Sales}} \times 100$

Example 5.

From the following information, calculate P/V Ratio:

Year	Sales	Profit
	Rs.	Rs.
2011	2,00,000	30,000
2012	3,00,000	50,000

Solution:

$$\text{P/V Ratio} = \frac{\text{Changes in Profit}}{\text{Changes in Sales}} \times 100$$

$$= \frac{(50{,}000 - 30{,}000)}{(3{,}00{,}000 - 2{,}00{,}000)} \times 100$$

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

MARGIN OF SAFETY

The excess of actual or budgeted sales over the break-even sales is known as the margin of safety. It is difference between actual sales minus sales at break-even point. It represents the amount by which sales revenue can fall before a loss is incurred. As at break-even point there is no profit no loss, sales beyond the break-even point represents margin of safety because any sales above the break-even point will give some profit. Thus,

Margin of Safety = Total Sales – Sales at BEP

For example, actual sales are Rs.5,00,000 and break-even sales are Rs.4,00,000, then margin of safety will be Rs.1,00,000 i.e., Rs.5,00,000 – Rs.4,00,000.

Margin of safety can also be expressed in percentage with the help of above example, margin of safety in percentage can be calculated as follows:

$$\text{MOS (\%)} = \frac{1{,}00{,}000}{5{,}00{,}000} \times 100 = 20\%$$

Significance of Margin of Safety: Margin of Safety is an important indicator of the strength of the business. If the margin of the safety is high, the position of the business will be sound and it can withstand any storm of depression, rather it will have more opportunities to earn profit. If the margin of safety is low a profitable position may be converted into loss position within a short period of time, the business will succumb to the storm of business without any sort of resistance. This margin of safety serves as a cushion in between profit position and loss position.

In case the margin of safety is too low, it can be improved by increasing the sales or reducing the break-even point sales or by both. Actual sales can be increased by increasing Selling price, by increasing quantity sold through special sales campaign by eliminating unprofitable line, by changing the product designs etc. However, increasing Selling Price with same quantity of goods sold is not an easy task.

In brief, the margin of safety can be improved by taking the following steps:

(i) By increasing the level of production,

(ii) By increasing the selling price

(iii) By reducing fixed cost

(iv) By reducing variable cost

(v) By substituting contribution by changing the sales mix or by dropping unfavourable products.

ASCERTAINMENT OF MARGIN OF SAFETY

(1) Margin of Safety (Units) = Actual Sales (Units) – Sales at B.E.P. (Units)

(2) Margin of Safety (Rs.) = Actual Sales (Rs.) – Sales at B.E.P. (Rs.)

(3) Margin of Safety (%) = $\frac{\text{Actual Sales} - \text{Sales at B.E.P.}}{\text{Actual Sales}} \times 100$

(4) Margin of Safety when the amount of profit is given:

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

Example 6.

Calculate B.E.P. from the following information and ascertain the margin of safety:

	Rs.
Fixed Costs for the year	80,000
Variable Cost p.u.	4
Sales for the year	2,00,000
Selling Price p.u.	20

Solution:

Sales in Units = $\frac{Sales\ for\ the\ year}{Selling\ price\ p.u.} = \frac{2,00,000}{20}$

Contribution (p.u.) = SP – VC = 20 – 4 = Rs.16

B.E.P. (Units) = $\frac{\text{FC}}{\text{Contribution (p.u.)}}$

$= \frac{80,000}{16} = 5,000$ units

Margin of Safety (Units) = Sales (Units) – B.E.P. (Units)

= 10,000 – 5,000 = 5,000 Units

B.E.P. in (Rs.) = $\frac{\text{FC}}{\text{C.(p.u.)}} \times$ SP (p.u.)

$= \frac{80,000}{16} \times 20 =$ Rs.1,00,000

∴ Margin of Safety (Rs.) = Actual Sales – Sales at B.E.P.

= 2,00,000 – 1,00,000 = Rs.1,00,000

Example 7.

The following information are available:

Fixed expenses	Rs.25,000
Variable expenses	Rs.20 p.u.
Selling price	Rs.30 p.u.

Calculate the following:

(1) B.E.P in Units

(2) Sales volume to earn a profit of Rs.25,000

(3) What additional units would be necessary to increase the profit by Rs.10,000?

Solution:

Calculation of Contribution p.u.	Rs.
Selling Price p.u.	30
Less: Marginal Cost P.u.	20
Contribution p.u.	10

1. B.E.P. (Units) = $\frac{\text{Fixed Costs}}{\text{Contribution p.u}}$

$= \frac{25,000}{10}$ = 2,500 Units

2. Units to earn a profit of Rs.25,000:

SP = $\frac{\text{FC+Profit}}{\text{Contribution p.u.}}$

$= \frac{25,000+25,000}{10}$ = 5,000 Units

3. Units to earn a profit of Rs.25,000 + 10,000 = Rs.35,000

SP = $\frac{\text{FC+Profit}}{\text{Contribution}}$

$= \frac{25,000+35,000}{10} = \frac{60,000}{10} = 6,000$units.

Example 8.

Calculate from the following data:

(1) B.E.P. in Rs.

(2) Number of units that must be sold to earn a profit of Rs.60,000 p.a.

Sales Price		Rs.20 p.u.
Variable Manufacturing Cost	Rs.11 p.u.	
Variable Selling Cost	Rs.3 p.u.	
Fixed Factor Overhead		Rs.5,40,000 p.a.
Fixed Selling Cost		Rs.2,52,000 p.a.

Solution:

1. B.E.P. (Rs.) = $\frac{\text{FC} \times \text{SP}}{\text{SP}-\text{VC}}$

Where,

FC = Fixed Cost (Total)

SP = Selling Price (p.u.) = Rs.20

VC = Variable Cost (p.u.) = Rs.14 i.e. (11 + 3)

∴ B.E.P. = $\frac{(5,40,000+2,52,000)\times 20}{20-14}$

$$= \frac{7,92,000 \times 20}{6}$$

= Rs.26,40,000

or B.E.P. in units = 26,40,000 ÷ 20

= 1,32,000 Units

2. Desired Sales (units) to earn a profit of Rs.60,000 p.a.

$$\therefore \text{ Desired Sales (units)} = \frac{\text{FC+Desired Profit}}{\text{Contribution (p.u.)}}$$

$$= \frac{7,92,000+60,000}{(\text{SP} - \text{VC})\text{ p.u.}}$$

$$= \frac{8,52,000}{6}$$

= 1,42,000 Units

Therefore, sales to earn a profit of Rs.60,000 = 1,42,000 Units or Rs.28,40,000 i.e. (1,42,000 Units @ Rs.20 each)

ANGLE OF INCIDENCE

The angle, which results due to intersection of total cost line and sales line, is known as angle of incidence. It indicates the rate of profit or sales. It is somewhat the same what we have termed P/V ratio in mathematical form of Break-even analysis. If this angle is higher, it is presumed that the rate of profit on sales is higher. Normally, a business concern having higher margin of safety and greater angle of incidence is said to be in a better position. If angle of incidence is higher, BEP will come down leading to increase in Margin of Safety. It can easily be seen that angle of incidence can be raised either by raising the slope of sales line or by lowering the slope of total cost line or by both.

4.5 CHECK YOUR PROGRESS

A. State whether the following statements are True or False:

1. Product costs are those costs which become a part of production cost.

2. Marginal costing takes into account only fixed costs in computing the cost of production.
3. Marginal costing takes in to account only variable costs which remain the same per unit of product irrespective of the volume of output.
4. Break-even point is just one point indicating the volume at which sales revenue and total costs are equal.

B. Fill in the blanks:

1. The _________expresses the relation of contribution to sales.
2. The excess of actual or budgeted sales over the break-even sales is known as the__________.
3. The angle, which results due to intersection of total cost line and sales line, is known as __________.

4.6 SUMMARY

Marginal cost is the cost of one unit of product or service which would be avoided if that unit were not produced or provided. Marginal costing is the accounting system in which variable costs is charged to cost units and fixed costs of the period are written-off in full against the aggregate contribution. Its special value is in decision-making. Contribution or gross margin is the difference between sales and the marginal cost of sales. Absorption costing is a method of costing by which all direct costs and applicable overheads are charged to products or cost centers for finding out the total cost of production. Absorbed cost includes production cost as well as administrative and other costs. It is a principle whereby fixed as well as variable costs are allotted to cost units, i.e. full costs are charged to production. Break-even analysis is the categorization of costs into variable and fixed elements and their relationship with sales and profits. Margin of safety is the difference between the actual sales and sales at break-even point.

4.7 KEYWORDS

Marginal Costing: It is a costing system where products or services and inventories are valued at variable costs only.

Absorption Costing: A method of costing by which all direct cost and applicable overheads are charged to products or cost centers for finding out the total cost of production.

Contribution: Contribution or contribution margin is the difference between sales revenue and total variable.

Profit Volume Ratio: This ratio shows the proportion of sales available to cover fixed costs and profit.

Break-even Point (BEP): The level of sales where an entity neither earns profit nor incurs loss.

4.8 SELF ASSESSMENT TEST

1. What do you mean by Break-Even Analysis? Discuss its assumption and limitations.
2. Discuss the importance of B.E.P. analysis in managerial decisions.
3. What do you mean by Profit-Volume Ratio (P/V Ratio)? How does it help in profit planning? Explain with suitable example.
4. The following information relates to Awkash Ltd. for the year 2012:

	Cost P.u.
	Rs.
Direct materials	60
Direct Labour	30
Variable Overhead	15
Selling Price p.u.	120
Fixed Costs	7,500
Units Sold 2012	3,000 (units)

Find B.E.P. in Rupees and BEP Ratio

5. Nitu Ltd. manufactures a commodity. The following data are available for two successive years:

	2011	2012
	Rs.	Rs.
Sales	3,00,000	3,60,000
Fixed Costs	90,000	1,20,000

Variable Costs	1,50,000	2,00,000

The directors are interested to know the P/V Ratio, B.E.P. and M.O.S. are its percentages.

6. The following information are related to Bharat Cycle Ltd.:

	Per Cycle Rs.
Materials	300
Labour	100
Variable Overhead	100
Fixed Overhead	250
Profit	250
Selling Price Rs.	1,000

Above information are based on the manufacturing of 1,00,000 cycles p.a. The company expects that due to competition they will have to reduce selling price, but they want to keep the profit intact. How many cycles will have to be manufactured to get the same amount of profit, if:

(1) The Selling price is reduced by 10%.

(2) The Selling Price is reduced by 20%.

7. Information regarding Sahani Ltd. are available as follows:

	Rs.
Sales	2,00,000
Less: Variable Costs	1,50,000
Contribution	50,000
Less: Fixed Costs	30,000
Profit	20,000

You are required to find out:

(1) P/V Ratio

(2) Profit on the sale of Rs.3,00,000

(3) Required sales to earn a net profit of Rs.30,000.

4.9 ANSWERS TO CHECK YOUR PROGRESS

A. 1. True
   2. False
   3. True
   4. True

B. 1. profit volume ratio
   2. margin of safety
   3. angle of incidence

4.10 REFERENCES/SUGGESTED READINGS

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Subject: Management Accounting	
Course code: BCOM 501	**Author: Prof. M. C. Garg**
Lesson no. :05	

ANALYSIS OF FINANCIAL STATEMENTS-I

(COMPARATIVE STATEMENTS, COMMON SIZE STATEMENTS AND TREND ANALYSIS)

Structure

5.0 LEARNING OBJECTIVES

After going through this lesson, you will be able to

- Define the meaning of analysis and interpretation.
- Describe the objectives, importance and limitations of financial analysis.
- Make a critical appraisal of various methods of analysis and interpretation.

5.1 INTRODUCTION

Financial statement analysis is the process of examining relationships among financial statement elements and making comparisons with relevant information. It is a valuable tool used by investors and creditors, financial analysts, and others in their decision-making processes related to stocks, bonds, and other financial instruments. The goal in analyzing financial statements is to assess past performance and current financial position and to make predictions about the future performance of a company. Investors who buy stock are primarily interested in a company's profitability and their prospects for earning a return on their investment by receiving dividends and/or increasing the market value of their stock holdings. Creditors and investors who buy debt securities, such as bonds, are more interested in liquidity and solvency: the company's short and long-run ability to pay its debts. Financial analysts, who frequently specialize in following certain industries, routinely assess the profitability, liquidity, and solvency of companies in order to make recommendations about the purchase or sale of securities, such as stocks and bonds.

5.2 MEANING OF ANALYSIS AND INTERPRETATION

Analysis is the process of critically examining the accounting information given in the financial statements. For the purpose of analysis, individual items are studied, their inter-relationship with other related figures is established, 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 serves the interests of shareholders, debenture holders, potential investors, creditors, bankers, legislators, journalists, politicians, researchers, stock exchanges, taxation authorities and economists. The analysis of financial statements makes it simple, intelligible and meaningful for all concerned parties. Financial statements are split into simple, statements by the process of rearranging, regrouping and the calculation of various ratios. The analysis simplifies, summarises and systematizes monotonous figures.

Financial Analysis in this way is the purposeful and systematic presentation of financial statements. Various items of income and position statements are compared and their inter-relationship is established, Financial analysis, as such, presents meaningful expression of the relationship between different items, such as, relationship between gross profit and net sales. Suppose the Gross Profit of the firm isRs.18,000 and Net Sales are worthRs.90,000. At the same time the gross profit of the next firm isRs.30,000 and net sales worthRs.1,20,000. If we analyse the figures, we come to know that the gross profit margin of the firm first is 20%, i.e. $\frac{18000 \times 100}{90,000}$and the second firm is 25%, i.e.,$\frac{30,000}{1,20,000} \times 100$. As such, analysis shows that operational efficiency of the second firm is better than the first firm.

According to Myers, "Financial statements analysis is largely a study of relationship among the various financial factors in a business as disclosed by a single set of statements and a study, of the trend of these factors as shown in a series of statements.

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 of other similar firms.

MEANING OF INTERPRETATION

The work of interpretation comes after the work of analysis. But analysis and interpretation are closely related. Interpretation is not possible without analysis and without interpretation analysis has no value. 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. 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.

Analysis and interpretation both are different terms, but commonly they are used in same sense, In the words of *Kennedy and Memullar,* “The analysis and interpretation of financial statements are an attempt to determine the significance and meaning of the financial statements data so that a forecast may be made of the prospects for future earnings, ability to pay interest and debt maturities (both current and long-term) and probability of a sound dividend policy.”

5.4 OBJECTIVES, IMPORTANCE AND LIMITATIONS OF FINANCIAL ANALYSIS

Financial analysis is helpful in assessing the financial position and profitability of a concern. This is done through comparison by ratios for the same concern over a period of years. Accounting ratios calculated for a number of years show the trends of the change of position, i.e., whether the trend is upward or downward or static. The ascertainment of trend helps us in making estimates for the future. For example, ratios of gross profit to sales for the last five years indicate a rising trend, we can safely estimate that ratio of gross profit to sales for the next year will also rise. Keeping in view the importance of accounting ratios the accountant should calculate the ratios in appropriate form, as early as possible for presentation to the management for managerial decisions.

The main objectives of analysis of financial statements are as follows:

(i) To assess the present and future earning capacity or profitability of the concern.

(ii) To assess the operational efficiency of the concern as a whole and of its various parts or departments.

(iii) To assess the short-term and long-term solvency of the concern for the benefit of the debenture holders and trade creditors,

(iv) To assess the comparative study in regard to one firm with another firm or one department with another department.

(v) To assess the possibility of developments in the future by making forecasts and preparing budgets.

(vi) To assess the financial stability of a business concern.

(vii) To assess the real meaning and significance of financial data, and

(viii) To assess the long-term liquidity of its funds.

IMPORTANCE OF FINANCIAL ANALYSIS

Financial statements are prepared at a certain point of time according to established conventions. These statements are prepared to suit the requirements of the proprietor. It is, therefore, necessary to analyse financial statements to measure the efficiency, profitability, financial soundness and future prospects of the business concern. Financial analysis serves the following purpose:

1. In Judging the Operational Efficiency of the Business: It is very significant that the company must know the operational efficiency of its management. We analyse the financial statements, match the amount of manufacturing, selling, distribution and financial expenses of the current year with the corresponding expenses of the previous year and assess the managerial efficiency of the business. We can judge the operational efficiency of the business by calculating profitability ratios.

2. In Measuring Short and Long-term Financial Position: The business must know its financial soundness. It should satisfy itself that its current resources are sufficient to meet its current liabilities. We can calculate current and liquid ratios or compare current assets and current liabilities to ascertain short-term financial soundness. Long-term financial position can be measured by calculating debt-equity, proprietory and fixed assets ratios. The results of the financial analysis may be studied and corrective steps can be taken, if necessary.

3. Indicating the Trend of Achievements: Financial statements of the previous years can be compared and the trend regarding various expenses, purchases, sales, gross profit and net profit can be ascertained, cost of goods sold, values of assets and liabilities can be compared and the future prospects of the business can be indicated.

4. In Assessing Growth Potential of the Business: The trend and dynamic analysis of the business provides us sufficient information indicating the growth potential of the business of the trend predicts gloomy picture, effective measures can be applied as corrective measures of cost of production is rising without corresponding increase in sales price, efforts should be made to reduce cost of production.

5. In Measuring the Profitability: Financial statements show the gross profit, net profit and other expenses. The relationship of these items can be established with sales, gross profit, net profit, expenses and operating ratios maybe calculated and the profitability of the business is ascertained, In case of improving profitability ratios, the causes responsible for the performance should be reinforced.

6. Intra-firm and Inter-firm Comparison of the Performance: Analysis of financial statements can be made with the previous year's performance of the same firm and also with the performance of other firms. Intra-firm analysis provides an opportunity of self-appraisal, where as inter-firm analysis presents the operational efficiency of the firm as compared to other firms. Comparison helps us in detecting our weaknesses and applying corrective measures.

7. Forecasting, Budgeting and Deciding Future Line of Action: Analysis of financial statements predicts the growth potential of the business. Comparison of actual performance shows our shortcomings. The analysis provides sufficient information regarding the profitability, performance and financial soundness of the business. On the basis of the information, we can make effective forecasting, budgeting and planning.

8. Simplified, Systematic and Intelligible Presentation of Facts: Analysis of financial statements is an effective tool for simplifying, systematising and summarising the monotonous figures. An average person can draw conclusion from these ratios. The facts can be made more attractive by graphs and diagrams which can be easily understood.

9. Judging the Solvency of the Concern: Creditors are always interested in knowing the solvency of the business to repay their loans. We will have to look into the following facts to ascertain liquidity:

(i) Whether current assets are sufficient to meet current liabilities.

(ii) Proportion of liquid assets and current assets,

(iii) Future prospects of the business,

(iv) Whether debentures and other loans are secured or not.

(v) Managerial efficiency of the company.

It is clear from the above discussion that there are various objectives of financial analysis and it is used by the various parties for different purposes.

LIMITATIONS OF FINANCIAL ANALYSIS

In spite of all significance of analysis of financial statements as discussed above, it has the following limitations:

1. Suffering from the Limitations of Financial Statements: Financial statements suffer from a variety of weaknesses, Balance sheet is prepared on historical record of the value of assets, it is just possible that assets shown in balance sheet may not have the same value. Financial statements are prepared according to certain conventions at a point of time, whereas the investor is concerned with the present and future of the company. Certain assets and liabilities are not disclosed by balance sheet. Personal judgement plays an important role in determining the figure of the balance sheet. In other words, we can say that balance sheet cannot be said to have a complete accuracy. Financial statements suffer from these weaknesses, so analysis based upon these statements cannot be said to be always reliable.

2. Absence of Standard Universally Accepted Terminology: Financial accounting is not an exact science. It does not have standard, universally accepted terminology. Different meanings are given to a particular term, There are different methods for charging depreciation. Interest may be charged on different rates, In this way, there is sufficient possibility of manipulation and the financial statements have to suffer. As a result financial analysis also proves to be defective.

3. Ignoring Price-level Changes: The results shown by financial statements may be misleading, if price-level changes have not been accounted for. The ratio may improve with the increase in price, whereas the actual efficiency may not improve. Ratios of the two years will not be meaningful for comparison, if the prices of commodities are different. Changes in price affect cost of production, sales and value of assets as a consequence comparability of ratios also suffers.

4. Ignoring Qualitative Aspect: Financial analysis does not measure the qualitative aspect of the business. It does not show the skill, technical know-how and the efficiency of it employees and managers. It has the quantitative measurement of the performance. It means that analysis of financial statements measures only one sided performance of the business. It completely ignores human source. Thus, results served by analysis of financial statements can never be up-to-the mark.

5. Misleading Results in the Absence of Absolute Data: Results shown by financial analysis may be misleading in the absence of absolute data. We cannot have the idea of the size of the business. Increase in sales fromRs.40,000 toRs.80,000 shows that sales has doubled, In case of other firm increase of sales fromRs.1,00,000 toRs.2,00,000 also shows that the sales has doubled but the size of the firm is quite different. Profitability ratio of two firms may be the same, but magnitude of their business may be quite different.

6. Financial Analysis is only a tool, not the final Remedy: Analysis of financial statement is a tool to measure the profitability, efficiency and financial soundness of the business. It should be noted that personal judgement of the analyst are more important in financial analysis. We should not rely on single ratio. Before reaching any conclusion, we should calculate several ratios. Accountant should not be biased in the calculation of ratios. It should not be calculated to prove the personal contention.

7 Financial Analysis Spottes the Symptoms but does not arrive at Diagnosis: Financial analysis shows the trend of the affairs of the business, it may spot symptoms of financial unsoundness and operational inefficiency but that cannot be accepted. A final decision in this regard will require further investigation and thorough diagnosis.

5.4 METHODS OF ANALYSIS AND INTERPREATION

Following are the methods of analysis and interpretation of financial statements:

5.4.1 Trend Analysis

5.4.2 Comparative Financial Statements

5.4.3 Common-size Statement

5.4.4 Funds Flow Analysis

5.4.5 Ratio Analysis

5.4.6 Cash Flow Statement

5.4.1 TREND ANALYSIS

Trend analysis is also an important tool of analysis and interpretation of financial statements. Trend means tendency in general term. The Comparative Financial Statements study changes which have occurred in each item of the Balance Sheet and Profit and Loss Account within a period of two years but do not indicate the trend of progress during past years. Trend analysis discloses changes in the financial and operating data of financial statements between specific periods in relation to any past year called the base year and makes possible for the analyst to form an opinion about the favourable or unfavourable tendencies as reflected by the accounting data. This method of analysis is immensely helpful in making comparative study of financial statements for several years. It is one of direction upward or downward and involves computation of percentage relationship that each item of the statement bears to the same item in the base year. Any year may be taken as base year earliest or latest or any intervening year. It is usually the earliest year. The trend analysis of business operations and other financial data may be done in any of the following ways:

(1) Trend Percentage

(2) Trend Ratios

(3) Graphic or Diagrammatic Presentation

COMPUTATION OF TREND PERCENTAGE

While analysing changes, first the information contained in the financial statements is tabulated and taking the earliest year or any one year as base, the percentage, increase or decrease for other years is calculated. The percentages are called trend percentages which give an idea about the changes in comparison to previous years. For example, value of sales for the five years are given as follows:

Year (31st March)	2011	2012	2013	2014	2015
Sales (inRs.)	1,50,000	1,80,000	1,30,500	1,65,000	1,87,500

If we measure the changes in the sales value for other years taking 2011 as the base year the result will be as follows:

Trend Percentage

31st March	Sales (Rs.)	Increase/Decrease in comparison to 2011	Increase or decrease in (%) in comparison to 2011 $\frac{Increase/Decrease}{Sales\ for\ the\ base\ year} \times 100$
2011	1,50,000	–	–

2012	1,80,000	+30,000	–20%
2013	1,30,500	–19,500	–13%
2014	1,65,0000	+15,000	+10%
2015	1,87,500	+37,500	+25%

This shows percentage increase or decrease in the sales value in relation to the base year, but the method is not good in the sense that it contains plus (+) and minus (–) signs. It is better to convert all the items of the statements into percentages taking one year as base. They are also called trend ratios.

Precautions in Calculating Trend Percentages: While calculating trend percentages the following precautions should be taken into consideration:

(i) The base year should be selected carefully. It should be normal year free from any unexpected event.

(ii) Trend percentages should be calculated only for items having logical relationship except when all the items of the financial statements are to be converted into percentages.

(iii) The accounting policies and practices should be kept consistent otherwise comparison will be affected adversely.

(iv) Trend percentages should be studied after considering the absolute figures on which they are based. Otherwise they may give misleading results,

(v) It is better to adjust the current years figures in the light of the price level changes so that comparison may be realistic.

TREND RATIOS

Trend percentage method is not considered to be suitable for comparison purposes because plus (+), minus (–) signs are used under it. Hence, trend ratio method is considered more suitable than this method. The calculation of trend ratio involves the arithmetical relationship which each item of several years bears to the same item of the base year. One particular year is taken as base and the value of each item is regarded equal to 100 and the values of other years are converted in the same ratio. This method is also used while preparing index numbers. The trend ratios in the following example will be as follows

Year	2010	2011	2012	2013	2014
Value of Stock	20,000	25,000	24,000	15,000	22,000
Trend Ratios	100	125	120	75	110

The above example clearly shows that trend ratios are more useful and meaningful for the study of changes in various items of financial statements.

However, in order to have a better use of trend ratio towards forming a definite opinion it is essential that the trend ratios of one item must be compared with the trend ratios of another item must be compared with the trend ratios of another item logically committed with each other such as stock and sales, sales and expenses etc. For example we may assume that the sales of the years for which stock was given are as follows:

Year	2010	2011	2012	2013	2014
Sales (Rs.)	1,80,000	2,00,000	1,90,000	1,60,00	2,20,000
Trend Ratio	100	111	106	89	122
Trend Ratio of Stock as					
Calculated above	100	125	120	75	110

Now if we look into the trend ratios of two variables, i.e., stock and sales, it will be evident that in the year 2011 stock has increased by 25% while sales has gone up by 11% as compared to 2010. It is something significant which needs the management attention as stock should not increase with the decrease in sales. In this way, if trend ratios of connected items are studied, significant matters may be revealed.

Example 1.

From the following information, interpret the results of operations of a manufacturing concern using Trend Ratio:

	Years		
	2012	2013	2014
Sales	Rs. 1,50,000	Rs. 1,30,000	Rs. 1,00,000

Cost of Goods Sold	80,000	60,000	50,000
Gross Profit	70,000	70,000	50,000
Selling Expenses	20,000	10,000	10,000
Net Operating Profit	50,000	60,000	40,000

Solution:

CALCULATION OF TREND RATIO

(When 2012 = 100)

	Years		
	2012	2013	2014
	Rs.	Rs.	Rs.
Sales	100	87*	67**
Cost of Goods Sold	100	75	63
Gross Profit	100	100	71
Selling Expenses	100	50	52
Net Operating Profit	100	120	80

Hints : * $\frac{1,30,000}{1,50,000} \times 100 = 87$ ** $\frac{1,00,000}{1,50,000} \times 100 = 67$

And on the basis of this other values can also be ascertained.

Interpretation: In comparison to 2012, in the year 2013 sales volume, cost of goods sold, selling expenses have decreased, gross profit is remained constant, whereas, net operating profit has increased. On the other hand, in the year 2014 Sales volume, Cost of Goods Sold, Gross Profit, Selling Expenses and Net Operating Profit etc. have all decreased because cost of goods sold has comparatively less decreased in comparison to sales volume. Thus the position of the company is not satisfactory.

Example 2.
Calculate the Trend Ratios from the following figures of X Ltd. Taking 2010 as the base and interpret them: (Rs. in Lakhs)

Years	Sales	Stock	Profit before Tax
2010	1,881	709	321
2011	2,340	781	435
2012	2,655	816	458
2013	3,021	944	527
2014	3,768	1,154	672

Solution: **TREND RATIO**

(Base year 2010 = 100)

	Sales		Stock		Profit before tax	
	Amount (InRs. Lakhs)	Trend %	Amount (InRs. Lakhs)	Trend %	Amount (InRs. Lakhs)	Trend %
2010	1,881	100	709	100	321	100
2011	2,340	124	781	110	435	136
2012	2,655	141	816	115	458	143
2013	3,021	161	944	133	527	164
2014	3,768	200	1,154	162	672	209

Hint: Trend Percentage = $\frac{Current\ Year}{Base\ year} \times 100$

Interpretation: The study of the above given statement of Trend percentage reveals that:

(i) The sales of the firm has continuously increased over a period of five years commencing from 2010. However, there has been a substantial increase in the amount of sales in the year 2014 when it increased by 39%.

(ii) The trend of stock is also upwards. Although the increase in this item has been constant yet in 2014, the increase has been exceptionally high.

(iii) The profits of the firm has increased at much higher rate in comparison to increase in sales and stock during the period under study.

The overall analysis of the financial items indicates that the firm is doing well and therefore, its financial position is found to be good.

IMPORTANCE OF TREND ANALYSIS

Trend analysis occupies an important place in the financial analysis of the financial statements due to the following merits:

1. Comparative Study: The trend analysis is of immense help in comparative study of different variables of the financial statements for several years. Such analysis is very significant from the point of view of forecasting and budget.

2. Brevity and Readability: The method of trend analysis is useful for the management and also the common man since by substitution of percentage for large amounts the brevity and readability are achieved.

3. Direction of Changes: The trends clearly reflect the increase or decrease in the various facts of business from the past to the present or from the year to year. The direction of change can be even more clearly represented by graphs and diagrams, where the change can be noted even with glimpse.

4. Easy to Understand and easy to Calculate: The method of analysis and the results obtained can be easily understood by common man. Moreover, the calculations are not complex as trend percentage or ratios can be easily calculated by dividing the current years figure by the base years figure and multiplied by 100. This is a method which is most appropriate in. calculating various index numbers.

5. Less Chances of Errors: There is less chances of errors under this method, because results obtained by percentage changes of data can be compared with absolute changes.

LIMITATIONS OF TRENDS ANALYSIS

While analysing the financial statements through trend percentages and trend ratios, the following limitations must be taken into consideration:

1. No Significance of Single Percentage or Ratio: The trend ratio or percentage of a single item has no significance in itself. We can arrive at some meaningful and useful conclusiononly when the trend of one item is compared with the trend ratio of other related item, To illustrate an increasing trend in the value of stock is meaning-less unless it is compared with a trend in sales. Then it will show the favourable or unfavourable position. Similarly an upward trend in stock, billsreceivable and sundry debtors compiled with downward trend in sales would usually reflect unfavourable situation, Thus, it is essential that ratios of logically related items should also be calculated and put side by side for easy comparison and for drawing some conclusions.

2. Illogical and Misleading Conclusions: The inferences drawn on the basis of simply trend ratios, without keeping in view the original absolute figures may be sometimes illogical and misleading. Hence, it is essential to study the original data along with trend ratios, For example, one expense may increase fromRs.400 toRs.800 while the other expense may increase fromRs.8,000 toRs.12,000. In the first case though the increase is 100% yet it is insignificant, yet in the second though the increase is 50% yet it is significant in real terms. Similarly unnecessary doubts may raise when the trend percentages show 100% increase in debt while only 50% increase in equity. This doubt can be removed when actual figures are also studied alongwith trend ratios.

3. Unscientific and Inconsistent: The comparison of trend ratio may be unscientific and inconsistent if principles and practices followed were not kept uniform and consistent through out the period of analysis. Hence it is necessary that the accounting policies and practices are not changed throughout the period. Then and then comparison can be realistic.

4. Undue Weightage: Sometimes it may happen that undue weightage is assigned to trend ratios. It is possible when the value in the base year is too small. A small change in the base year's value will lead to more change in trend percentages. For example, once a news appeared in a daily newspaper that 33% of the lady lecturers of a college married 100% male lecturers of that college. The news was astonishing, but when the actual figures were looked into, the actual position became evident. There were 6 lady lecturers and 2 male lecturers in that college. Hence it is always desirable to have information about relative and absolute figures.

5. Defective Selection of Base Year: The base year should be normal and be representative of the items shown in the balance sheet, If the base year is an-abnormal year such as, year of war, or of natural calamities, the comparison with such a year will .be misleading and farce.

6. Price Level Changes: Comparability of data is also adversely affected when the price level has changed materially during the years under review. Hence the figures for the current year will be requiring adjustment in the light of the price level changes as compared to the base year before calculating trend ratios.

5.3.2 COMPARATIVE FINANCIAL STATEMENTS

Any financial statement that reports the comparison of data of two or more consecutive accounting periods is known as Comparative Financial Statement. According to A.F Foulke, "Comparative financial statements are statements of the financial position of a business so designed as to provide time prospective to the consideration of various elements of financial position embodied in such statements." Such a statements spotlights trends and establishes relationship between items that appear on the same row of a Comparative Financial Statement. It discloses changes in items of financial statements over time in both rupees and percentage form. Each item (such as debtors) on a row for one fiscal period is compared with the same item in a different period. The analyst calculates the absolute changes, The difference between the figures of one year and the next and also the percentage change from one year to the next, using the earlier year as the base year.

ADVANTAGES OF COMPARATIVE FINANCIAL STATEMENTS

Following are the advantages of Comparative Financial Statements:

1. Easy Comparison: In comparative statements figures of two or more periods are placed side by side, hence the comparison of various items becomes easy. The inter period and inter firm comparisons are also facilitated from such arrangements.

2. Indicate Trend of Progress: As the comparative statements show sales, cost of goods sold, gross profit, net profit and also the values of different assets and liabilities in a particular form, the performance, efficiency and financial position can be easily evaluated and their trend is easily visible. The common man can form an idea just by a glance on the trend. of various items. Thus they indicate the direction of movement with respect to the financial position and operating results.

3. Weakness Easily Diagnosed: When a comparative study of the two similar firms of two periods is made through the comparative statements, the weaknesses if any are diagnosed easily. This enables the management to take corrective action at right time.

LIMITATIONS OF COMPARATIVE FINANCIAL STATEMENTS

There are certain limitations of the comparative statements, which should be taken into consideration while interpreting the results, are as follows:

1. Price Level Changes: The analyst should also keep in mind that accounting data are recorded on the dates of occurrence of the transactions and, therefore, the accounts usually reflect a great variation of price level. Hence in case the price level has fluctuated substantially, the analyst must exercise caution in interpreting the trends expressed by comparative statements.

2. Change in Accounting Policies: The main object of comparative statement is to facilitate various comparisons which enable to know the real position of business concern. But the comparisons can be made between similar situations. Hence, if frequent changes are made in principles, conventions and policies, during a period of time from date to date, the comparisons become force and misleading.

3. Similar Companies but Different Positions: The inter-firm comparison also becomes misleading if the two similar concerns compared are of different standing, different size and do not follow, uniform policies. There may be also different accounting policies and practices adopted by different concerns with regard to providing depreciation, creation of various provisions etc. which make the comparison difficult and misleading.

COMPARATIVE INCOME STATEMENT

The Statement of Profit and Loss is a summary of the results of operations of a business transacted during a definite period, i.e., a year and indicate the gross profit and net profit. But a single Statement of Profit and Loss does not convey anything about the progress or increase or decrease in the earnings of the business and hence is not of any significance for the purpose of analysis. Hence Comparative Statement of Profit and Loss for more than one period are prepared to enable the analyst to have definite knowledge about the progress of the business. Thus, Comparative Profit and Loss is a statement of showing results of operations of a business for two or more periods.

Preparation: The Comparative Statement of Profit and Loss is prepared showing increase or decrease in the items both in absolute form and in relative form, i.e., showing the change in percentages. It has four columns, first two for original figures of two years and third column for changes in absolute figures and the fourth for showing relative changes. Since the figures for two or more years, are shown side by side, the analyst can quickly ascertain whether sales have decreased or increased, whether cost of sales has decreased or increased and so on. This will help the analyst to derive meaningful conclusions.

HOW TO INTERPRET THE RESULT?

After preparing the Comparative Statement of Profit and Loss, the analyst should give language to the data and make them speak as to what they tell about the performance of the business. The important items which are to be interpreted are gross profit, operating profit and net profit of the business. In this respect an outline is given, according to which he should proceed towards interpretation and give his opinion:

1. Comparison of Gross Profit: Gross Profit is the excess of cost of goods sold over the net sales revenue, hence sales and cost of goods sold be compared and decrease or increase considered. In case the sales have increased more than the increase in cost of goods sold, it is an indicator of increasing earning capacity. In case the cost of goods sold is increasing at a faster rate than the increase in sales, this is not a good sign and gross profit is likely to decrease. After considering the increase or decrease in the figures of sales and cost of goods sold, the reasons of increase and decrease in gross profits will be easily ascertained.

2. Comparison of Operating Profit: Operating profit means the excess of gross profit over operating expenses such as general and administrative expenses and selling and distribution expenses. They are semi-variable expenses, the part which is variable can be easily controlled. If the sales are on the increase, and the operating expenses are controlled, this will lead to higher operating profit. On the contrary; if the operating expenses have increased and sales have decreased, this is an indication of lower profits. The management should, therefore, be suggested to control the unnecessary operating expenses which may be due to mis-management or inefficient management. Keeping in mind these all the things he should comment on the result.

3. Comparison of Net Profit: After arriving at the operating profit, all other non-operating expenses such as interest, loss on sale of assets, deferred expenditure etc. should be deducted and all non-operating incomes such as receipt of interest and dividend, profit on sale of asset etc. should be added. This will give the net profit which is the real measurement of profitability of the concern. The two figures should be compared and conclusion should be drawn regarding the progress of the concern.

The above exercise by the analyst will enable him to form an opinion about the present earning capacity and also whether the earning capacity has increased or decreased in comparison to the previous year and will also give an idea about future profits.

In the content of change introduced a schedule III of the Companies Act, 2013, a comparative profit and loss statement can be prepared generally in the following format.

COMPARATIVE INCOME STATEMENT

Particulars	Previous Year	Current Year	Absolute Year	Percentage Change
(1)	(2)	(3)	(4)	(5)

Income from Operations Other income Total Income Less: Expenses: (i) Cost of Material Consumed or Cost of Goods Sold Employee Benefit Expenses Finance Costs				
Depreciation and Amortisation Expenses Other Expenses				
Total Expenses				
Profit before Tax Less: Tax				
Profit after Tax				

It is clear from the above statement that there are five columns in Comparative Income Statement:

1. In first column items of income and expenditure are written under the heading ‘Particulars’.
2. In second column amounts of previous year are shown.
3. In column third amounts of current year are shown.
4. In column fourth the amount of difference between column second and third is shown which may be either as ‘increase’ or as ‘decrease’.
5. In fifth column, the changes in different items are presented in the form of percentage which is calculated as follows:

$$\% \frac{\text{Amount is fourth column}}{\text{Amount in second column}} \times 100$$

Example 3.

The income statements of a concern are given for the year ending on 31st March 2014 and 2015. Rearrange the figures in comparative form and study the profitability of the concern:

	Years	
	2014	2015
	Rs. (000)	Rs.(000)
Net Sales	850	1,100
Cost of Goods Sold	500	600
Operating Expenses:		
General and Administrative Expenses	100	110
Selling Expenses	90	100
Non-operating Expenses:		

Interest Paid	30	40
Income-tax	80	90

Solution: **COMPARATIVE INCOME STATEMENT**

(for the year ended 31st March, 2014 and 2015)

	31st Mar. 2014 Rs.(000)	31st Mar. 2015 Rs.(000)	Increase (+) Decreases (–)	Increase (+) Decrease (–) Percentage (%)
Net Sales	850	1100	+250	$\frac{250}{850} \times 100 =$ 29.41
Less: Cost of Goods Sold	500	600	+100	$\frac{100}{500} \times 100 =$ 20.00
Gross Profit (a)	350	500	+150	$\frac{150}{350} \times 100 =$ 42.88
Operating Expenses:				
General and Administrative Expenses	100	110	+10	$\frac{10}{100} \times 100 = 10$
Selling Expenses	90	100	+10	$\frac{10}{90} \times 100 = 11.11$
Total Operating Exp. (b)	190	210	+20	$\frac{20}{190} \times 100 =$ 10.53
Operating Profit (a–b)	160	290	+130	$\frac{130}{160} \times 100 =$ 81.25
Less: Interest Paid	30	40	+10	$\frac{10}{30} \times 100 = 33.33$
Net Profit before tax	130	250	+120	$\frac{120}{130} \times 100 =$ 92.31
Less: Income tax	80	90	+10	$\frac{10}{80} \times 100 = 12.5$
Net Profit after tax	50	160	+110	$\frac{110}{50} \times 100 = 220$

Interpretation

1. Gross Profit: It we look into the figures of sales and cost of goods sold of both the years, we come to know that sales have increased by 29.41% while cost of goods sold has increased by 20%. This shows a trend of increasing gross profit.

2. Operating Profit: Though the general and administrative expenses and selling expenses have increased by 10% and 11.11% respectively. The overall increase in operating expenses is only by 10.53%. This has resulted in a very good increase in net operating income of 81.25%. This shows that due to increase in sales and control of operating expenses, the net operating profit has increased.

3. Net Profit: Operating profit has increased by 81.25% whereas non-operating expense has increased by 33.33% only. Further net profit before tax has increased by 92.31%, whereas income tax has increased only by 12.5%, as a result net profit after tax has increased 220%.

In this way the earning capacity of the concern is satisfactory.

COMPARATIVE STATEMENT OF COST OF PRODUCTION

Comparative statement of cost of production is also an important tool for analysis and interpretation of cost of production and its relation with other different individual costs such as material, labour and manufacturing expenses. The analyst wants to know two things from this analysis:

(i) What is the trend of various items of expenditure incurred on production i.e., whether they are increasing or decreasing.

(ii) What is the ratio of each element of cost to total cost of production and what changes have occurred thereon? Which element of cost is affecting the total cost of production most.

On the basis of such knowledge, the producer can take important decisions regarding reduction in the various items of expenses and thus can maximise the profits. This is done by preparing comparative statements of cost of production from one period to another.

Preparation: This statement contains a number of columns. Besides the columns of absolute figures of two or more years, there will be a column for showing percentage of each element of cost to total cost of production. In addition, there will be two columns more one for showing absolute increase or decrease and another for relative increase or decrease, i.e., percentage increase or decrease. This has been explained by the example.

Example 4.

Following is the statement of cost of goods manufactured by Manjula Private Ltd. Present the data in a suitable form of analysis:

	Years	
	2013	2014
	Rs.	Rs.
Material Consumed	2,13,000	2,34,000
Direct Labour	2,53,000	3,16,000
Manufacturing Exp.	1,21,000	1,42,000
(a)	5,87,000	6,92,000
Variation of Goods in Processes of Stock		
Opening of Year	13,000	14,000
Closing of Year	14,000	16,000
(b)	1,000	2,000
Cost of Goods Manufactured (a–b)	5,86,000	6,90,000

Solution: **MANJULA PRIVATE LIMITED**

Comparative Statement of Cost of Goods Manufactured

	Amount		Percentage with cost of goods manufactured		(+) Increase Amount	(–) Decrease %
	2013	2014	2013	2014		
	Rs.	Rs.				
Raw Material Used	2,13,000	2,34,000	36.35	33.91	+21,000	9.86
			$\left\{\frac{2,13,000}{5,86,000} \times 100\right\}$	$\left\{\frac{2,34,000}{6,90,000} \times 100\right\}$		$\left\{\frac{21,000}{2,13,000} \times 100\right\}$
Direct Labour	2,53,000	3,16,000	43.17	45.80	63,000	24.90
			$\left\{\frac{2,53,000}{5,86,000} \times 100\right\}$	$\left\{\frac{3,16,000}{6,90,000} \times 100\right\}$		$\left\{\frac{63,000}{2,53,000} \times 100\right\}$
Manufacturing Exp.	1,21,000	1,42,000	20.65	20.58	21,000	17.36

			$\left\{\frac{1,21,000}{5,86,000} \times 100\right\}$	$\left\{\frac{1,42,000}{6,90,000} \times 100\right\}$		$\left\{\frac{21,000}{1,21,000} \times 100\right\}$
			$\frac{5,87,000}{5,86,000} \times 100 =$	$\frac{6,92,000}{6,90,000} \times 100 =$		$\frac{1,05,000}{5,87,000} \times 100 =$
	5,87,000	6,92,000	100.17	100.29	1,05,000	17.89
Less: Variation of Goods in Processes Of Stock	1,000	2,000	0.17	0.29	1,000	0.12
Cost of Manufacturer	5,86,000	6,90,000	100.00	100.00	1,04,000	17.77

Interpretation: It is clear from the above statement that the cost of production for the 2014 has increased by 17.17% in comparison to 2013. Although during this period year expenditure made on material, labour and production expenses has increased but it is obvious from their percentages with cost that the percentages of material and production expenses have reduced whereas the percentage of labour has increased. Thus it can be said that in the year 2014 labour cost has increased in comparison to 2013. So the management should take proper care to control labour cost.

COMPARATIVE STUDY OF BALANCE SHEET

The knowledge of the changes in the various items of balance sheet such as assets, liabilities, capital funds etc. is very essential to the users of balance sheet on the basis of which they form their opinion about the soundness of the business enterprise. These changes can be known by comparative balance sheets of two periods. In the comparative balance sheets prepared at two different dates, the items and data are presented in such a way that the changes in each item between two dates are easily found and determined. In the words of Foulke, "Comparative Balance Sheet is the study of the trend of the same business enterprise on different dates." For interfirm comparison, comparative balance sheets of two or more business enterprises on a particular date may also be studied. It is but natural that information regarding trends indicating the direction in which the business is headed is usually more important to analyst than simply the book values of assets and liabilities.

Preparation: Under this method of analysis of balance sheet, there are four columns. In the first two columns the value of assets and liabilities (previous and current years) are shown. In third column either increase or decrease in assets and liabilities are shown and in the fourth column the percentage change is shown.

HOW TO INTERPRET THE RESULT?

The comparative balance sheet shows changes in each item of balance sheet between two dates. After preparing the comparative balance sheets the analyst should give his interpretation regarding the financial position, profitability and prospects of the concern. For this purpose he should concentrate on:

(i) Short-term Financial Position,

(ii) Long-term Financial Position, and

(iii) Profitability.

1. Short-term Financial Position: Short-term financial position of the concern means whether the concern is capable of meeting its short-term obligations like payment of interest, expenses, instalment of loan on maturity, obligations towards creditors, suppliers of goods, raw materials and other short-term debts, i.e., current liabilities. Further, whether the working capital needs of the concern are being fulfilled without any difficulty and whether it is sufficient for carrying on the day-to-day activities efficiently. For this purpose, he should study the working capital position of both the years. He should consider the changes in the each of the items of current assets such as Cash, B/R, Stock Debtors etc. and current liabilities such as Creditors, B/P, Bank Overdraft etc. The increase in current assets and decrease in current liabilities leads to increase in the working capital, resulting in an improvement in the short-term financial position, while increase in current liabilities or decrease in current assets leads to decrease in working capital, indicating that the short-term financial position is not good.

In this way after noting the changes in each item of current assets and current liabilities and studying their nature reasons for their behaviour, the analyst can have an idea and can form his opinion about the short-term financial position of the business.

2. Long-term Financial Position: Long-term Financial Position is concerned with long-term solvency of the concern. In order to measure the long-term financial position, the analyst should study the changes in fixed assets, long-term debts and capital funds and reasons for the same, Through these changes, he can form an opinion about the fixed assets financing Policy of the concern. The generally accepted and sound policy is that the fixed assets must he financed by permanent sources such as capital funds, long-term debts, etc. If the analyst notes, while looking to the changes in the above items, that the increase in fixed assets is more than the increase in long term debts and capital funds, it means that fixed assets are being financed to some extent by working capital, which is not a sound policy. On the contrary, if the increase in fixed assets is less than the increase in long term debts and capital funds, it means that fixed assets are being financed by long-term debts and capital funds, which is a sound policy.

3 Profitability: Profitability means progress of the company or concern. From balance sheet it can be examined by comparing the figures of retained earnings of two dates. If the reserves and surplus have increased, it means that the concern is on sound footing and the earning capacity has increased in comparison to the previous year and vice-versa. Thus by comparing the balances of reserves and surplus one can have an idea about the earning capacity and performance of the concern.

After studying the long-term and short-term financial position and profitability in accordance with the outlines given above, the analyst can form his opinion about all the three factors.

ADVANTAGES OF COMPARATIVE BALANCE SHEET

Comparative Balance Sheet is a most important tool of financial analysis. It is more suitable for analysing the position on two dates in comparison to the single balance sheet which provides information only about the balances of accounts on at particular date. Comparative balance sheets are additionally advantageous in the following respects:

1. Changes are determined: By Comparative Balance Sheets besides giving balances o accounts at different dates, the changes in such balances between the two different dates are also determined.

2. More Stress on Changes: The single balance sheet lays emphasis on status but in the comparative balance sheet more stress is laid on the changes. These changes are the results of the use of assets and liabilities due to various activities of the concern.

3. Reflects Trend: The comparative balance sheets not only throw light on the changes in the book values of the assets and liabilities but indicates trends visible in them over a period of time,

4. Link between Balance Sheet and Statement of Profit and Loss: Comparative Balance Sheets serve as a link between the balance sheet and the Statement of Profit and Loss shows the operating results of the concern while the balance sheet reflects the impact of operation results on the assets and liabilities of the concern. They are interrelated.

In the content of Schedule III of Companies Act, 2013, a comparative Balance Sheet may be prepared in the following format:

Comparative Balance Sheet of

(as at…………….. 2014and2015)

Particulars	Previous Year 2014	Current Year 2015	Absolute Changes (Increase or Decrease)	Percen-tage Change
I. EQUITY AND LIABILITIES	Rs.	+ Rs.	Rs.	Rs.
1. Shareholders' Funds:				
(a) Share Capital				
(b) Reserves and Surplus				
2. Share Application Money Pending Allotment				
3. Non-current Liabilities:				
(a) Long-term Borrowings				
(b) Other Long-term Liabilities				
(c) Long-term Provisions				
4. Current Liabilities:				
(a) Short-term Borrowings				
(b) Trade Payables				
(c) Other Current Liabilities				
(d) Short-term Provisions				
Total				
II. ASSETS				
1. Non-current Assets:				
(a) Fixed Assets:				
(i) Tangible Assets				
(ii) Intangible Assets				
(b) Non-current Investments				
2. Current Assets:				
(a) Current Investments				
(b) Inventories				
(c) Trade Receivables				
(d) Cash & Cash Equivalents				

(e) Short-term Loans & Advances (f) Other Current Assets Total				

Example 5.

The Balance Sheet of Nandni Ltd. For the year ending 31st March, 2014 and 2015 are following:

Nandni Ltd……

Balance Sheet as at

Particulars	Note No.	2015	2014
I. EQUITY & LIABILITIES		Rs.	Rs.
1. Shareholders' Funds:			
(a) Share Capital			
Equity Share Capital		5,000	4,000
(b) Reserve & Surplus			
Capital Reserve		900	150
2. Non-current Liabilities:			
10% Debentures		800	600
3. Current Liabilities			
(Creditors) Trade Payables		300	250
Total (1+2+3)		7,000	5,000
II. ASSETS:			
1. Non-current Assets:			
(a) Fixed Assets:			
(i) Tangible Assets			
Land & Building		3,000	2,000
Plant & Machinery		1,500	1,000
(b) Investment		800	600
2. Current Assets:			
Trade Receivables (Debtors)		500	400
Inventory (Stock)		900	800
Cash		300	200
Total (1+2)		7,000	5,000

Draw a Comparative Balance Sheet showing increases and decreases both in absolute figures and in percentage and then interpret the changes.

Solution: COMPARATIVE BALANCE SHEET OF NANDNI LTD.

(as on 31st March, 2014 and 2015)

	31st Mar. 2014	31st Mar. 2015	Increase or Decrease	Increase or Decrease in (%)

ASSETS: Fixed Assets:				
Land and Building	2,000	3,000	+ 1,000	$\frac{1,000}{2,000} \times 100 = 50$
Plant and Machinery	1,000	1,500	+500	$\frac{500}{1,000} \times 100 = 50$
Total of Fixed Assets (a)	3,000	4,500	1,500	$\left\{\frac{1,500}{3,000} \times 100\right\} = 50$
Investment (b)	600	800	200	$\frac{200}{600} \times 100 = 33.33$
Current Assets:	400	500	100	$\frac{100}{400} \times 100 = 25$
Debtors	800	900	100	$\frac{100}{800} \times 100 = 12.5$
Stock	200	300	100	$\frac{100}{200} \times 100 = 50$
Cash	1,400	1,700	300	$\left\{\frac{300}{1,400} \times 100\right\} = 21.43$
Total of Current Assets (c)	5,000	7,000	2,000	$\frac{2,000}{5,000} \times 100 = 40$
Total Assets (a+b+c)				
LIABILITIES:	4,000	5,000	1,000	$\frac{1,000}{4,000} \times 100 = 25$
Equity Share Capital	150	900	750	$\frac{750}{150} \times 100 = 500$
Reserve and Surplus	600	800	200	$\frac{200}{600} \times 100 = 33.33$
10% Debentures (Secured Loan)	4,750	6,700	1,950	$\left\{\frac{1,950}{4,750} \times 100\right\} = 41.05$
Total of Fixed Liabilities (a)	250	300	50	$\frac{50}{200} \times 100 = 20$
Creditors (b)	5,000	7,000	2,000	$\frac{2,000}{5,000} \times 100 = 40$
Total Liabilities (a+b)				

Interpretation

1. Short-term Financial Position: The working capital has increased fromRs.1,150 toRs. 1,400 and current ratio has also increased. The previous current ratio was 5.6 (1,400 ÷ 250) whereas present current ratio is 5.67 (1,700 ÷ 300) which is much more than standard of 2. Hence the short-term financial position is strong. However, the following points are worth considering. Debtors, stock and cash have increased by 25%, 12.5% and 50% respectively whereas creditors has increased by 20%.

2. Long-term Financial Position: The statements show that fixed assets have increased byRs.15,00,000 i.e., 50% while Share Capital and Debentures have increased by 58.33% (i.e., 25 + 33.33). Hence it appears that the increase in fixed assets has been financed by long term fund which is according to sound commercial principles.

3. Profitability: The Reserve and Surplus has tremendously increased, i.e., 500% which indicates sound profitability position of the concern.

5.4.3 COMMON-SIZE STATEMENT

The comparative financial statements and trend analysis suffer from a drawback that they do not indicate the changes that have taken place from year to year in relation to the total assets, liabilities and capital or total net sales. Moreover, even the comparison of two or more business units or of one unit with statements for an industry as a whole, there is no common base. This drawback of trend analysis has been done away with the method of common size financial statement analysis. The comparative common size financial statement shows the percentage of each item to the total in each period. According to Kenedy and Nactnuller "If the balance sheet and income statement items are shown in analytical percentage, i.e., percentages or ratios to the total of appropriate items (total assets, total liabilities and total net sales) a common base for comparison is provided". The statements in this form are called common size statements. Such statements are useful in studying the comparative financial position of two or more businesses.

Preparation: Common size statement include:

(i) Common size Statement of Profit and Loss, and

(ii) Common size Balance Sheet.

In order to prepare a common size statement the total net sales, total assets, total liabilities and capital are assumed to be equal to 100 then the ratio of each item of the statement to the total of the statement is found out by dividing the value of individual item by the total of the amount in the statement and by multiplying the quotient by 100.

LIMITATIONS OF COMMON SIZE STATEMENTS

Following are the main limitations of common size:

1. Difference between Different Activities: The use of this method is not possible when the various activities of a concern differ from each other.

2. Difference in Accounting Methods: If the accounting methods followed by two businesses are different, this method of analysis cannot be used.

3. Difference in heads of Account: If there is difference between the various heads of account, i.e., in the way the different expenses are treated and written or collected, this method may give misleading conclusions.

COMMON-SIZE STATEMENT OF PROFIT AND LOSS

In a Common-size Statement of Profit and Loss each item is shown as percentage to total net sales, it reflects as to what part of sales has been absorbed by each individual item of expense. For example, if we say that selling expenses areRs.15,000. It will not convey any conclusion unless we consider the total volume of sales with it. After that we may say that the above expenditure was incurred for so much sales and whether it was reasonable or excessive. Hence by taking the total sales equal to 100, all items are converted into percentages by dividing each item of the Statement of Profit and Loss by sales and by multiplying it by 100. The statements prepared in this way, is called Common-size Statement of Profit and Loss.

Example 6.

The income statement of Satyagrahi Ltd. are given for the years 2013 and 2014. Convert these into common size income statement and interpret the changes:

Income Statements

(for the year ending 2013 and 2014)

	Years	
	2013	2014
	Rs.	Rs.
Net Sales	4,20,000	4,50,000
Cost of Sales	3,80,000	3,90,000
Gross Profit (a)	40,000	60,000
Operating Expenses:		
Selling and Distribution Expenses	10,000	12,000
Administrative Exp.	5,000	5,000
Total Operating Exp. (b)	15,000	17,000
Operating Profit (a –b)	25,000	43,000
Other Income	5,000	5,000
Total Income	30,000	48,000
Non-Operating Exp.	2,000	3,000
Net Profit during the year	28,000	45,000

Solution:

COMMON-SIZE INCOME STATEMENT

(for the year ending 2013 and 2014)

	2013		2014	
	Rs.	%	Rs.	%
Net Sales	4,20,000	100.00	4,50,000	100.00
Less: Cost of Sales	3,80,000	$\frac{3,80,000 \times 100}{4,20,000} =$ 90.48	3,90,000	$\frac{3,90,000 \times 100}{4,50,000} =$ 86.67
Gross Profit (a)	40,000	9.52	60,000	13.33
Operating Exp. Selling Exp.	10,000	$\frac{10,000 \times 100}{4,20,000} = 2.38$	12,000	$\frac{12,000 \times 100}{4,50,000} = 2.67$
Ad. Expenses	5,000	$\frac{5,000 \times 100}{4,20,000} = 1.19$	5,000	$\frac{5,000 \times 100}{4,50,000} = 1.11$
Total Operating Exp. (b)	15,000	3.57	17,000	3.78
Operating Income (a–b)	25,000	5.95	43,000	9.56

(+) Other Incomes	5,000	1.19	5,000	1.11
Total Incomes	30,000	7.14	48,000	10.67
(–) Non-operating Exp.	2,000	0.48	3,000	0.67
Net Incomes	28,000	6.66	45,000	10.00

Interpretation

1. The Gross Profit has increased absolutely and relatively both as it is 13.33% to sales in comparison to 9.52% in previous year. It appears that cost control and sales promotion scheme is successful.

2. The operating costs have little increased from 3.57% to 3.78, i.e. 28% of sales. Even then operating profit has increased from 5.95% to 9.56%.

3. Lastly net profit has increased from 6.66% to 10%.

On the whole the progress (Profitability) is satisfactory.

Example 7.

From the following: Profit& Loss Statement of Sumit Ltd. you are required to prepare a common-size income statements:

Statement of Profit and Loss of Sumit Ltd. For the year ended

Particulars	Note No.	Amount	Amount
		Rs.	Rs.
Sales (Revenue from Operation)			2,00,000
Add: Other Income			–
Total Revenue			2,00,000
Less: Expenses:			
Cost of Sales: Rs.			
Stock 20,000			
Add: Purchases 1,00,000			
Direct Expenses 1,000			

1,21,000			
Less: Closing Stock Rs.		83,000	
Finished 18,000		5,000	
Raw Material 20,000 38,000		1,000	
Administrative Expenses		11,000	1,00,000
Financial Expenses			1,00,000
Selling and Distribution Expenses			
Net Profit during the year			

Solution:

Cost of goods sold = Net Sales – Gross Profit

= 2,00,000 – 1,17,000

=Rs.83,000

COMMON SIZE INCOME STATEMENT

	Amount	% with Sales
	Rs.	Rs.
Net Sales	2,00,000	100,000
Less: Cost of Goods Sold	83,000	41.500
Gross Profit (a)	1,17,000	58.50
Operating Expenses:		
Administrative Exp.	5,000	2.50
Financial Exp.	1,000	0.50
Selling or Distribution Exp.	11,000	5.50
	17,000	8.50
Total Operating Exp. (b)	1,00,000	50.00
Net Profit for the year (a–b)		

INTERPREATION

1. It is clear from the above statement that Cost of Goods Sold is 41.50% and Gross Profit is 58.50% of total net sales, which indicates the goods profitability of the company.

2. Operating expense of the company is 8.5% of total net sales, which also indicates the efficient management of the company.

3. Net profit is 50% of the net sales, which indicates the sound position and profitability of the company.

On the whole the progress is satisfactory.

COMMON SIZE BALANCE SHEET

In the common size Balance Sheet, each item of assets is converted into percentages to total assets and each item of capital and liabilities is converted into percentage to total liabilities and capital fund. Thus the balance sheet is converted into percentage form and the converted balance sheet is called common size balance sheet. In case two or more business concerns are to be compared, the balance sheets of other concerns should also likewise to be converted into percentages, they will be called comparative common size balance sheets. This method is most useful in inter-firm comparisons. It should, however he noted that common size financial statements when read horizontally do not give information about the trend of individual item but the trend of their relationship to total consideration of these trends is not very useful because there are no definite norms for the proportion of each item to total.

COMMON SIZE BALANCE SHEET

(as on 31st March, ………)

Particulars	Absolute Amount		% Balance Sheet Total	
Particulars	2014 Rs.	2015 Rs.	2014 (%)	2015 %
I. EQUITY AND LIABILITIES				
1. Shareholders' Funds:				
(a) Share Capital	xxx	xxx	xxx	xxx
(b) Reserves and Surplus	xxx	xxx	xxx	xxx
(c) Money received against share warrants	xxx	xxx	xxx	xxx
2. Share Application Money Pending Allotment	xxx	xxx	xxx	xxx
3. Non-current Liabilities:				
(a) Long-term Borrowings	xxx	xxx	xxx	xxx
(b) Deferred Tax Liabilities (Net)	xxx	xxx	xxx	xxx
(c) Other Long-term Liabilities	xxx	xxx	xxx	xxx
(d) Long-term Provisions	xxx	xxx	xxx	xxx
4. Current Liabilities:				
(a) Short-term Borrowings	xxx	xxx	xxx	xxx

(b) Trade Payables	xxx	xxx	xxx	xxx
(c) Other Current Liabilities	xxx	xxx	xxx	xxx
(d) Short-term Provisions	xxx	xxx	xxx	xxx
Total	xxx	xxx	100	100
1. Non-current Assets:				
(a) Fixed Assets:	xxx	xxx	xxx	xxx
(i) Tangible Assets	xxx	xxx	xxx	xxx
(ii) Intangible Assets	xxx	xxx	xxx	xxx
(iii) Capital work-in-Progress	xxx	xxx	xxx	xxx
(iv) Intangible assets under development	xxx	xxx	xxx	xxx
(b) Non-current Investments	xxx	xxx	xxx	xxx
(c) Deferred Tax Assets (Net)	xxx	xxx	xxx	xxx
(d) Long-term Loans and Advances	xxx	xxx	xxx	xxx
(e) Other non-current Assets				
2. Current Assets:				
(a) Current Investments	xxx	xxx	xxx	xxx
(b) Inventories	xxx	xxx	xxx	xxx
(c) Trade Receivables	xxx	xxx	xxx	xxx
(d) Cash & Cash Equivalents	xxx	xxx	xxx	xxx
(e) Short-term Loans & Advances	xxx	xxx	xxx	xxx
(f) Other Current Assets	xxx	xxx	xxx	xxx
Total	xxx	xxx	100	100

Example 8.

From the following Balance Sheet of Amit Ltd., given in conventional form you are required to prepare a Common-size Balance Sheet for the purpose of vertical analysis:

Amit Ltd.

(Balance Sheet at 31st March, 2015)

Particulars	Note No.	2014
I. EQUITY & LIABILITIES		Rs.
1. Shareholders' Funds:		
(a) Share Capital		1,20,000
Equity Share Capital		40,000
Preference Share Capital		
(b) Reserve & Surplus		50,000
Reserve		30,000
Statement of Profit & Loss		1,10,000
2. Current Liabilities:		3,50,000
Total (1+21)		

II. ASSETS:		
1. Non-current Assets:		
Fixed Assets:		2,00,000
(i) Tangible Assets		10,000
Plant & Machinery		1,40,000
Furniture		3,50,000
2. Current Assets:		
Total (1+2)		

Solution: **Amit Ltd.**

COMMON SIZE BALANCE SHEET

	Amount	**% with total Assets/ Liab.**
LIABILITIES SIDE:	Rs.	
Equity Share Capital	1,20,000	34.28
Preference Share Capital	40,000	11.43
Reserve	50,000	14.29
Statement of Profit & Loss	30,000	8.57
(a)	2,40,000	68.57
Current Liabilities (b)	1,10,000	31.43
Total Liabilities	3,50,000	100.00
(a+b)		
ASSETS SIDE:		
Fixed Assets:	2,00,000	57.14
Plant and Machinery	10,000	2.86
Furniture	2,10,000	60.00
(a)	1,40,000	40.00
Current Assets	3,50,000	100.00
(b)		
Total Assets (a+b)		

Formula % = $\frac{\text{Individual item of Liabilities /Assets side}}{\text{Total Liabilities /Assets}} \times 100$

Interpretation

1. The company is traditionally financed as the 68.57% of the total liabilities have been obtained from Equity and Pref. Share Capital, Reserves and Statement of Profit and Loss.
2. The position of working capital is not good because its ratio is 1.27 whereas it should have been as standard ratio.
3. Long-term financial position is good because fixed assets have been financed by long-term liabilities, such as Capital, Reserve Funds etc. i.e., long-term liabilities are Rs.2,40,000 whereas fixed assets areRs.2,10,000.

The detailed discussions on Funds Flow Statement, Cash Flow Statement and Ratio Analysis has been made in the following lessons.

5.5 CHECK YOUR PROGRESS

State whether the following statements are True or False:

1. In a Common-size Statement of Profit and Loss each item is shown as percentage to total net sales.
2. Short-term financial position of the concern means whether the concern is capable of meeting its long-term obligations.
3. Operating profit means the excess of gross profit over operating expenses.
4. Any financial statement that reports the comparison of data of two or more consecutive accounting periods is known as Trend Analysis.

5.6 SUMMARY

Financial statement analysis can be explained as a method used by interested parties such as investors, creditors, and management to evaluate the past, current, and projected conditions and performance of the firm. Under the financial statement analysis, the information available are grouped together in order to cull out the meaningful relationship which is already available among them; for interpretation and analysis. Comparative (income) financial statement analysis is being carried out in between the income statements of the various accounting durations of the firm, with other firms in the industry and with the industrial average. Trend analysis involves calculating each year’s financial statement balances as percentages of the first year, also known as the base year. When expressed as percentages, the base year figures are always 100 percent, and percentage changes from the base year can be determined.

5.7 KEYWORDS

Financial Statement: A written report which quantitatively describes the financial health of a company.

Comparative Statements: Comparative statements are the financial statements which follow a consistent format but which cover different periods of time. Comparative statements are very useful for spotting trends.

Trend analysis: In trend analysis, financial ratios are compared over time, typically years.

5.8 SELF-ASSESSMENT TEST

1. The following Statement of Profit and Loss of Bhatia Ltd. are given for two financial years 2014 and 2015.

	31st March, 2014	31st March 2015
	Rs.	Rs.
Cost of Goods Sold	6,00,000	7,00,000
Sales	8,50,000	9,80,000
Operating Exp.		
Office Exp.	1,50,000	1,60,000
Selling Exp.	20,000	25,000
Misc. Income	5,000	8,000
Rate of Income Tax 50%		

Prepare a Horizontal analysis of the Statement of Profit and Loss comparing absolute figures.

2. The Income statements of a concern are given for the year ending on 31st March, 2014 and 2015. Rearrange the figures in a comparative form and study the profitability of the concern.

	2013	2014
	Rs.	Rs.

		(00)		(000)
Net Sales		780		895
Cost of Goods Sold		445		495
Operation Exp.				
General and Administration Exp.	65		67	
Selling Exp.		75		85
Non-operating Exp.:				
Interest Paid		20		25
Income-tax		65		75

3. Calculate the trend Ratios from the following figures of X Ltd. Taking 2010 as base and interpret them:

Years	Sales	Stock	Profit before Tax
2010	1,870	700	310
2011	2,830	770	425
2012	2,640	800	450
2013	3,200	920	520
2014	3,700	1,140	660

4. The following Balance Sheets of Lohia Co. Ltd. Are given below for the year ending 31st March, 2014 and 2015: Figure in (00)

Balance Sheet of Lohia Ltd.

(as on 31st March, 2014 and 2015)

Particulars	Note No.	2014	2015
I. EQUITY & LIABILITIES		Rs.	Rs.
1. Shareholders' Funds:		35,000	20,000
(a) Share Capital		1,250	1,000
(b) Reserve & Surplus			
2. Non-Current Liabilities:		7,500	5,000
10% Debentures			
3. Current Liabilities:		6,250	4,000
Trade Payables (Creditors)		50,000	30,000
Total (1+2+3)			
II. ASSETS:			
1. Non-current Assets:			

(a) Fixed Assets:			
(i) Tangible Assets		15,000	8,000
Land and Building		16,000	12,000
Plant and Machinery		10,000	1,000
(b) Investment			
2. Current Assets:		6,000	4,000
Trade Receivables (Debtors)		2,500	3,000
Inventory (Stock)			
Cash & Cash Equivalents:		500	2,000
Cash		50,000	30,000
Total (1+2)			

Draw a comparative Balance Sheet showing increases and decreases in absolute figures and in percentage and then interpret the result.

5. Convert the following statement of Profit and Loss of Amit Ltd. For the year ended 31st March, 2014 and 2015 into Common size Statement of Profit & Loss for comparison purpose. Use total sales as a base for calculation.

	31st March 2014	31st March 2015
	Rs.	Rs.
Net Sales	4,80,000	6,40,000
Less: Cost of Goods Sold	2,48,000	3,56,000
Gross Profit (a)	2,32,000	2,84,000
Administrative Exp.	88,000	1,28,000
Selling Expenses	84,000	72,000
Interest Charges	4,800	3,200
Gross Profit (b)	1,76,800	2,03,200
Net Profit before Income Tax (a–b)	55,200	80,800
Less: Income Tax @ 50%	27,600	40,400
Net Profit after Income Tax	27,600	40,400

6. The Income Statements of Sumit Ltd. are given for the year 2013 and 2014. Convert them into Common-size Income Statement and Interpret the changes.

Income Statement

(For the year ending 2013 and 2014)

Particulars	2013	2014
	Rs.	Rs.
Gross Sales	7,25,000	8,15,000
Less: Sales Returns	25,000	15,000
Net Sales	7,00,000	8,00,000
Less: Cost of Sales	5,95,000	6,15,000
Gross Profit (a)	1,05,000	1,85,000
Operating Expenses:		
Selling & Distribution Exp.	23,000	24,000
Administrative Expenses	12,700	12,500
Total Exp. (b)	35,700	36,500
Operating Income (a–b)	69,300	1,48,500
Add: Other Income	1,200	8,050
	70,500	1,56,550
Less: Non-Operating Exp.	1,750	1,940
Net Profit for the year	68,750	1,54,610

5.9 ANSWERS TO CHECK YOUR PROGRESS

1. True
2. False
3. True
4. False

5.10 REFERENCES/SUGGESTED READINGS

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Subject: Management Accounting	
Course code: BCOM 501	**Author: Prof. M. C. Garg**
Lesson no. :06	
ANALYSIS OF FINANCIAL STATEMENTS-II (RATIO ANALYSIS)	

Structure

6.0 LEARNING OBJECTIVES

After reading this lesson, you should be able to

- Explain the meaning and types of various ratios.
- Enlist the advantages and limitations of ratio analysis.
- Illustrate various profitability, activity and leverage ratio.

6.1 INTRODUCTION

Ratio analysis is one of the methods of analysing financial statements. It has been our experience that financial statements in their original form are collection of monotonous figures. The statements are detailed and do not present the required information at a glance. Accountants have to toil (to labour hard) very hard in digging out the required information. Ratio analysis is, therefore, an attempt to present the information of the financial statements in simplified, systematised and summarised form. Accountants introduced ratio analysis to meet this end. Ratio analysis measures the profitability, efficiency and financial soundness of the business, The Relationship between two facts, i.e., Sales and Gross Profit or Current Assets and Current Liabilities is studied and the result is presented in the form of ratio.

According to Myers, “Ratio analysis is a study of relationship among the various financial factors in a business.”

6.2 MEANING, TYPES AND NATURE OF RATIO ANALYSIS

A ratio is a simple arithmetical expression of the relationship of one number to another. It is expressed when one figure is divided by another; or it may be defined as the indicated quotient of two mathematical expression. For example, if Rs.4,000 is divided by Rs.10,000, the ratio can be expressed as 0.4 or 2.5 or 40%, A ratio has been defined by some persons as follows:

(i) According to Accountant’s hand book by Wixon, Kell and Bedford, “A ratio is an expression of the quantitative relationship between two numbers.”

(ii) According to Kohler “A ratio is the relation of the amount, a to another, b, expressed as the ratio of a to b, a : b, or as a simple fraction, integer, decimal, fraction or percentage.”

TYPES OF ACCOUNTING RATIOS

1. Pure Ratio: The relationship between two figures can be presented in pure ratio. Forexample, if current assets are worth Rs.10,000 and current liabilities are Rs.5,000 then the relationship between current assets and current liabilities can be expressed as 10,000: 5,000or 2:1.

In this way, it is a common practice to present financial position ratios by pure ratio method.

2. Percentage Ratio: The relationship between two figures is presented in percentage. For example, if sales is Rs.50,000 and gross profit is Rs.12,500, the relationship can be presented as gross profit to be 25% of sales, i.e.,

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

$= \frac{12{,}500}{50{,}000} \times 100 = 25\%$

In this way, it is a common practice to present gross profit, net profit, expenses and operating ratio by percentage ratio method.

3. Rate Ratio: According to this method, one figure is expressed in terms of other relative figure. For example, If cost of goods sold is Rs.1,25,000 and working capital is Rs.25,000, the relationship between the two can be said cost of goods sold is five times of working capital, i.e., 1,25,000 ÷ 25,000.

Rate ratio is commonly used in respect of activity ratios.

These are three different methods of ratio analysis of financial statements but they lead to the same conclusion. Either of the three methods can be followed in solving questions. Ratio analysis is, therefore, a tool to present the figures of financial statements in simple, concise and intelligible form. Ratio analysis, in this way is the process of establishing meaningful relationship between two figures or set of figures of financial statement.

NATURE OF RATIO ANALYSIS

Ratio analysis is a technique of analysis and interpretation of financial statements. It is the process of establishing and interpreting various ratios for helping in making certain decisions. However, ratio analysis is not an end itself. It is only a means of better under 5anding of financial strength and weaknesses of a firm. Calculation of mere ratios does not serve any purpose, unless several appropriate ratios are analysed and interpreted. There are a number of ratios which can be calculated from the information given in the financial statements, but the analyst has to select the appropriate data and calculate only a few appropriate ratios from the same keeping in mind the objective of analysis. The ratio may be used as a symptom like blood pressure, the pulse rate or the body temperature and their interpretation depends upon the calibre and competence of the analyst. 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 the some other firms or the comparison with ratios of the industry to which the firm belongs.

(iv) Interpretation of the ratios.

6.3 PRECAUTIONS, IMPORTANCE AND LIMITATIONS FOR THE USE OF RATIOS

The calculation of ratio nay not be difficult but their use not easy. The information on which these are based, such as, the constraints of financial statements, objective of their use, the calibre of the analyst, etc. are important factors which influence the use of ratios. Following precautions should be kept in mind while interpreting various ratios:

1. Accuracy of Financial Statements: The ratios are calculated from the data available in financial statements. The reliabilities of ratios are linked to the accuracy of information in these statements. Before calculating ratios one should see whether proper concepts and conventions have been used for preparing financial statements or not, These statements should also be properly audited by competent auditors. The preventions will establish the reliability of data given in financial statements.

2. Objective of Analysis: The type of ratios to be calculated will depend upon the objective for which these are required. If the objective is to study current financial position then ratios relating to current assets and current liabilities will be studied. The objective of 'user' is also important for the analysis of ratios. A creditor, a banker, an investor, a shareholder, all have different objects for studying ratios. The object for which ratios are required to be studied should always be kept in mind for studying various ratios. Different objects may require the study of different ratios.

3. Selection of Ratios: The ratios should be selected very carefully. The ratios should match the purpose for which these are required. Calculation of large number of ratios without determining their need in the present context may confuse the things instead of solving them. Only those ratios should be selected which can throw proper light on the matter to be discussed.

4. Use of Standards: The ratios will give an indication of financial position only when discussed with reference to certain standards. Unless otherwise these ratios are compared with certain standards, one will not be able to reach at conclusions. These standards may be rule thumb as in case of current ratio, i.e., (2 : 1) and acid-test ratio, i.e., (1 : 1), may be industry standards, may be budgeted or projected ratios etc. The comparison of calculated ratios with the standards will help the analyst in forming his opinion about financial situation of the concern,

5. Calibre of the Analyst: The ratios are only the tools of analysis and their interpretation will depend upon the calibre and competence of the analyst. He should be familiar with various financial statements and the significance changes etc. A wrong interpretation may create havoc for the concern since wrong conclusions may lead to wrong decisions. The utility of ratios is linked to the expertise of the analyst.

6. Ratios Provide only a base: The ratios are only guidelines for the analyst. He should not base his decisions entirely on them. He should study any other relevant information, situation in concern, general economic environment etc. before reaching final conclusions. The study of ratios is isolation may not always prove useful. A businessman will not afford a single wrong decision because it may have far-reaching consequences. The interpreter should use the ratios as guide and may try to solicit any other relevant information which helps in reaching a correct decision.

IMPORTANCE AND LIMITATIONS OF RATIO ANALYSIS

The ratio analysis is one of the most powerful tools of financial analysis. It is used as a device to analyse and interpret the financial position of an enterprise. Just like a doctor, as he examines his patient by recording his body, temperature, blood pressure, etc. before making his conclusion regarding the illness and before giving his treatment. Similarly a financial analyst analyses financial statements with various tools of analysis before commenting upon the financial position or weaknesses of an enterprise. A ratio acts as a symptom like blood pressure, the pulse rate or the temperature of an individual. This ratio analysis proves to be useful riot only for the management of an enterprise, but it is also important for other persons like,shareholders, creditors, investors, banks etc. The importance of ratio analysis can be understood by the following discussions.

IMPORTANCE FOR MANAGEMENT

1. Helpful in Simplifying Accounting Figures: Accounting ratios make the figures simple and understandable. They simplify, summarise and systematize the long monotonous figures. The ratio can be easily understood by those who do not know accounting. The importance of the ratios lies in the fact that they provide relationship between different figures.

2. Helpful in budgeting and Forecasting: Accounting ratios provide a reliable data, which can be compared, studied and analysed. These ratios provide sound footing for futureforecasting. They indicate the future prospects. The ratios can also serve as a basis forpreparing budgets and also determining future line of action.

3. Facilitating Comparative Analysis of the Performance: Every promising company has to compare its present performance with the previous performance and discover the plus and minus points. These points can be located by the calculation of different ratios. Causes responsible for poor performance have to be removed. Comparison with the performance of other competitive firms can also be made. Comparison tells, where the firm stands and what its prospects are. It enables both intra-firm and inter-firm comparison.

4. Helpful in Decision Making: Financial statements are prepared primarily for decision-making. But the information provided by financial statements are not an end in itself and no meaningful conclusions can be drawn from these statements alone. Ratio analysis helps in making decisions from the information provided in these financial statements.

5. It Indicates the true Efficiency and the Profitability of the Business Concern: Financial statements, i.e., Trading and Profit and Loss Account and Balance Sheet may indicate the amount of profit or the balance of different accounts but the profitability can be known by analysing financial statements, i.e., calculation of accounting ratios. Calculation of gross profit.net profit operating and earning ratios show the profit earning capacity of business.

6. Helps in Communicating: The financial strength and weaknesses of a firm are communicated in a more easy and understandable manner by the use of ratios. The information contained in the financial statements is conveyed in a meaningful manner. Thus, ratios help in communication and enhance the value of the financial statements.

7. Helps in Co-ordination: Ratios even helps in coordination which is of great importance in effective business management. Better communication of efficiency and weakness of an enterprise results in better co-ordination in the enterprise.

8. Judging the Operational Efficiency of Management: The operational efficiency of the business can be ascertained by calculating operating ratio. As the operating ratio shows the operational cost of the business so it will be in the interest of business, if it is lower. We can use operating net profit for calculating operating net profit ratio, wherein non-operating expenses and incomes are not taken into consideration.

9. Helps in Assessing Solvency Position of the Business: We can ascertain whether the firm is solvent or not by calculating solvency ratios. Solvency ratios show relationship between liabilities and assets. If total assets are lesser than the outside liabilities it shows unsound position of the business. In such case the business will try its best to improve its solvency position or to pay the loan.

10. Measuring short-term and long-term Financial Position of the Company: We can know the short-term and long-term financial position of the business by calculating various ratios. Current and liquid ratios indicate short-term financial position. Whereas debt equity ratios, fixed assets ratios and proprietory ratios show long-term financial position. In case of unhealthy short- term and long-term financial position, efforts are made to improve them.

IMPORTANCE TO INVESTORS

An investor in the company will like to assess the financial position of the concern where he is going to invest his funds. His first interest will be the security of investment and then a return in the form of dividend or interest. For the first purpose he will try to assess the value of fixed assets and the loan, raised against them. The investor will feel satisfied only if the concern has sufficient amount of assets. Long-term solvency ratios will help him in assessing financial position of the concern. Profitability ratios, on the other hand, will be useful to determine profitability position of the concern. Thus, ratio analysis will be useful to the investor in making up his mind whether present financial position of the concern warrants further investment or not.

IMPORTANCE OF CREDITORS

The creditors or suppliers extend short-term credit to the concern. They are interested know whether financial position of the concern warrants their payments at a specified time not. The concern pays short-term creditors out of its current assets. If current assets are quite sufficient to meet current liabilities then the creditors will not hesitate in extending c facilities. Current and acid test ratios will give an idea about the current financial position of the concern.

IMPORTANCE TO EMPLOYEES

The employees are also interested in the financial position of the concern especially in relation to profitability. Their wage increases and amount of fringe benefits are related to the volume of profits earned by the concern. The employees make use of information available in financial statements. Various profitability ratios relating to gross profit, operating profit, net profit etc. enable employees to put forward their view point for the increase of wages and other benefits.

IMPORTANCE TO GOVERNMENT

Government is interested to know overall strength of the industry. Various financial statements published by industrial units are used to calculate ratios for determining short-term, long-term and overall financial position of the concerns. Profitability indexes can also be prepared with the help of ratios. Government may base its future policies on the basis of, industrial information available from various units. The ratios may be used as indicators of overall financial strength of public as well as private sector, In the absence of the reliable economic information, governmental plans and policies may not prove successful,

TAX AUDIT REQUIREMENTS

Section 44 AB was inserted in the Income Tax Act by the Finance Act, 1984. Under this section every assessee engaged in any business and having turnover or gross receipts exceeding 40 lakhs is required to get the accounts audited by a chartered accountant and submit the tax audit report before the due date for filing the return of Income under section 139 (1). In case of a profession a similar report is required if gross receipts exceed Rs. 10 lakh. Clause 32 of the Income Tax Act requires that the following accounting ratios should be given:

(i) Gross Profit/Turnover

(ii) Net Profit/Turnover

(iii) Stock in Trade/Turnover

(iv) Material Consumed/Finished goods produced

Further, it is advisable to compare the accounting ratios for the year under consideration with the accounting ratios for the earlier two years so that the auditor can make necessary enquiries, if there is any major variation in the accounting ratios.

LIMITATIONS OF RATIO ANALYSIS

Ratio analysis is very important in revealing the financial position and soundness of the business. But, inspite of its advantages, it has some limitations which restricts its use. These limitations should be kept in mind while making use of ratio analysis for interpreting the financial statements.

The following are the main limitations of accounting ratios

1. False Results: Ratios are based upon the financial statements. In case, financial statements are incorrect or the data upon which ratios are based is incorrect, ratios calculated will also be false and defective. The accounting system itself suffers from many inherent weaknesses, so the ratios based upon it cannot be said to be always reliable.

2. Limited Comparability: The ratio of the one firm cannot always be compared with the performance of other firm, if uniform accounting policies are not adopted by them. The difference in the methods of calculation of stock or the methods used to record the depreciation on fixed assets will not provide identical data, so they cannot be compared.

3. Lack of Standard University Accepted Terminology: Different meanings are given to particular terms, such as some firms take profit before interest and after tax, other give take profit before interest and tax. Bank overdraft is taken as current liability but some take it as non-current. The ratio can be comparable only when uniform terminology is adopted by both the firms.

4. Limited use of a Single Ratio: A single ratio, usually does not convey much of a sense. To make a better interpretation a number of ratios have to be calculated which is likely to confuse the analyst then help him in making any meaningful conclusion.

5. 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 very careful in making a division, from ratios calculated from such financial statements. But, it may be very difficult for an outsider to know about the window dressing made by a firm.

6. Personal Bias: Ratios are only means of financial analysis and not an end in itself. Ratios have to be interpreted and different people may interpret the same ratio in different ways.

7. Price Level Changes affect Ratios: The comparability of ratios suffers, if the prices of the commodities in two different years are not the same. Changes in price affect the cost of production, sales and also the value of assets. It means that the ratio will be meaningful for comparison, if the price do not change. But, while making ratio analysis, no consideration is made to the changes in price levels and this makes the interpretation of ratios invalid.

8. Ignoring Qualitative Factors: Ratio analysis is the quantitative measurement of the performance of the business. It ignores the qualitative aspect of the firm, how so ever important it may be. It shows that ratio is only one sided approach to measure the efficiency of the business.

9. No Single Standard Ratio: There is not a single standard ratio which can indicate the true performance of the business at all time and in all circumstances. Every firm has to work in different situations and circumstances, so a particular ratio cannot be supposed to be standard for everyone.

Strikes, lock-outs, floods, wars, etc., materially affect the performance, so it cannot be matched with the circumstances in normal days.

10. Misleading Results in the absence of absolute Data: In the absence of actual data, the size of the business cannot be known. If gross profit ratio of two firms is 25%. It maybe just possible that the gross profit of one is Rs.2,000 and sales Rs.8,000. Whereas the gross profit and sales of the other firm are Rs.1,00,000 and Rs.4,00,000 respectively. Profitability of these two firms is the same but the magnitude their business is quite different.

11. Only one method Analysis: Ratio analysis is only a beginning and gives just a fraction of information needed for decision-making. So, to have a comprehensive analysis of financial statements, ratio should be used along with other methods of analysis.

12. No idea of Probable happening in Future: Ratios are an attempt to make an analysis of the past financial statements, so they are historical documents. Now-a-days keeping in view the complexities of the business, it is important to have an idea of the probable happening in future.

13. No use of Ratios if they are worked out for Insignificant and Unrelated Figures: Accounting ratios may be worked out for any two insignificant and unrelated figures as ratio of sales and investment in government securities. Such ratios may be misleading. Hence, ratios should be calculated on the basis of cause and effect relationship. One should be clear as to what is cause and what is effect before calculating a ratio between two figures.

6.4 CLASSIFICATION OF RATIOS

Ratios may be classified in a number of ways keeping in view the particular purpose. Ratios indicating profitability are calculated on the basis of Profit and Loss account, ratios indicating financial position are calculated on the basis of assets and liabilities (or Balance sheet), and ratios those which show operating efficiency or productivity or effective use of resources are calculated on the basis of figures in profit and loss account and the balance sheet (i.e., activity ratios). But, this classification of ratio is rather crude and unsuitable to determine the profitability and financial position of the business. To achieve this purpose effectively, ratios may be classified as below:

(A) Profitability Ratios

(B) Performance or Activity or Turnover Ratios

(C) Financial Position Ratios

(D) Leverage Ratios

These are discussed one by one as follows:

6.4.1 PROFITABILITY RATIOS

The primary objective of an enterprise is to earn profits. Profit earning is considered essential for the survival of the business. In the words of Lord Keynes, "Profit is the engine that drives the business enterprise." An enterprise needs profits not only for its existence but also for expansion and diversification. The investors want an adequate return on their investments, workers want higher wages, creditors want higher security for their interest and loan and so on. An enterprise can discharge its obligations to the various segments of the society only through earning profits. Profits are thus, a useful measure of overall efficiency of a business.

Profitability refers to the ability of a business to earn profit. It shows the efficiency of the business. These ratios measure the profit earning capacity of the company. Profitability has direct link with sales. This is why, we calculate these ratios on the basis of sales. Return on investments and capital is calculated on the basis of capital employed. Generally profitability ratio is calculated in percentage (%).

Further, we can study profitability ratio by classifying it in the following categories:

I. Profitability Ratios based on sales

II. Profitability Ratios based on capital employed

III. Profitability Ratios based on earning on shares

I. PROFITABILITY RATIOS BASED ON SALES

Under this heading, the following ratios are considered:

(i) Gross Profit Ratio or Gross Profit Margin

(ii) Net Profit Ratio

(iii) Net Operating Profit Ratio

(iv) Operating Ratio

(v) Expenses Ratio

(a) Raw Materials Consumed Ratio

(b) Cost of Direct Wages Ratio

(c) Manufacturing Expenses Ratio

(d) Fixed Revenue Expenses Ratio

(e) Variable Revenue Expenses Ratio

(f) Administrative Expenses Ratio

(g) Selling & Distribution Expenses Ratio

(vi) Cash Profit Ratio

(i) Gross Profit Ratio: It shows the relationship between the gross profit and sales, This ratio shows the margin of profit on sales. In order to calculate this ratio we require gross profit and sales. Gross profit, if not given, can be calculated on the basis of the following formula:

1. Gross Profit = Sales + Closing Stock – (Opening Stock + Purchases + Direct expenses)

2. Gross Profit = Sales – Cost of goods sold

Where,

Cost of goods sold = (Opening Stock + Purchases + Direct expenses – Closing Stock)

3. In case Net Profit is given, Gross profit will be calculated by adding selling, distribution and financial expenses and deducting income.

Note: The term net sales (given in the formula stated below) means sales less sales return. If sales return is not given sales will be assumed to be net sales. The formula for its calculation is as under:

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

Significance of Gross Profit Ratio/interpretation: Gross Profit ratio reveals profit earning capacity of the business with reference to its sale, Increase in gross profit ratio will mean reduction in cost and decrease in gross profit ratio will mean increase in cost or sales at lesser price. The true efficiency or profitability of the business cannot be understand by gross profit because profitability may be lesser, whereas gross profit is more. For example, if a firm earns a gross profit of Rs.20,000 during the year when its sales is worth Rs.80,000. In the next year the firm earns Rs.35,000 as gross profit when its sales are Rs.1,60,000. The example shows that profit in the next year has increased to Rs.35,000, i.e., an increase of Rs.15,000 as compared to the previous year. Whereas, the gross profit ratio shows that the profitability of the firm during the year is 25% and in the next year it has come down to 20%. It shows that we should calculate gross profit ratio in order to have the correct view of the business.

The gross profit ratio also works as a guide to the management in determining its selling and distribution expenses. The effective control system can be adopted on the basis of gross profit ratio. Higher gross profit ratio is always in the interest of the business,

Causes Responsible for Increase in G/P Ratio

Gross profit ratio may increase due to the following reasons:

(i) Increase in the sales proceeds without corresponding increase in the cost of production.
(ii) Undervaluation of opening stock.
(iii) Overvaluation of closing stock.
(iv) Decrease in the cost of production.
(v) Decrease in direct expenses.
(vi) Omission of the invoice regarding purchases.

Causes for Decrease in Gross Profit Ratio: Decrease in the gross profit ratio clearly indicates the fall in the profitability of the business. This fall may be due to the following reasons:

(1) If the goods are purchased at higher price the cost of goods will increase and grossmargin of profit will decrease.

(ii) Loss of goods due to theft, pilferage and spoilage will reduce the quantity of goods to be sold and the sales will decrease. As the firm had paid for the purchase of these goods but is not able to sell, the gross profit will fall.

(iii) An increase in the manufacturing expenses such as carriage, freight, wages and power will increase the cost of production and reduce gross profit margin.

(iv) Sales at lower rates will reduce gross profit margin.

Efforts should be made to sell goods at competitive price. Possible reasons for its decline should be identified and remedial measures should be taken.

(ii) Net Profit Ratio: This ratio establishes relationship between net profit and net sales. Net profit is the gross profit less selling, distribution and financial expense. It should be noted that the net profit is ascertained after adding operating and non-operating income to gross profit and deducting both operating and non-operating expenses therefrom. We can understand net profit better in this way:

Net Profit = (Gross Profit + Operating and non-operating income – operating and non-operating expenses)

Where,

(a) Operating Income: Operating income is that which is earned in the ordinary life of the business from trading activities.

(b) Non-trading Income: It includes income from non-trading activities, such as refund of tax, interest and dividend received, gain on sale of assets, compensation received, etc.

(c) Operating Expenses: It includes selling, administrative and distribution expenses incurred in the day-to-day affairs of the business.

Where,

(d) Non-operating Expenses: These expenses include the expenses, such as, depreciation, loss on sale of assets, discount on issue of shares and debentures, goodwill and preliminary expenses written off, reserves, dividend and interest paid, etc.

Net profit ratio can be calculated with the help of following formula:

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

Significance: Net profit ratio shows the operational efficiency of the business. Decrease in the ratio indicates managerial inefficiency and excessive selling and distribution expenses. On the other hand, increase in net profit ratio shows better performance. In case of increase the net profit ratio, performance of the management should be appreciated and plus points should be reinforced. In case of decline in the net profit ratio an investigation to find out causes for the decline in the net profit be made and corrective action should be taken to remove the causes responsible for the fall in the net profit ratio.

(iii) Net Operating Profit Ratio: This ratio establishes relationship between operating net profit and net sales. Operating net profit is ascertained as follows:

Operating Net Profit = (Gross Profit + Operating Income –Operating Expenses)

Net operating ratio can be calculated by using the following formula:

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

(iv) Operating Ratio: This ratio indicates the proportion that the cost of goods sold bears to sales. Cost of goods sold includes direct costs of goods sold as well as other operating expenses, administration, selling and distribution expenses which have matching relationship with sales. It excludes income and expenses which have no bearing on production and sales, i.e., non-operating incomes and expenses such as, interest and dividend received on investment, interest paid on long-term loans and debentures, profit or loss on sale of fixed assets or long-term investments. This ratio is calculated on the basis of formula given below:

1. Operating Ratio = $\frac{\text{Cost of goods sold} + \text{Operating Expenses}}{\text{Net Sales}} \times 100$

   OR

2. Operating Ratio = 100 – Net Profit Ratio

Where,

(a) Cost of goods sold = (Opening Stock + Purchases + Direct Expenses + Manufacturing Expenses – Closing Stock)

OR

= Sales – Gross Profit

(b) Operating expenses = Administrative Expenses + Selling and Distribution Expenses + Financial Expenses

Significance: Operating ratio reveals the cost content and operational expenses adsorbed in the sales. In case the operating ratio is higher the business will have to identify the causes for its increase, because it may not be the good symptom for the business. Higher ratio indicates lower efficiency because a major part of sales is eaten up by operating cost. On the other hand, if this ratio is lower, it indicates better efficiency of the business. Therefore, every business should try to increase its net profit which is possible, if the operating cost is reduced.,

(v) Expenses Ratio: In order to determine and scrutinise the operational efficiency of the business, every expenditure has to be matched with sales. In case, the expenses ratio is increasing, profit ratio will decline and it will mean low efficiency. The business should calculate every expense ratio individually, so that actual increase or decrease in the ratio of all the expenses may ascertained. This will enable in removing the weak points and reinforcing the plus points.

The following ratios will help in analysing operating ratio:

(a) Raw Material Consumed Ratio:

$$= \frac{\text{Material Consumed}}{\text{Net Sales}} \times 100$$

Where,

Raw Material consumed = (Opening Stock of Raw Materials + Purchase of R.M. + Carriage on Purchase of R.M. – Closing Stock of Raw Materials)

(b) Cost of Direct Wages Ratio:

$$= \frac{\text{Cost of Direct Wages}}{\text{Net Sales}} \times 100$$

(c) Manufacturing Expenses Ratio:

$$= \frac{\text{Manufacturing Expeness}}{\text{Net Sales}} \times 100$$

(d) Fixed Revenue Expenses Ratio:

$$= \frac{\text{Fixed Revenue Expenses}}{\text{Net Sales}} \times 100$$

Where,

Fixed Revenue Expenses = Factory Rent, etc.

(e) Variable Revenue Expenses Ratio:

$$= \frac{\text{Variable Revenue Exp.}}{\text{Net Sales}} \times 100$$

(f) Administrative Revenue Expenses Ratios

$$= \frac{\text{Administrative Revenue Exp.}}{\text{Net Sales}} \times 100$$

(g) Selling and Distribution Expenses Ratio:

$$= \frac{\text{Selling \& } \mathit{Distribution\ Exp.}}{\text{Net Sales}} \times 100$$

(vi) Cash Profit Ratio: The net profits of a firm are affected by the amount of depreciation charged. Further, depreciation and other non-cash items (such as goodwill written off etc.) being non-cash expenses should be added to net profit to know the amount of cash generated from operations and on this basis cash profit ratio is calculated, This ratio measures the relationship between cash generated from operations and the net sales. Thus,

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

II. PROFITABILITY RATIOS BASED ON CAPITAL EMPLOYED

The term 'capital employed' refers to the total of investments made in a business and can be defined in different ways. The four most widely used definitions of this term are:

1. Gross Capital Employed

2. Net Capital Employed

3. Proprietors' Net Capital Employed

4. Average Capital Employed

1. Gross Capital Employed: The term 'gross capital employed' usually comprises total assets (fixed and current) used in a business, at their market price. Thus, capital employed = Fixed assets + Current assets. We can make the term capital employed very clear by taking an example. If fixed assets are Rs.50,000 and current assets Rs.30,000 the amount of gross capital employed will be Rs.80,000 (50,000 + 30,000). Further, if fixed assets are Rs.50,000 at the book value (market value Rs.60,000) and current assets Rs.30,000, the amount of gross c employed will be Rs.90,000.

2. Net Capital Employed: The term 'net capital employed' comprises the total a used in business less its current liabilities.

or Net Capital Employed = Total assets – Current Liabilities

For example, if fixed assets are Rs.20,000, current assets are Rs.5,000 and current are Rs.10,000, then amount of net capital employed will be Rs.15,000 (20,000 + 5,000 – 10,000).

3. Proprietors' Net Capital Employed: Proprietors net capital employed means shareholders' funds or investments in the business, This can be calculated as follows:

Proprietors' Net Capital Employed = Fixed Assets + Current Assets – Outside liabilities (both long-term and short-term)

For example, if fixed assets are Rs.80,000, current assets are Rs.30,000, fixed loan Rs.15,000 and current liabilities are Rs.5,000 then the amount of proprietors' net capital employed will be Rs.90,000 (80,000 + 30,000 – 15,000 – 5,000).

4. Average Capital Employed: Sometimes average capital employed is preferred because earnings are on an average for a particular period. The capital employed in the beginning and at the end may be averaged to find out the figure of capital employed throughout. Average capital may also be found by deducting one-half of profit earned during the year from the capital employed at the end or one half of the profit may be added to the capital employed in the beginning. It is felt that increase in capital during the year is due tothe profit earned in that period. The difference between the capital employed in the beginning and at the end is equal to the amount of profit earned during the year. Average capital calculated as follows:

(a) Average Capital Employed

$$= \frac{\text{Opening Capital Employed} + \text{Closing Capital Employed}}{2}$$

(b) Average Capital Employed

= Closing Capital Employed – 1/2 of profit earned during the year

(c) Average Capital Employed

= Opening Capital Employed + 1/2 of Profit earned during the year.

COMPUTATION OF CAPITAL EMPLOYED

Generally two approaches are used for calculating capital employed:

A. Assets Approach Method

B. Liabilities Approach Method

A. Assets Approach Method: As capital employed consists of the total assets used in the business (minus current liabilities in case of net capital employed), it can be computed by adding the following:

1. All fixed assets used in the business like Land and building, Plant & Machinery, Furniture and fitting etc. The fixed assets should be included at their net values, either at original cost or at replacement cost after deducting depreciation. During the period of inflation, it is better to include fixed assets at replacement cost which is the current market value of the assets.

2. Investments inside the business.

3. All current assets such as, Stock, Debtors, Cash, Bank, etc.

4. To find out capital employed, current liabilities are deducted from the total of the assets as calculated above.

Following points must be kept in mind while computing capital employed:

1. Those assets which cannot be used in the business should be excluded from the list of assets.

2 Intangible assets like goodwill, patents, trademarks should also be excluded, but if they possess sale value they may be included.

3. Investment made outside business should be excluded.

4. Fictitious assets like preliminary expenses, debit balance of profit and loss account, discount on issue of shares, debentures, etc. should be excluded.

5. Obsolete asset which now cannot be used in the business should be excluded.

B. Liabilities Approach Method: Capital employed can also be calculated from the liabilities side of a balance sheet by adding all liabilities minus current liabilities in case of net capital employed and further adjusting the total for increase in the value of assets on replacement cost and for fictitious, intangible, idle and obsolete assets. From the liabilities side, capit3i employed can be calculated as follows:

		Rs.
Total of all liabilities	—	
+ Increase in the value of assets on replacement cost	—	
– Accumulated Losses		—
– Fictitious Assets		—
– Intangible Assets		—
– Idle and Obsolete assets		—
– Investments outside the business		—
Capital Employed		—

Under the head 'Capital Employed' the following ratios may be calculated:

1. Return on capital employed.

2. Return on proprietors' funds or shareholders' investments.

3. Return on Equity Share Capital.

4. Return on total assets.

1. Return on Capital Employed: This ratio is an indicator of the earning capacity of the capital employed in the business. By capital employed we mean not only the equity share capital, but also in addition to that the preference share capital, long-term liabilities, revenue reserves capital reserves, undistributed profit less fictitious assets are taken into consideration. This ratio is calculated as follows:

Return on Capital Employed = $\frac{\text{Net Profit (before Interest and Tax)}}{\text{Capital Employed}} \times 100$

Significance of Return on Capital Employed: This ratio is considered to be the most important ratio because it measures the overall efficiency of the business. The study of this ratio is significant due to the following reasons:

(i) It is a prime test of the efficiency of business. It measures not only the overall efficiency of business but also helps in evaluating the performance of various departments.

(ii) The owners are interested in knowing the efficiency and profitability of business in relation to amounts invested in it. A higher percentage of return on capital employed will satisfy the owners that their money is profitably utilised.

(iii) The performance of the enterprise can be assessed in relation to other concerns by making inter-firm and intra-firm comparison.

(iv) The borrowing policy of the enterprise may be properly formulated. The rate of interest on borrowing should always be less than the return on capital employed.

(v) The outsiders like bankers, creditors, etc. will be able to find out whether the concern is viable for giving credit or not.

(vi) Return on capital employed may help in devising future business policies for expansion or diversification, etc.

(vii) It helps in providing fair remuneration to various factors of production. Management aims to make optimum use of various factors of production for increasing rate 7etu’n on investment. The higher return on investment will enable better payment to workers and factors of production.

2. Return on Proprietors’ Fund: This ratio indicates the relationship between net profit after interest and tax and proprietors’ funds. This ratio is calculated by the following formula:

Return or Proprietors Funds = $\frac{\text{Net Profit after Interest \& } Tax}{\text{Proprietor's Funds}} \times 100$

Where,

Proprietors' funds = Equity Share Capital + Preference Share Capital + Reserve and Surplus – Fictitious assets (i.e., Preliminary expenses etc.)

3. Return on Equity Share Capital: This ratio measures the profitability of the capital invested in the business by equity shareholders. As the business is conducted with a view to earn profit, return on equity capital measures the success of business and managerial efficiency. It shows the relationship between net income after interest, taxes and dividend preference shareholders, This can be calculated as under:

Return on Equity Share Capital (ROE)

$$= \frac{\text{Net Profit After Interest,Tax and Pref,Dividend}}{\text{Equity Shareholders'Fund}} \times 100$$

4. Return on Total Assets: This ratio is calculated to measure the profit after tax against the amount invested in total assets to ascertain whether assets are being utilized properly or not. It is calculated as under:

$$\text{Return on Total Assets} = \frac{\text{Net Profit after Interest \& } Tax}{\text{Total Assets}} \times 100$$

The higher the ratio, the better it is for the concern. Sometimes in place of total assets average assets is considered when assets are ascertained on the basis of opening & closing balance of capital.

III. PROFITABILITY RATIOS BASED ON EARNING ON SHARES

Under this head the following ratios may be considered:

(i) Earning Per Share Ratio or E.P.S. Ratio.

(ii) Price Earning Ratio or P.E. Ratio.

(iii) Earning Yield Ratio.

(iv) Dividend Per Share Ratio.

(v) Dividend Yield Ratio.

(vi) Pay out Ratio.

(vii) Book Value Per Share Ratio.

(viii) Fixed Charges Cover.

(ix) Dividend Cover.

(x) Ratio of Revenue Reserve to Paid Up Capital.

(i) Earning Per Share or EPS. Ratio: If there are both preference and equity share capital, then out of net profit first of all preference dividend should be deducted in order to find out the net income available for equity shareholders, This ratio shows the relationship between net profit after preference dividend and number of equity shares. It is calculated as under:

$$\text{E.P.S.} = \frac{\text{Net Profit after Interest,Tax and Pref.Dividend}}{\text{Number of Equity Shares}}$$

The performance and prospects of the Company are affected by earning per share. If earning per share increases, there is a possibility th.at the company may pay more dividend or issue bonus shares.

Though, the earning per share is the most widely published data, yet it should be used cautiously as earning per share cannot present the various financial operations of the business, Moreover, the financial data collected in respect of different companies may be affected by different practices followed by the companies relating to stock in trade, depreciation, etc. This ultimately will affect the calculation of earnings per share and that is why earning per share should be used with precautions while comparing the performance and prospects of two companies.

(ii) Price Earning Ratio: This ratio is calculated by the following formula:

$$\text{Price Earning Ratio} = \frac{\text{Market Price per Equity Shares}}{\text{Earning per Share}}$$

It is very important ratio in order to know whether the shares of the company are undervalued or in predicting future market price of shares. This can be done by comparing the price earning ratios of two companies. For example, if earning per share of X Ltd. is Rs.10 and the market price of its equity shares is Rs.40. So price earning ratio will be 4 times (i.e., 40 ÷ 10), while price earning ratio of other companies is 5, then it can be concluded that equity shares of X Ltd. is under valued by Rs.10 (i.e., 50 – 40), because if 4 = 40 then 5 will be equal to 50. This ratio helps the shareholders to decide whether the shares of a company should be purchased or not.

(iii) Earning Yield Ratio: This ratio shows the relationship between earning per share and market price per share. In other words, this is the reciprocal of price earning ratio. This ratio can be obtained by using the following formula:

$$\text{Earning Yield Ratio (E. Y. R.)} = \frac{\text{Earning per Share}}{\text{Market Price Per Share}} \times 100$$

(iv) Dividend per Share Ratio: This ratio is calculated by dividing the amount of dividend distributed by the number of equity shares. This can be obtained by using the

following formula:

$$\text{Dividend per Share Ratio (D.P.S.)} = \frac{\text{Dividend to Equity Shareholders}}{\text{No.of Equity Shares}}$$

This ratio serves the same purpose as indicated in the case of Earning per share ratio. But sometimes current profitability may not be reflected by this ratio because dividends are paid out of accumulated profits as well.

(v) Dividend Yield Ratio: Shareholders are the real owners of the company and they are interested in real sense in the earnings distributed and paid to them as dividends. Therefore, dividend yield ratio is calculated to evaluate the relationship between dividend per share paid and the market value per share, It is calculated by the following formula:

$$\text{Dividend Yield Ratio (D.Y.)} = \frac{\text{Dividend per Share}}{\text{Market Price per Share}} \times 100$$

This ratio is very significant from view-point of those investors who are interested in dividend income.

(vi) Pay-out Ratio: This ratio is known as rate of dividend to net profit and is calculated as under:

$$\text{Pay our Ratio} = \frac{\text{Equity Dividend}}{\text{Net Profit after tax, Interest and Preference Dividend}} \times 100$$

$$= \frac{\text{Dividend per Equity Share}}{\text{Earning per Share}} \times 100$$

This ratio indicates as to what proportion of earning per share has been used for paying dividend and what has been retained for ploughing back. This ratio is very important from shareholder's point of view as it tells him that if a company has used whole or substantially the whole of its earnings for paying dividend and retained nothing for future growth and expansion Purposes, then there will be very dim chances of capital appreciation in the price of shares of such company. In other words, an investor who is more interested in capital appreciation must look for a company having low payout ratio.

(vii) Book Value Per Share Ratio: This ratio is calculated by dividing the net tangible assets by the number of shares including preference shares. If the book value (intrinsic value) of equity shares only has to be calculated then, preference share capital is subtracted from the amount of tangible assets and is divided only by the number of equity shares. For this the following formula is adopted (used) :

Book Value (Intrinsic Value) per share

$$= \frac{\text{Net Assets}}{\text{No. of Equity Shares+Pref. Shares}}$$

OR

$$= \frac{\text{Net Assets}}{\text{No. of Equity Shares}}$$

OR

$$= \frac{\text{Shareholders' Fund}}{\text{No.of Equity Shares+Pref.Shares}}$$

(viii) Fixed Charges Cover or Debt Service Ratio: This ratio is important from lender's point of view and indicates whether the business can earn sufficient profits to pay periodically the interest charges on fixed or long-term loans and debentures. It is calculated as follows:

$$\text{Fixed Charges Cover} = \frac{\text{Profit before Interest and Tax}}{\text{Interest on long-term liabilities}}$$

(ix) Dividend Cover: To some extent it is the reciprocal of pay out ratio and is calculated as follows:

$$\text{Dividend Cover} = \frac{\text{Profit after Interest and Tax}}{\text{Dividend}}$$

It reveals the ability of the concern to maintain dividend in future.

(x) Ratio of Revenue Reserve to Paid up Capital: This ratio is calculated by establishing the relationship between revenue reserves and paid up capital. It is ascertained by the following formula:

$$\text{Ratio of Revenue Reserve to Paid up Capital} = \frac{\text{Revenue Reserve}}{\text{Paid up Capital}} \times 100$$

This ratio highlights upon the dividend policy of the concern. If ratio is higher, dividend policy followed by the management will be treated as conservative.

Example 1.

Following is the Profit & Loss Statement of Sri Ram Traders for the year ended 31st Dec., 2012:

Statement of Profit and Loss of Sir Ram Traders

(for the year ended 31st Dec., 2012)

Particulars			Note No.	Amount	Amount
				Rs.	Rs.
Sales				5,20,000	
Less:	Returns			20,000	
	Revenue from Operations (Net Sales)			5,00,000	
Add:	Other Income:				
	Non-operating Income			5,000	
	Total Revenue				5,05,000
Less:	Expenses:				
	Cost of goods sold:	Rs.			
	Opening Stock	75,000			
Add:	Purchase	2,50,000			
	Carriage				
5,000					
	Wages	5,000			
	Factory Rent	10,000			
		3,45,000		2,55,000	
Less:	Closing Stock	90,000		80,000	
	Administration Expenses			30,000	
	Selling & Distribution Expenses			10,000	

Finance Expenses Other Non-operating Expenses Net Profit during the year		5,000	3,80,000 1,25,000

You are required to show the following Ratios:

1. Gross Profit Ratio
2. Operating Ratio
3. Expenses Ratio
4. Operating Net Profit Ratio
5. Net Profit Ratio
6. Fixed Revenue Expenses and Sales Ratio.

Solution.

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

$$= \frac{2,45,000}{5,00,000} \times 100 = 49\%$$

2. Operating Ratio = $\frac{\textit{Cost of Goods Sold+Operating Exp.}}{\text{Net Sales}} \times 100$

$$= \frac{2,55,000+1,20,000}{5,00,000} \times 100$$

$$= \frac{3,75,000}{5,00,000} \times 100 = 75\%$$

Where,

(i) Cost of Goods Sold = (Selling Price – Gross Profit)

= (5,00,000 – 2, 45,000) = Rs.2,55,0000

Cost of Goods Sold = (Opening Stock + Purchases + Carriage + Wages + Factory Rent – Closing Stock)

= (75,000 + 2,50,000 + 5,000 + 5,000 + 10,000 – 90,000)

= Rs.2,55,000

(ii) Operating Expenses = (Administration Exp. + Selling Exp. + Financial Exp.)

= (80,000 + 30,000 + 10,000) = Rs.1,20,000

3. Expenses Ratios:

(i) Administration Expenses Ratio

$$= \frac{\text{Administration Exp.}}{\text{Net Sales}} \times 100$$

$$= \frac{80{,}000}{5{,}00{,}000} \times 100 = 16\%$$

(ii) Selling and Distribution Exp. Ratio

$$= \frac{\text{S.\& } D.Expenses}{\text{Net Sales}} \times 100$$

$$= \frac{30{,}000}{5{,}00{,}000} \times 100 = 6\%$$

(iii) Finance Exp. Ratio = $\frac{\text{Finance Expenses}}{\text{Net Sales}} \times 100$

$$= \frac{10{,}000}{5{,}00{,}000} \times 100 = 2\%$$

(iv) Other Non-Operating Exp. Ratio

$$= \frac{\text{Other Non−operating Exp.}}{\text{Net Sales}} \times 100$$

$$= \frac{5{,}000}{5{,}00{,}000} \times 100 = 1\%$$

4. Operating Net Profit Ratio = $\frac{\text{Operating Net Profit}}{\text{Net Sales}} \times 100$

$$= \frac{1{,}25{,}000}{5{,}00{,}000} \times 100 = 25\%$$

5. Net Profit Ratio = $\frac{\text{Net Profit}}{\text{Net Sales}} \times 100$

$$= \frac{1{,}25{,}000}{5{,}00{,}000} \times 100 = 25\%$$

6. Fixed Revenue Expenses and Sales Ratio

(Factory Rent) $= \frac{Fixed\ Revenue\ Exp.}{Net\ Sales} \times 100$

$$= \frac{10{,}000}{5{,}00{,}000} \times 100 = 2\%$$

Note: Finance Expenses has been treated as operating expenses.

Example 2.

Calculate from the following information:

(a) Gross Profit Ratio

(b) Net Operating Profit Ratio

(c) Net Profit Ratio

(d) Operating Ratio

(e) Return on Total Resources

Particulars	2011	2012
	Rs.	Rs.
Sales	10,00,000	15,00,000
Less: Cost of Sales	6,00,000	8,00,000
Gross Profit	4,00,000	7,00,000
Less: Operating Expense	1,00,000	2,00,000
Net Operating Income	3,00,000	5,00,000
Add: Non-operating Income	20,000	25,000
	3,20,000	5,25,000
Less: Non-Operating Expenses	10,000	15,000
Net Profit	3,10,000	5,10,000
Total Assets	50,00,000	55,00,000

Solution.

(a) Gross Profit Ratio = $\frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$

$$\text{For 2011} = \frac{4,00,000}{10,00,000} \times 100 = 40\%$$

$$\text{For 2012} = \frac{7,00,000}{14,00,000} \times 100 = 46.67\%$$

(b) Net Operating Profit Ratio = $\frac{\text{Net Operating Profit}}{\text{Net Sales}} \times 100$

$$\text{For 2011} = \frac{3,00,000}{10,00,000} \times 100 = 30\%$$

$$\text{For 2012} = \frac{5,00,000}{15,00,000} \times 100 = 33.33\%$$

(c) Net Profit Ratio = $\frac{\text{Net Profit}}{\text{Net Sales}} \times 100$

For 2011 = $\frac{3,10,000}{10,00,000} \times 100 = 31\%$

For 2012 = $\frac{5,10,000}{15,00,000} \times 100 = 34\%$

(d) Operating Ratio = $\frac{\text{Cost of Sales+ Ope. Exp.}}{\text{Net Sales}} \times 100$

For 2011 = $\frac{6,00,000+1,00,000}{10,00,000} \times 100 = 70\%$

For 2012 = $\frac{8,00,000+2,00,000}{15,00,000} \times 100 = 66.67\%$

(e) Return on Total Resources = $\frac{\text{Net Profit before Tax}}{\text{Total Assets}} \times 100$

For 2011 = $\frac{3,10,000}{10,00,000} \times 100 = 6.2\%$

For 2012 = $\frac{5,10,000}{55,00,000} \times 100 = 9.27\%$

Example 3

You are required to calculate return on capital employed from the following information:

		Rs.
Net Profit after tax		1,00,000
Rate of Income Tax 50%		
10% Debentures		6,00,000
Current Assets	8,00,000	
Current Liabilities		3,00,000
Fixed Assets		5,00,000
Depreciation up-to-date		1,00,000

Solution.	Rs.
1. Net Profit before Tax $\left\{\frac{1,00,000\times100}{50}\right\}$	2,00,000
+ Interest on Debentures $\left\{\frac{6,00,000\times10}{100}\right\}$	60,000
	Rs.2,60,000

2. Capital Employed

= [(Fixed Assets + Current Assets) – (Current Liabilities + Depreciation)]

= [(5,00,000 + 8,00,000) – (3,00,000 + 1,00,000)]

= [(13,00,000 – 4,00,000)]

= Rs.9,00,000

$\therefore$ Return on Capital Employed = $\frac{\text{Net Profit before Tax and Interest}}{\text{Capital Employed}} \times 100$

$= \frac{2,60,000}{9,00,000} \times 100$

= 28,89%

Example 4

Following are the information of Awkash Company Ltd. For the year 2012:

Profit before Tax	Rs.20,00,000
Rate of Tax	60%
Proposed Dividend	20%
9% Pref. Share Capital	Rs.10,00,000
Equity Share Capital (30,000 × 100)	Rs.30,00,000
Reserve of the beginning of the year	Rs.20,00,000

Calculate for the Equity Share Capital:

(i) Earning per Share

(ii) Book value per Share

(iii) Price Earning Ratio

(iv) Capitalisation Ratio

(v) Dividend per Share

(vi) Payout Ratio

(vii) Dividend Yield Ratio

The current Market Price of the Equity Share is Rs.200.

Solution:

1. Earning Per Share = $\frac{\text{Net Profit –Tax and Pref. Dividend}}{\text{No. of Shares}}$

$= \frac{7,10,000*}{30,000}$ = Rs.23.67

*Working Note:		Rs.
Profit before Tax		20,00,000
Less: Tax 60%	12,00,000	
		8,00,000
Less: Pref. Divi. $\left\{\frac{10,00,000 \times 9}{100}\right\}$	90,000	
N/P after Tax & Dividend		7,10,000

2. Book Value per Share = $\frac{\text{Equity Shareholder's Fund}}{\text{No. of Equity Shares}}$

$\therefore$ Book value per Share = $\frac{51,00,000^{**}}{30,000}$ = Rs.170.30

**Working Notes:	Rs.		Rs.
Equity Share Capital		30,00,000	
Reserve (Opening)			20,00,000
Profit	7,10,000		
Less: Proposed Dividend $\frac{30,00,000 \times 20}{100}$	6,00,000		1,10,000
			51,10,000

3. Price Earning Ratio = $\frac{\text{Market Price Per Share}}{\text{Income per Share}}$

$= \frac{200}{23.67}$= Rs. 8.45

4. Capitalisation Ratio = $\frac{\text{Earning Per Share}}{\text{Market Price per Share}} \times 100$

$= \frac{23.67}{200} \times 100 = 11.84\%$

5. Dividend Per Share = $\frac{\text{Dividend paid on Equity Share}}{\text{No .of Equity Shares}}$

$= \frac{6,00,000}{30,000}$= Rs. 20

6. Payout Ratio = $\frac{\text{Dividend Per Share}}{\text{Earning Per Share}} \times 100$

$$= \frac{20}{23.67} \times 100 = 8.45\%$$

7. Dividend Yield Ratio = $\frac{\text{Dividend Per Share}}{\text{Market Price of the Share}} \times 100$

$$= \frac{20}{200} \times 100 = 10\%$$

6.4.2 ACTIVITY OR TURNOVER RATIOS

Activity ratios are those ratios, which indicate the activity and operational efficiency of the business concern. The better the management of assets, the larger is the amount of sales and the profit. Activity ratios measure the efficiency of effectiveness with which a firm manages its resources. These ratios are also called performance or turnover ratios because they indicate the speed with which assets are converted into sales. These ratios are usually calculated on the basis of sales or cost of goods sold and are always expressed in number of times. Such ratios should be calculated separately for each type of asset. If this ratio is higher, it indicates good profitability and proper utilization of resources. Following are the important turnover (activity) ratios usually calculated by a concern:

1. Inventories or Stock Turnover Ratio
2. Assets Turnover Ratio
3. Fixed Assets Turnover Ratio
4. Current Assets Turnover Ratio
5. Working Capital Turnover Ratio
6. Total Capital Employed Turnover Ratio
7. Debtors Turnover Ratio
8. Average Collection Period
9. Creditors Turnover Ratio
10. Average Credit (Payment period)

1. INVENTORIES OR STOCK TURNOVER RATIO

This ratio establishes relationship between cost of goods sold during a given period andthe average amount of inventory held during the period. This ratio reveals the number of times in which the finished stock is turned over during a given accounting period. Higher the ratio, the better it is, because it shows that finished stock is rapidly turned over. On the other hand, a low stock turnover ratio is not desirable because it reveals the accumulation of obsolete stock or carrying of too much stock. This ratio is calculated with the help of following formula:

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$$

where,

1. Cost of goods sold = Opening Stock + Purchases + Manufacturing Expenses or Direct Expenses – Closing Stock

OR

= Net Sales – Gross Profit

2. Average Stock = $\frac{\text{Opening Stock + Closing Stock}}{2}$

Average stock is generally found by adding opening stock and closing stock and then dividing the total by two. But in the case of concern like Sugar Mills, Tea Gardens, etc. which have high seasonal factors, average stock calculated in the above fashion may be misleading. In such cases, it would be proper to divide the total monthly stocks for the full year by 13. For example, Opening Stock of Jan. 2007 is Rs.15,000 and the Closing Stocks are : Jan. Rs.35,000, Feb. Rs.30,000, March Rs. 45,000, April Rs. 20,000, May Rs.50,000, June Rs.40,000, July Rs.30,000, August Rs.25,000, September Rs.40,000, October Rs.10,000, Nov. Rs.30,000 and Dec. Rs.20,000. The average stock is calculated as below:

$$= \frac{15{,}000 + 35{,}000 + 30{,}000 + 45{,}000 + 20{,}000 + 50{,}000 + 40{,}000 + 30{,}000 + 25{,}000 + 40{,}000 + 10{,}000 + 30{,}000 + 20{,}000}{13}$$

$$= \frac{3{,}90{,}000}{13} = \text{Rs.}30{,}000$$

Interpretation of Stock Turnover Ratio (Importance): Stock turnover ratio measures the velocity of conversion stock into sales. Usually, a high inventory (stock) turnover indicates efficient management of inventory because more frequently the stocks are sold, the lesser amount of money is required to finance the inventory. A low inventory turnover ratio indicates an inefficient management of inventory. A low inventory turnover ratio implies over Investment in inventories, dull business, poor quality of goods, stock accumulation and low profits as compared to total investments. A very high inventory turnover ratio does not necessarily mean higher profits. Because, this may arise due to selling inventories at very low prices.

It may also be mentioned here that there are no 'rules of thumb' or standard inventory turnover ratio. It may be different for different firms depending upon the nature of industry and business conditions.

2. ASSETS TURNOVER RATIO

This ratio shows the relationship between total actual assets and cost of goods sold or net sales. It is calculated with the help of following formula:

$$\text{Total Assets Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Total Asssets (Actual)}}$$

OR

$$= \frac{\text{Net Sales}}{\text{Total Assets (Actual)}}$$

Interpretation of Assets Turnover Ratio: A high assets turnover ratio is an indicator of proper utilization of assets but if it is excessive high ratio then, it indicates over trading of total assets while a low ratio reveals idle utilisation of total assets. The traditional standard f the ratio is two times.

3. FIXED ASSETS TURNOVER RATIO

This ratio expresses the number of times fixed assets are being turned-over in a stated period. It is calculated as under:

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Cost of Goods Sold or Net Sales}}{\text{Net Fixed Assets}}$$

Interpretation of Fixed Assets Turnover Ratio: This ratio shows how well the fixed assets are being used in the business. The ratio is more important in case of manufacturing concerns because sales are produced not only by the use of current assets but also by amount invested in fixed assets. The higher is the ratio, the better is the performance. On the other hand, a low ratio indicates that fixed assets are not being efficiently utilised.

4. CURRENT ASSETS TURNOVER RATIO

This ratio shows the relationship between current assets and cost of goods sold or net sales. It is calculated as under:

Current Assets Turnover Ratio $=\frac{\text{Cost of Goods Sold or Net Sales}}{\text{Current Assets}}$

Interpretation: This ratio shows how well current assets are dealt in business. This ratio is more important in case of non-manufacturing concerns. This ratio tells about over investments, under investments or ideal investments and current assets.

5. WORKING CAPITAL TURNOVER RATIO

Working capital means excess of current assets over current liabilities.This ratio show the relationship between working capital and cost of goods sold or net sales, It is calculated as under:

Working Capital Turnover Ratio $=\frac{\text{Cost of Goods Sold or Net Sales}}{\text{Net Working Capital}}$

where,

Net Working Capital = (Current Assets – Current Liabilities)

Interpretation: Working Capital Turnover Ratio indicates the velocity of new working capital. This ratio indicates the number of times the working capital is turned over in the course of a year. This ratio measures the efficiency with which the working capital is being used by a firm. A higher ratio indicates efficient utilisation of working capital and a low ratio indicates otherwise. But a very high ratio is not a good symptom for any business hence, care must be taken while interpreting the ratio.

6. TOTAL CAPITAL EMPLOYED TURNOVER RATIO

This ratio shows the relationship between gross capital employed and cost of goods sold or net sales. This ratio is measured on the basis of the following formula:

T.C.E.T. Ratio $=\frac{\text{Cost of Goods Sold or Net Sales}}{\text{G. Capital Employed or Total Actual Assets}}$

Interpretation (Importance): This ratio ensures whether the capital employed has been effectively used or not. This is also the test of managerial efficiency and business performance. Higher total capital turnover ratio is always in the interest of the company.

7. DEBTORS TURNOVER RATIO

A business concern may sale goods on cash as well as on credit. Credit is one of the important elements of sales promotion. The volume of sales can be increased by adopting a liberal credit policy. But the effect of a liberal credit policy may result in tying up substantial funds of a firm in the form of trade debtors. Trade debtors are expected to be converted into cash within a short period and are included in current assets. Hence, the liquidity position of a concern to pay its short-term obligations in time depends upon the quality of trade debtors. Two kinds of ratios can be computed to evaluate the quality of debtors, they are (i) Debtors turnover ratio and (ii) Average collection period.

This is also known as receivable turnover ratio. It establishes relationship between credit sales and average debtors. This is calculated on the basis of the following formula:

$$\text{Debtors Turnover Ratio} = \frac{\text{Credit Sales}}{\text{Average Debtors or Receivables}}$$

where,

1. Average Debtors $= \frac{Opening\ Debtors + Closing\ Debtors}{2}$

2 Credit sales is separately given or it may be the difference between total sales and cash sales.

3. In case of receivable turnover ratio Debtors and B/R are added together to determine the receivable. In case of newly started business debtors in the beginning will not be available so debtors at the end will be supposed to be average debtors.

Significance: Debtors turnover ratio indicates the efficiency with which debts are collected. It will be in the interest of business, if the ratio is higher which will indicate that debts are collected quickly.

8. AVERAGE COLLECTION PERIOD

This ratio indicates, days within which debts are collected. Prompt debt collection is always in the interest of the business, because cash will be readily available. It can be calculated on the basis of following formula:

Trade Receivables

1. Average Collection Period (per day) = $\frac{Trade\ Receivables}{Net\ Credit\ Sales\ for\ the\ year} \times 365$

2. Average Collection Period (per week) = $\frac{Trade\ Receivables}{Net\ Credit\ Sales} \times 52$

3. Average Collection Period (per month) = $\frac{Trade\ Receivables}{Net\ Credit\ Sales} \times 12$

where,

Trade Receivables = Debtors + Bills Receivables

Interpretation (Significance): This ratio is a measure of collectability of accounts receivables and tells about how the credit policy of the company is being enforced. If collectionperiod lies between 2 to 3 months, it is treated as good symptom for the business. But, if the Period exceeds to it, then efforts should be made to make the collection machinery efficient so that the amount due from debtors may be realised in time, Higher the ratio, more the chances of bad debts and lower the ratio, less the chances of bad debts.

9. CREDITORS TURNOVER RATIO

This ratio explains the velocity with which creditors are paid and establishes relationship between credit purchases and amount payable to them. Accounts payable includes creditors Plus bills payable. The following formula is used to calculate it:

Creditors Turnover Ratio = $\frac{\text{Net Credit Purchases}}{\text{Average Amount Payable}}$

Where,

1. Amount Payable = Creditors + Bill Payable

2. Average Amount Payable = $\frac{\text{Opening Balance+Closing Balance}}{2}$

Significance/Interpretation: A high ratio indicates that creditors are not paid in time while a low ratio gives an idea that the business is not taking full advantages of credit period allowed by the creditors.

10. AVERAGE CREDIT (PAYMENT PERIOD)

This ratio also indicates the speed with which the payment against credit purchase made. The following formula is used to calculate the ratio:

1. Average Payment Period (per day) = $\frac{\text{Average Trade Payable}}{\text{Net Credit Purchase}} \times 365$

2. Average Payment Period (per week) = $\frac{\text{Average Trade Payable}}{\text{Net Credit Purchase}} \times 52$

3. Average Payment Period (per month) = $\frac{\textit{Average Trade Payable}}{\textit{Net Credit Purchase}} \times 12$

where,

Average Trade Payable = Average of Creditors and B/P

Example 5.

Calculate working Capital Turnover Ratio from the following Information:

	Rs.
Sales	10,00,000
Gross Profit	25%
Debtors	2,50,000
Stock	1,80,000
B/R	80,000
Prepaid Expenses	60,000
Creditors	1,30,000
B/P	50,000
O/s Expenses	10,000

Solution.

1. Cost of Sales = Sales – Gross Profit

$= 10{,}00{,}000 - 10{,}00{,}000 \times \frac{25}{100}$

$= 10{,}00{,}000 - 2{,}50{,}000 =$ Rs.7,50,000

2. Working Capital = Current Assets – Current Liabilities

= [(Debtors + Stock + B/R + P.P. Exp.)

– (Creditor + B/P + O/s Exp.)]

= [(2,50,000 + 1,80,000 + 80,000 + 60,000)

– (1,30,000 + 50,000 + 10,000)]

= [5,70,000 – 1,90,000]

= Rs. 3,80,000

∴ Working Capital Turnover Ratio

$$= \frac{\text{Cost of Sales}}{\text{Working Capital}} = \frac{7,50,000}{3,80,000} = 1.97 \text{ times}$$

Example 6.

From the following particulars, calculate the inventory ratio for each year:

	2011	2012
	Rs.	Rs.
Opening Stock	40,000	65,000
Purchase during the year	2,55,000	3,40,000
Sales during the year	3,00,000	4,00,000
Closing Stock	65,000	50,000

Solution.

1. Cost of Goods Sold = Opening Stock + Purchase – Closing Stock

For 2011 = 40,000 + 2,55,000 – 65,000

= Rs. 2,30,000

For 2012 = 65,000 + 3,40,000 – 50,000

= Rs. 3,55,000

2. Average Stock = $\frac{\text{Opening Stock} + \text{Closing Stock}}{2}$

For 2011 = $\frac{40,000+65,000}{2}$ = Rs. 52,500

For 2012 = $\frac{65,000+50,000}{2}$ = Rs. 57,500

3. Inventory Ratio = $\frac{\text{Cost of Sales}}{\text{Average Stock}}$

For 2011 = $\frac{2,30,000}{52,500}$ = 4.4 : 1 times

For 2012 = $\frac{3,55,000}{57,500}$ = 6.2 : 1 times

Example 7.

Calculate monthly collection period from the following information:

	Rs.
Opening Debtors	18,000
Closing Debtors	22,000
Opening B/R	11,000
Closing B/R	9,000
Total Sales	2,00,600
Sales Return	600

You are also required to comment on the result.

Solution:

1. Average Debtors = $\frac{18,000+22,000}{2}$

$= \frac{40,000}{2}$ = Rs. 20,000

2. Average B/R = $\frac{11,000+9,000}{2}$

$= \frac{20,000}{2}$ = Rs. 10,000

3. Net Sales = Total Sale – Sales Return

= 2,00,600 – 600 = 2,00,000

$\therefore$ Debt Collection Period = $\frac{\text{A. Debtors+A.B/R}}{\text{Net Sales}}$

$= \frac{20,000+10,000}{2,00,000} \times 12$

$= \frac{30,000}{2,00,000} \times 12$ = 1.8 months.

Comment: Generally a firm gives two to three months' credit to the customers. In this question debts collection period is favourable, because it is 1.8 months, which is below than the credit policy of the firm.

Note: If, it is required to calculate weekly collection period then following formula will be used:

$$= \frac{Average\ (Debtors+B/R)}{Net\ Credit\ Sales} \times 52$$

Example 8.

(a) A trader has stock worth Rs.40,000. His Stock Turnover is 8 times. If he sells goods at a profit of 20% on sales. Find out his profit.

(b) From the following information find out Debtors Turnover Ratio and impact on profitability if it increases upto 6 times.

	Rs.
Net Credit Sales	29,836

Average Debtors	6,089

(c) Calculate average collection period from following information by assuming 360 days in a year:

Total Sales	Rs.24,00,000
Debtors	Rs.2,30,000

Ratio of Credit Sales to Total Sales 20%

(d) If cost of goods sold is Rs.1,20,000 and Gross Profit Ratio is 20%, find the amount of sales.

Solution:

(a) Stock T.O. Ratio = $\frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$

Let Cost of Goods Sold be Rs.x

∴ $8 = \frac{x}{40,000}$

or x = Rs.3,20,000

Profit on Cost of Goods Sold = 20% of Sales

If Sales = Rs.100, then Profit = Rs.20 and Cost = Rs.80 (100 – 20)

∴ Amount of Profit = $\frac{3,20,000}{80} \times 20$ = Rs. 80,000

(b) Debtors Turnover Ratio = $\frac{\text{Net Credit Sales}}{\text{Average Debtors}}$

$= \frac{29,836}{6,089}$ = 4.9 Times

If Debtors Turnover is increased to 6 times, then average debtors will be Rs.4,973 (i.e., 29,836 ÷ 6) and average debtors will decrease by Rs.1,116 (i.e., 6,089 – 4,973). If rate of return is assumed to be 10%, then profit will increase by Rs.111.60 $\left\{\frac{1,116 \times 10}{100}\right\}$

(c) Average Collection Period = $\frac{\text{Debtors} \times 360}{\text{Credit Sales}}$

Credit Sales = $\frac{24,00,000}{100} \times 20$ = Rs.4,80,000

∴ Average Collection Period = $\frac{2,30,000}{4,80,000} \times 360$ = 172.5 Days

(d) 20% Gross Profit Ratio means on sale of Rs.100, Gross Profit will be Rs.20 and Cost will be Rs.80 (i.e., 100–20).

$$\text{Amount of Sales} = \frac{\text{Cost} \times 100}{80}$$

$$= \frac{1{,}20{,}000 \times 100}{80}$$

$$= \text{Rs.}1{,}50{,}000$$

6.4.3 FINANCIAL POSITION RATIOS

These ratios are calculated to judge the financial position of the business concern from long-term as well as short-term solvency point of view. It includes all ratios which highlight upon the financial position of the concern. But the financial position may mean differently to different persons interested in the business concern. Shareholders, management, investors, bankers, trade creditors and auditor all have different views about the concept of financial position. Thus, each person keeping into account his own interest uses such ratios which may enlighten him about the financial position of the business concern. Whatever the ratios are used to judge the financial position, they are all based on the items of balance sheet. Therefore, they are also known as balance sheet ratios. The following are the ratios which are calculated in this respect.

1. Current Ratio
2. Liquid Ratio
3. Absolute Liquidity Ratio
4. Proprietary Ratio
5. Debt-Equity Ratio
6. Capital Gearing Ratio
7. Solvency Ratio
8. Long-term Debt Capitalisation Ratio
9. Debt to Tangible Assets Ratio

10. Ratio of Fixed Assets to Proprietors' Fund

11. Ratio of Current Assets to Proprietors' Fund

12. Time Interest Earned/Interest Coverage Ratio

13. Preference Dividend Coverage Ratio

14. Dividend and Profit Ratio

15. Reserve to Capital Ratio

16. Cash to Debt Service Ratio

17. Cash Position Ratio

Note: One component of this ratio is assumed to be 1 (one) and other is changed proportionately, i.e., 25:12 = 2.1 : 1.

1. CURRENT RATIO

It is a ratio of current assets to current liabilities. The ratio indicates the short-term financial soundness of the company. It judges whether current assets are sufficient to meet the current liabilities. The company must be able to meet its current obligation out of the current assets, It should not depend upon its long-term sources to pay its short-term liabilities. It is also known as working capital ratio. The ratio is calculated on the basis of the following formula:

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

where,

(a) Current Assets: Current Assets are those assets which are converted into cash within a year. These assets are cash in hand, cash at bank, B/R, stock, prepaid expenses, short-term investments, short-term marketable securities, work-in-progress, Deposit with Bank (S.T.), money at call and short notice, etc.

(b) Current Liabilities: Current Liabilities are those liabilities which are to be paid within a year. These liabilities are creditors, bills payable, outstanding expenses, short-term loans, Bank overdraft if not a permanent arrangement, Provision for taxation, Bank Loan (ST.) Interest due to fixed liabilities if it is not accumulated, etc.

Interpretation of Current Ratio: Generally 2 : 1 is considered as ideal ratio for a concern i.e., current assets should be twice of current liabilities. If the current assets are two times of the current liabilities, there will be no adverse effect on business operation when the payment of current liabilities is made. If the ratio is less than 2, difficulties may be arised in payment of current liabilities and day-to-day operations of the business may suffer. If the ratio is higher than 2, it is very comfortable for the creditors but, for the concern, it is indicator of idle funds and a lack of enthusiasm for work.

A high current ratio may not be favourable due to the following reasons:

1. There may be slow moving stocks. The stocks will pile up due to poor sale.

2. The figures of debtors may go up because debt collection is not satisfactory.

3. The cash or bank balances may be lying idle because of insufficient investment opportunities.

Current Liabilities	***Current Assets***
1. Bills Payable (B/P)	1. Cash in Hand
2. Sundry Creditors	2. Cash at Bank
3. Outstanding Expenses	3. Deposits with Bank (S.T.)
4. Bank Overdraft	4. Marketable Securities
5. Provision for Taxation	5. Debtors
6. Interest due to Fixed Liabilities	6. Prepaid Expenses
7. Income Tax Payable	7. Bills Receivable (B/R)
8. Bank Loan (Short-term)	8. Money at Call and Short Notice
	9. Stocks:
	Finished Stock
	Work-in-Progress
	Raw Materials

On the other hand, a low current ratio may be due to the following reasons:

1. There may not be sufficient funds to pay off liabilities.

2. The business may be trading beyond its capacity. The resources may not warrant the activities.

Important Factors about Short-term Financial Position

A number of factors should be taken into consideration before reaching a conclusion about short-term financial position. Some of these factors are as such:

1. Type of Business: Current ratio is influenced by the type of business. A business with heavy investments in fixed assets may be successful even if the ratio is low, because it has not to pay suppliers etc. quickly. On the other hand, a trading concern will require a high current ratio, because it has to pay its suppliers quickly.

2. Types of Products: The type of products in which a business deals also influences current ratio. A business dealing in goods whose demand changes fast, will require a higher current ratio. On the other hand, if products have more intrinsic value e.g., gold, silver, metals, etc. a lower current ratio may also do,

3. Reputation of the Business Concern: A business unit with better goodwill and reputation may afford a small current ratio because the turnover is more and creditors also allow credit for longer periods. A new concern or a concern with poor goodwill and reputation will need higher current assets to pay current liabilities in time.

4. Type of Assets: The type of current assets in the business also influence interpretation of current ratio. If the current assets include large amounts of slow moving stocks then even a high ratio may not be satisfactory.

5. Seasonal Influence: Current assets and current liabilities change with seasons. In a peak season current assets will be more and current ratio will be high. On the other hand, this ratio will go down when the season is off.

All the above mentioned factors should be taken into consideration, while interpreting current ratio.

IMPORTANCE AND LIMITATIONS OF CURRENT RATIO

Current ratio is a general and quick measure of liquidity of a firm. It represents the “margin of safety’ to the creditors and other liabilities. It is most widely used for making short-term analysis of the financial position or short-term solvency of a firm.

With the help of this ratio, the amount of current assets and current liabilities can also be calculated provided the amount of working capital is given. For example, if current ratio is 2.5 and working capital is 60,000; the amount of current assets and current liabilities will be calculated as under:

As we know,

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

and, Working Capital = Current Assets – Current Liabilities

Supposing Current Liabilities = Rs.100

Then Current Assets = 100 x 2.5 = 250

$\therefore$ Working Capital = 250 – 100 = Rs.150

Now,

If W.C. is Rs.150 then Current Assets are Rs.250

If W.C. is Rs.1 then Current Assets are = $\frac{250}{150}$

If W.C. is 60,000 then Current Assets are = $\frac{250}{150} \times 60{,}000 =$ Rs.1,00,000

and Current Liabilities = C.A. –W.C.

= 1,00,000– 60,000 = Rs.40,000

But one has to be careful while using current ratio as a measure of liquidity because it suffers from the following limitations:

LIMITATIONS OF CURRENT RATIO

(a) It is a Crude Ratio: It is a crude ratio because it measures only the quantity and meet the quality of current assets.

(b) Window Dressing: Valuation of current assets and window dressing is another problem of current ratio. Current assets and liabilities are maintained in such a way that current ratio loses its significance. Window dressing may be indulged in the following ways:

(i) Over valuation of current assets.

(ii) Obsolete or worthless stocks are shown in the closing inventory at their costs instead of writing them off.

(iii) Recording in advance cash receipts applicable to the next year's sale.

(iv) Omission of a liability for merchandise included in inventory.

(v) Treating a short-term obligation as a long-term liability.

(vi) In adequate provision for bad and doubtful debts.

(vii) Inclusion of debtors advance payment for purchase of fixed assets.

Window dressing is done to show current ratio at a particular figure. It does not the real financial position of the concern. The inference drawn on such a ratio will be faulty deceptive.

2. LIQUID RATIO

Liquid ratio is also known as Quick or Acid Test ratio. It is more rigorous test of liquidity than the current ratio. Liquid ratio shows the relationship between quick assets and current or liquid liabilities, An asset is said to be liquid if it can be converted into cash within a short period without loss of value. In that sense cash in hand and cash at bank are the most liquid assets. The other assets which can be included in liquid assets are B/R, sundry debtors, marketable securities and short-term investments. Inventory cannot be treated as liquid asset because they can notbe converted into cash immediately without a sufficient loss of value. In the same manner prepaid expenses are also excluded from the list of liquid assets, because they are not expected to converted into cash. The quick ratio can be calculated on the basis of following formula:

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

where,

1. Liquid Assets	2. Current Liabilities
Cash in hand	Outstanding Expenses
Cash at Bank	Bills Payable
Bills Receivable	Sundry Creditors

Sundry Debtors	Short-term advances
Marketable Securities	Income Tax Payable
Temporary Investments	Dividend Payable
	Bank Overdraft (if S.T.)

Note: Sometimes, bank overdraft is not included in current liabilities while calculating acid test or liquid ratio on the argument that bank overdraft is generally a permanent way of financing and is not subject to be collected on demand. In such cases, bank overdraft is excluded from current liabilities for calculating liquid ratio.

Interpretation: Generally a high liquid ratio is an indication that the firm is liquid and has the ability to meet its current or liquid liabilities in time and on the other hand, a low liquid ratio represents that the firm's liquidity position is not good. As a rule of thumb liquid ratio of 1: 1 is considered satisfactory. It is generally thought that if quick assets are equal to current liabilities then the concern may be able to meet its short-term obligations. Although quick ratio is more rigorous test of liquidity than the current ratio, it should be used cautiously and 1: 1 rule should not be used blindly. A quick Ratio of 1: 1 does not necessarily mean satisfactory liquidity position if all the debtors can not be realised and cash is needed immediately to meet the current obligations. In the same manner, a low quick ratio does not necessarily mean a bad liquidity position as inventories are not absolutely non-liquid. Hence, a firm having a high quick ratio may not have a satisfactory liquidity position if it has slow-paying debtors. On the other hand, a firm having a low quick ratio may have a good liquidity position if it has fast moving inventories.

Significance of Liquid Ratio: The liquid ratio is very useful in measuring the liquidity position of a firm. It measures the firm's capacity to pay off current obligations immediately and is more rigorous test of liquidity than the current ratio. It is used as a complementary ratio to the current ratio.

3. ABSOLUTE LIQUIDITY RATIO

It is also known as cash ratio. Though receivables are generally more liquid than inventories, there may be some debts regarding their real stability in time. So to get an idea about the absolute liquidity of a concern, both receivables (B/R, debtors) and inventories are excluded from current assets and only absolute liquid assets, such as cash in hand, cash at bank and readily realisable securities are taken into consideration. Absolute liquidity ratio is calculated follows:

$$\text{Absolutely Liquid Ratio} = \frac{\text{Cash in hand and bank+Short-term marketable Securities+Short-term Investments}}{\text{Liquid Liabilities}}$$

The acceptable norm for this ratio is 50% or 0.5 : 1 or 1 : 2 i.e., Rs.1 worth absolute liquid assets are considered adequate to pay Rs.2 worth liquid liabilities in time as all the creditors are not expected to demand cash at the same time and then cash may also be realised from debtors and inventories.

4. PROPRIETARY RATIO

This ratio establishes the relationship between shareholders funds to total assets of the firm. Proprietary ratio is an important ratio for determining long-term solvency of the firm. The components of this ratio are shareholders' funds and total assets (real). The shareholders' funds are equity share capital, preference share capital, reserves, undistributed profits and surplus. Out of this amount, accumulated loss should be deducted. The ratio can be calculated as under:

$$\text{Proprietary Ratio} = \frac{\text{Shareholder's Funds}}{\text{Total Assets}}$$

where,

Shareholders' Funds = Equity Share Capital + Pref. Share Capital

+ Reserves and Undistributed Profits

Accumulated loss (i.e., Debit balance of P/L

A/c, underwriting commission etc.)

Interpretation: 1:1 is considered as the ideal ratio, If higher the ratio, better is the long-term solvency position of the company. This ratio indicates the extent to which the assets of the company can be lost without affecting the interest of creditors of the company.

5. DEBT-EQUITY RATIO

This ratio indicates the relationship between outsiders funds and shareholders' funds, It is also known as External-Internal Equity Ratio, which is calculated to measure the relative claims of outsiders and the shareholders against the firm's assets. It is calculated on the basis of the following formula

Debt Equity Ratio = $\frac{\text{Outsiders Funds}}{\text{Shareholder's Funds}}$

where,

1. Outsider's Funds = Debentures + Long-term loan + Short-term loan + Current Liabilities

2. Shareholders' Fund = (Equity Share Capital ÷Preference Share Capital + Capital or Net Worth Reserve + Revenue Reserve + Reserve for Contingencies + Retained Earnings + Sinking Funds) – Fictitious assets such as accumulated losses and deferred expenses.

When the accumulated losses and deferred expenses are deducted from Shareholders' Funds it is called 'Net Worth'. But, generally the value of net worth is used for shareholders' funds.

Some writers are of the opinion that Preference Share Capital should be included in outsiders. Funds not in shareholders' Fund. The reason is that a fixed rate of dividend is payable on these shares and further they may be redeemable after a certain period. Thus, there are differences of opinion regarding the treatment of Preference Shares while calculating this ratio. However, it is advised that depending upon the nature of Preference Shares and the purpose of analysis, redeemable Preference Shares may be included in outsiders funds and irredeemable preference shares in shareholders' funds. Further, in case of time for redemption of preference shares is 12 years or more, it should be included in shareholders' funds. In the same way there is a controversy regarding current liabilities also. Some writers are of view that current liabilities do not reflect long-term commitments and hence should be excluded from outsiders' funds. However, we are of the opinion that to calculate, debt-equity ratio current liabilities should be included in outsiders' funds. The ratio calculated on the basis of outsiders' funds excluding current liabilities may be termed as ratio of long-term debt to shareholders' funds, which

Long-term Debts to Shareholders Funds $=\frac{\text{Long-term Debt}}{\text{Shareholder's Funds}}$

Interpretation: A ratio of 1:1 may be usually considered to be a satisfactory ratio although there cannot be any 'rule of thumb' for all types of business. In some businesses a high ratio 2:1 or even more is considered satisfactory, say, for example in the case of contractor's business. Generally speaking, a low ratio is considered as favourable from the long-term creditors' point of view because a high proportion of owners funds provide a large margin of safety for them. A high debt-equity ratio which indicates that the claim of outsiders are greater than those of owners, may not be considered by the creditors because it gives a lesser margin of safety for them at the liquidation of a company. Thus, interpretation of this ratio depends upon the purpose of analysis, the financial policy and the nature of business of the firm.

6. CAPITAL GEARING RATIO

This ratio is used to describe the relationship between equity share capital including reserves and surpluses to Preference Share Capital and other fixed interest bearing loans. If Preference Share Capital and other Fixed Interest Bearing Loans exceed the equity share capital including reserves, the firm is said to be highly geared. On other hand, if the equity share capital including reserves etc. exceeds the Preference Share Capital and other Fixed Interest Bearing Loans the firm is said to be low geared.

This ratio is calculated on the basis of following formula:

Capital Gearing Ratio $= \frac{\text{Equity Share Capital+Reserve \& } Surplus}{\text{Pref.Share Capital+Fixed Interest Bearing Loan}}$

OR

$$= \frac{\text{Fixed Income Bearing Funds}}{\text{Equity Shareholders' Fund}}$$

This ratio must be carefully planned as it affects the company's capacity to maintain a uniform dividend policy during difficult trading periods that may occur. Too much capital should not be raised by way of debentures, because debentures do not share in business losses.

7. SOLVENCY RATIO

Solvency is a state, where the company is supposed to be financially sound and capable of meeting its liability out of its assets. This ratio indicates the relationship between total liabilities and total assets of the business. This ratio is calculated on the basis of following formula:

$$\text{Solvency Ratio} = \frac{\text{Total outside Liabilities}}{\text{Total Actual Assets}}$$

The firm is supposed to be solvent if its solvency ratio is lesser than i.e., total outside liabilities are lesser than total assets. In case, the ratio is more than one, it will mean total liabilities are more than total assets and it will show the firm will not be able to meet its liabilities. It shows the financial unsoundness and the state of probable insolvency.

This ratio may also be calculated with the following formula but interpretation will change.

$$\text{Solvency Ratio} = \frac{\text{Total Actual Assets}}{\text{Total Liabilities}}$$

8. LONG-TERM DEBT CAPITALISATION RATIO

This ratio shows the relationship between long-term debt and total capitalisation. So far as this ratio is lesser, long-term debts will be more secured and vice-versa. This ratio is calculated on the basis of following formula:

$$\text{Long term Debt Capitalisation Ratio} = \frac{\text{Long}-\text{term Debt}}{\text{Total Capitalisation}}$$

where,

Total Capitalisation = Equity Share Capital + Pref. Share Capital + Reserves

& Surplus + Long-term Debt.

9. DEBT TO TANGIBLE ASSETS RATIO

This ratio shows the relationship between total debts (short & long-term debts) and total tangible assets. For this purpose, intangible assets (i.e., goodwill, trade mark etc.) and fictitious assets (i.e., preliminary expenses, underwriting commission etc.) are deducted from total 5sets. This ratio is calculated on the basis of following formula:

$$\text{Debt to Tangible Assets Ratio} = \frac{\text{Total Debts (Short \& } Long-term}{\text{Total Tangible Assets}}$$

So far as this ratio is lesser debts will he more secured.

10. RATIO OF FIXED ASSETS TO PROPRIETORS' FUND

The ratio establishes the relationship between Fixed Assets and Shareholders' Funds. This ratio can be calculated as follows:

Fixed Assets Ratio to Shareholders Funds $= \frac{\text{Fixed Assets (after depreciation)}}{\text{Shareholders}'\text{Funds}}$

The ratio of Fixed Assets to Shareholders' Funds (Net worth) indicates the extent to which shareholders' funds are sunk into the fixed assets. Generally, the purchase of Fixed Assets should be financed by shareholders' equity including reserves, surplus and retained earnings. There is no 'rule of thumb' to interpret this ratio but 60 to 65% is considered to be satisfactory ratio in case industrial undertaking.

11. RATIO OF CURRENT ASSETS TO SHAREHOLDERS' FUNDS

This ratio is calculated by dividing total current assets by the amount of Shareholders' Funds which is given below:

Ratio = $\frac{Current\ Assets}{Shareholder's Funds}\ Or\ \frac{Current\ Assets}{Shareholders' Funds} \times 100$

The ratio indicates the extent to which Proprietors' Funds are invested in current assets. There is no 'rule of thumb' for this ratio and depending upon the nature of the business there may be different ratios for different firms.

12. INTEREST COVERAGE RATIO

This ratio is used to test the debt-service capacity of a firm. It is calculated by dividing the net profit before interest and taxes by fixed interest charges:

Interest Coverage Ratio $= \frac{\text{N/P (before Interest \& } Tax\text{)}}{\text{Fixed Interest Charges}}$

Interpretation: Interest coverage ratio indicates the number of times interest is covered by the Profits available to pay the interest charges. Long-term creditors of the firm are interested in knowing the firms ability to pay interest on their long-term borrowing. Generally, higher the ratio, more safe are the long-term creditors because even if earnings of a firm fall, the firm shall be able to meet its commitment of fixed interest charges, But a too high interest coverage ratio may not be good for the firm because it may imply that firm is not using debt as a source of finance so as to increase the earnings per share.

13. PREFERENCE DIVIDEND COVERAGE RATIO

The interest coverage ratio does not take into consideration other fixed obligation like payment of preference dividend and payment of loan instalments. Therefore, preference dividend ratio is calculated as follows:

Preference Dividend Coverage Ratio = $\frac{\text{Net Profit After Interest and Tax}}{\text{Preference Dividend}}$

14. DIVIDEND AND PROFIT RATIO

This ratio shows the relationship between total profit earned and dividend distributed among the shareholders, So far as, this ratio is lesser, it is considered to be good for the company because it makes the internal financial condition of the firm strong.

It is calculated on the basis of the following formula:

Dividend and Profit Ratio = $\frac{\text{Dividends}}{\text{Total Profits}}$

15. RESERVE TO CAPITAL RATIO

This ratio indicates the relationship between reserve and capital. More reserves show financial soundness of the firm, because it will be able to meet future losses, if any out of these reserves. This is calculated as under:

Reserve to Capital Ratio = $\frac{\text{Reserve}}{\text{Capital}}$

16. CASH TO DEBT-SERVICE RATIO

Cash to Debt-Service Ratio is also known as Debt Cash Flow Coverage Ratios. It is an important over the Interest Coverage Ratio and is calculated as follows:

Cash to Debt-Service Ratio = $\frac{Annual\ Cash\ Flow\ before\ Interest\ \&\ Tax}{Interest + \frac{Sinking\ Fund\ Appropriation\ on\ Debt}{1 - Tax\ Rate}}$

The logic of this ratio is that the interest should be paid out of cash inflow of the business and not from profits, Generally, higher the ratio better it is, as far as, long-term solvency of the firm is considered.

17. CASH POSITION RATIO

This ratio shows the relationship between cash + cash equivalent to current liabilities far as the ratio is more, it is considered good for current liabilities. This is calculated as follows:

$$\text{Cash Position Ratio} = \frac{\text{Cash+Bank+Marketable Securities}}{\text{Current Liabilities}}$$

Example 9.

From the following Balance Sheet of Shyam Lal Ltd., you are required to calculate the following:

1. Proprietary Ratio
2. Reserve to Capital Ratio
3. Debt-Equity Ratio
4. Total Liabilities to Total Assets Ratio
5. Liquidity Ratio
6. Fixed Assets and Current Assets Ratio

ShyamLal Ltd.

(Balance Sheet as at 31st Dec., 2012)

Particulars	Notes No.	Amount
1. EQUITY & LIABILITIES:		Rs.
1. Shareholder's Funds:		
(a) Share Capital		60,000
(b) Reserve & Surplus		
General Reserve		20,000
Statement of Profit and Loss		10,000
2. Non-current Liabilities		
Debentures		25,000
3. Current Liabilities:		35,000
Total (1 + 2+ 3)		1,50,000
II. ASSETS:		
1. Non-current Assets:		
Fixed Assets:		1,00,000
2. Current Assets:		
Stock (Inventory)		20,000
Trade Receivable (Debtors)		20,000
Cash and Cash Equivalents:		10,000
Total (1+2)		1,50,000

Solution.

1. Proprietary Ratio = $\frac{\text{Proprietor'sFund}}{\text{Total Assets}}$

Where, Proprietor's Fund = Equity Share Capital + Pref. Share Capital + Reserve Fund + Undistributed P/L

60,000 + 20,000 + 10,000 = Rs. 90,000

Or Proprietor's Fund = Total Assets – Outside Liabilities

= 1,50,000 – 60,000 = Rs.90,000

$\therefore$ Proprietary Ratio = $\frac{\text{Proprietor'sFund}}{\text{Total Assets}}$

$= \frac{90,000}{1,50,000} = 1 : 1.67$

2. Reserve Capital Ratio = $\frac{\text{Capital}}{\text{Reserve}}$

$= \frac{60,000}{20,000} = 3 : 1$

3. Debt-Equity Ratio = $\frac{\text{Outsider'sFund (Long-term)}}{\text{Shareholder's Funds}}$

$= \frac{25,000}{90,000} = 1 : 3.6$

Or

Debt-Equity Ratio = $\frac{\text{Long-term Loan+Current Liabilities}}{\text{Shareholder's Fund}}$

$= \frac{60,000}{90,000} = 1 : 1.5$

where,

1. Proprietor's Fund = 60,000 + 20,000 + 10,000 = Rs. 90,000
2. Long-term Outsiders' Fund = 25,000 + 35,000 = Rs.60,000
3. Total Liabilities to Total Assets Ratio

$= \frac{\text{Total Outside Liabilities}}{\text{Total Assets}}$

$$= \frac{60{,}000}{1{,}50{,}000} = 1:2.5$$

4. Liquidity Ratio = $\frac{\text{Liquid Assets}}{\text{Current Liabilities}}$

$$= \frac{30{,}000}{35{,}000} = 1:1.7$$

5. Fixed Assets and Current Assets Ratio

$$= \frac{\text{Fixed Assets}}{\text{Current Assets}}$$

$$= \frac{1{,}00{,}000}{50{,}000} = 2:1$$

Example 10.

From the following Balance Sheet of a Company you are required to calculate:

(1) Solvency Ratio

(2) Liquidity Ratio

(3) Fixed Assets Ratio

(4) Capital Gearing Ratio

(5) Absolute Liquid Ratio

Company Ltd.
Balance Sheet as at 31st Dec., 2012

Particulars		Notes No.	Amount
1. EQUITY & LIABILITIES:			Rs.
1. Shareholder's Funds:			
(a) Share Capital			1,00,000
2. Non-current Liabilities			
Debentures			75,000
3. Current Liabilities:			25,000
	Total (1 + 2+ 3)		2,00,000
II. ASSETS:			
1. Non-current Assets:			
Fixed Assets:			80,000
2. Current Assets:			
Trade Receivables:	Rs.		
Debtors	70,000		80,000
B/R	10,000		

Cash and Cash Equivalents:	10,000	
Cash	10,000	20,000
Marketable Securities		20,000
Stock (Inventory)		2,00,000
Total (1+2)		

Solution.

1. Solvency Ratio = $\frac{\text{Total Assets}}{\text{Total Outside Liabilities}}$

$= \frac{2,00,000}{1,00,000} = 2:1$

2. Liquidity Ratio = $\frac{\text{Liquid Assets}}{\text{Current Liabilities}}$

$= \frac{1,00,000}{25,000} = 4:1$

3. Fixed Assets Ratio = $\frac{\text{Proprietor's Fund+Long term Loans}}{\text{Fixed Assets}}$

$= \frac{1,75,000}{80,000} = 2.19:1$

4. Capital Gearing Ratio = $\frac{\text{Equity Share Capital}}{\text{Pref.Share Capital+ Long term Loan}}$

$= \frac{1,00,000}{80,000} = 1.33:1$

5. Absolute Liquid Ratio = $\frac{20,000}{25,000} = 0.8:1$

Example 11.

The following data are being taken from the records of Tata Corporation as on 31st Dec., 2012:

	Rs.
Cash	30,000
Debtors	15,000
Stock	10,000
P.P. Expenses	5,000
Creditors	15,000
B/P	3,000
Sales	50,000
Purchases	36,000
Purchase Return	6,000

On the basis of above information compute the following:

1. Working Capital Ratio

Solution.

1. Working Capital Ratio = $\frac{\text{Current Assets}}{\text{Current Liabilities}}$

$$= \frac{60{,}000}{18{,}000} = 3.3 : 1$$

Example 12.

Answer the following:

(1) The Current Ratio of A Ltd. is 4.5 : 1 and Liquidity Ratio is 3 : 1, Inventory is Rs. 60,000. What are the Current Liabilities?

(2) Total Current Liabilities of B Ltd. are Rs.1,00,000 and Liquidity Ratio is 3 : 1; Inventory is Rs.50,000. Find the Current Assets and Current Ratio.

(3) A Company has the Shareholders' Equity of Rs. 2,00,000. Total Assets are 60% of Shareholders Equity, while the Assets turnover is 4. If the Company has an inventory turnover of 6, determine the amount of inventory.

(4) Rs.1,00,000 is the Net Sales of a concern during 2012. If inventory turnover is 4 times. Calculate the inventory at the end if it is 1.5 times in the beginning.

Solution:

i.e., $\left[\frac{4.5}{1} - \frac{3}{1} = \frac{1.5}{1}\right]$

(1) Current Ratio = 4.5 : 1

Acid-test Ratio = 3.0 : 1

(Diff. Being Inventory) = 1.5 : 1

Let the Current Liabilities be x

Therefore, $\frac{60{,}000}{x} = \frac{1.5}{1}$

or $x = \frac{60{,}000}{1.5}$

or Current Liabilities = Rs. 40,000

(2) Liquid Ratio = $\frac{\text{Liquid Assets}}{\text{Current Liabilities}}$

or $\frac{\text{Liquid Assets}}{\text{Current Liabilities}} = \frac{3}{1}$

or $\frac{\text{Liquid Assets}}{1{,}00{,}000} = \frac{3}{1}$

or Liquid Assets = Rs. 3,00,000

Therefore, Current Assets = Liquid Assets + Inventory

= 3,00,000 + 50,000

= Rs. 3,50,000

(3) Shareholders' Equity (given) = Rs.2,00,000

Total Assets = $\frac{2,00,000 \times 60}{100}$ = Rs. 1,20,000

Assets Turnover = $\frac{\text{Sales}}{\text{Total Assets}}$

or $\frac{Sales}{1,20,000} = \frac{4}{1}$

or Sales = Rs.4,80,000

Again, Inventory Turnover = $\frac{\text{Sales}}{\text{Inventory}}$

Or $\frac{4,80,000}{\text{Inventory}} = \frac{6}{1}$

or Inventory = $\frac{4,80,000}{6}$

or Inventory = Rs.80,000

(4) Let the inventory at the beginning be x

Therefore, at the end it will be 1.5x

Inventory Turnover = $\frac{\text{Sales}}{\text{Average Stock}}$

or $\frac{4}{1} = \frac{1,00,000}{\frac{x+1.5x}{2}}$

or $4\left\{\frac{x+1.5x}{2}\right\}$ = 1,00,000

or $4x + 6x = 2,00,000$

or $10x = 2,00,000$

or $x = \frac{2,00,000}{10}$

or $x =$ Rs. 20,000

Inventory at the beginning is Rs. 20,000

Therefore, at the end it will be = 20,000 × 1.5 = Rs.30,000

Example. 13

The Ratios relating to Ranchi Stores are given below:

1. Gross Profit Ratio	10%
2. Stock Velocity	6 months
3. Debtors Velocity	3 months
4. Creditors Velocity	3 months

Gross Profit for the year ending 31st Dec., 2012 amounts to Rs.1,00,000. Closing Stock is equal to Opening Stock.

Find out the following:

1. Sales
2. Closing Stock
3. Sundry Debtors
4. Sundry Creditors

Solution.

1. Sales

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

or $$10 = \frac{10{,}000}{Sales} \times 100$$

or $$10 \times \text{Sales} = 1{,}00{,}000 \times 100$$

or $$\text{Sales} = \frac{1{,}00{,}00{,}000}{10}$$

or $$\text{Sales} = \text{Rs. } 10{,}00{,}000$$

2. Closing Stock:

$$\text{Stock Velocity} = \frac{\text{Average Stock}}{\text{Cost of Goods Sold}}$$

Cost of Goods Sold = Sales – G.P.

= 10,00,000 – 1,00,000

= Rs. 9,00,000

$\therefore$ $$\text{Stock Velocity} = \frac{\text{Average Stock}}{\text{Cost of Goods Sold}}$$

or $$\frac{6}{12}(9{,}00{,}000) = \text{A Average Stock}$$

or $$\frac{54{,}00{,}000}{12} = \text{Average Stock}$$

or $$54{,}00{,}000 = 12 \times \text{Average Stock}$$

or $$\text{Average Stock} = \frac{54{,}00{,}000}{12}$$

or $$\text{Average Stock} = \text{Rs.}4{,}50{,}000$$

Since opening and closing stocks are the same so the value of closing stock is Rs. 4,50,000.

3. Sundry Debtors:

$$\text{Debtors Velocity} = \frac{\text{Total Debtors}}{\text{Sales}}$$

or $$\frac{3}{12} = \frac{\text{Debtors}}{10{,}00{,}000}$$

or $$\frac{3}{12}(10{,}00{,}000) = \text{Debtors}$$

or $$3 \times 10{,}00{,}000 = 12 \times \text{Debtors}$$

or $$\text{Debtors} = \frac{30{,}00{,}000}{12}$$

or $$\text{Debtors} = \text{Rs. } 2{,}50{,}000$$

4. Sundry Creditors :

Creditors' Velocity = $\frac{\text{Total Creditors}}{\text{Purchase}}$

Now, Cost of Goods = Opening Stock + Purchase – Closing Stock

Or 9,00,000 = 4,50,000 + Purchase – 4,50,000

or Purchase = Rs.9,00,000

∴ Creditors' Velocity = $\frac{\text{Total Creditors}}{\text{Purchase}}$

or $\frac{3}{12} = \frac{\text{Total Creditors}}{9{,}00{,}000}$

or 27,00,000 = 12 × Total Creditors

or Creditors = $\frac{27{,}00{,}000}{12}$

∴ Creditors = Rs. 2,25,000

6.4.4 LEVERAGE RATIOS

Leverage refers to an increased means of accomplishing some purpose. In Financial Management, it refers to employment of funds to accelerate rate of return to owners. It may be favourable or unfavourable. When earnings are more than fixed cost of the funds, it is called favourable. An unfavourable leverage exists if the rate of returns remains to be lower. It can be used as a tool of financial planning by the finance manager. Leverage may be:

1. Operating Leverage
2. Financial Leverage
3. Composite Leverage

1. OPERATING LEVERAGE

It occurs when with fixed costs the percentage change in profits due to change in sales volume is greater than the percentage change in volume. It shows the extent of the change in Earnings Before Interest and Tax (EBIT) as a result of change in sales volume. Two important points, such as fixed costs and break-even point should be considered about operating leverage. If the fixed costs of the firm are relatively large substantial portion of its contribution margin is appropriated to cover these fixed costs.

Once the break-even- point is reached, all contribution margin becomes the profit of the firm. If there is small percentage of increase in sales near the break-even point, it will cause large percentage of increase in earnings. On the other hand a small drop is sales eliminates the entire earnings near the break-even-point.

The significance of operating leverage lies in the fact that it tells the finance manager about the impact of change in sales revenue and operating income. Thus, A firm with high degree of operating leverage will experience much large effect on EBIT because of small change in sales. As per as possible a firm should avoid to operate under conditions of a higher degree of operating leverage as it is a high risk situation. It will be desirable to operate at sufficiently above the break-even-point to avoid the danger of a sharp fluctuations in profits because of variation in sales. It may be noted carefully that the degree of operating leverage goes on decreasing with every increase in sales volume above the break-even point. It is calculated by the following formula:

$$\text{Operating Leverage} = \frac{\text{Marginal Contribution}}{\text{Earning before Interest and Tax}}$$

Or

$$\text{Operating Leverage} = \frac{\text{C}}{\text{EBIT}}$$

Where,

Marginal Contribution = Sales – Variable Cost

2. FINANCIAL LEVERAGE

When a firm procures debt capital to finance it needs, it is said to have financial leverage. It tells the extent of the change in Earning Before Tax (EBT) due to change in operating income (EBIT). It is calculated as follows:

$$\text{Financial Leverage} = \frac{\text{Earning before Interest and Tax}}{\text{Earning Before Tax}}$$

Or

$$\text{Financial Leverage} = \frac{\text{EBIT}}{\text{EBT}}$$

It may be favourable or unfavourable. If the rate of Return on Investment (ROI) of a firm is higher than the cost of debt capital, it is said to have favourable financial leverage. On the other hand, if the rate of Return on Investment (ROI) is lower than the cost of debt capital, the firm is said to have unfavourable financial leverage Favourable financial leverage is also known as trading on equity.

3. COMPOSITE LEVERAGE

If we multiply operating leverage to financial leverage. we can get the value of composite leverage, thus:

Composite Leverage = Operating Leverage × Financial Leverage

Example 14.

Calculate

1. Operating Leverage
2. Financial Leverage
3. Composite Leverage

From the Information given below:

	Original		(Rs. in Lakhs) After an increase of 10% on Sales	
		Rs.		Rs.
Sales (1,500 units at Rs.1p.u.)	1,500		1,650	
Less: Variable Cost (Rs.0.60 p.u.)		900		990
Contribution		600		660
Less: Fixed Costs		450		450
Profit before Interest & Tax	150		210	
Less: Interest		50		50
Profit before Tax		100		160
Less: Tax at 55%		55		88
Profit after Tax		45		72

Solution.

Computation of Leverages

	Level of Operations	
	Original	After an Increase of 10% in sales
1. Operating Leverage $= \frac{Marignal\ Contribution}{Earning\ before\ Interest\ and\ Tax}$	$\frac{600}{150} = 4$	$\frac{660}{210} = 3.14$
2. Financial Leverage $= \frac{Earning\ before\ Interest\ and\ Tax}{Earning\ before\ Tax}$	$\frac{150}{110} = 1.50$	$\frac{210}{160} = 1.31$
3. Composite Leverage = Operating Leverage × Financial Leverage	4 × 1.5 = 6	3.14 × 1.31 = 4.11

6.5 CHECK YOUR PROGRESS

A. State whether the following statements are True or False:

1. Ratio analysis is a technique of analysis and interpretation of financial statements.
2. Ratios may be classified in a number of ways keeping in view the particular purpose.
3. Activity ratio refers to the ability of a business to earn profit.
4. Net Operating Profit ratio establishes relationship between gross profit and net sales.

B. Fill in the blanks:

1. Return on Capital Employed ratio is an indicator of the ___________of the capital employed in the business.
2. _________are those ratios, which indicate the activity and operational efficiency of the business concern.
3. ______________means excess of current assets over current liabilities.
4. Creditors Turnover Ratio explains the________ with which creditors are paid and establishes relationship between credit purchases and amount payable to them.

6.6 SUMMARY

Ratio analysis is one of the important tools of financial statement analysis to study the financial structure of the business fleeces. Financial ratio analysis is the calculation and comparison of ratios which are derived from the information in a company's financial statements. The level and historical trends of these ratios can be used to make inferences about a company's financial condition, its operations and attractiveness as an investment. Financial ratios are calculated from one or more pieces of information from a company's financial statements. A ratio gains utility by comparison to other data and standards. Ratios are classified as profitability, activity, financial position and leverage ratio. Although financial ratio analysis is well-developed and the actual ratios are well-known, practicing financial analysts often develop their own measures for particular industries and even individual companies.

6.7 KEYWORDS

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

Current Liabilities: Current liabilities are short-term financial resources or payable in short span of time within a year.

Balance Sheet or Positional Statement Ratios: These type of ratios are calculated from the balance sheet of the enterprise which normally reveals the financial status of the position of the enterprise and so on.

Capital Structure Ratios: The capital structure position are analysed through leverage ratios as well as coverage ratios.

Income Statement Ratios: These ratios are computed from the statements of Trading, Profit & Loss account of the enterprise.

6.8 SELF ASSESSMENT TEST

1. What is Ratio Analysis? What are the objects and limitations of Ratio Analysis?
2. Explain any three of the following with examples in brief:

   1. Current Ratio 2. Inventory Turnover Ratio

3. Debt-Equity Ratio 4. Capital Gearing Ratio

5. Liquidity Ratio 6. Proprietary Ratio

7. Operating Ratio 8. Capital Employed

3. Explain the role of Ratio Analysis in the interpretation of Financial Statements. Examine the limitations of Ratio Analysis, if any?

4. “Ratio like Statistics have an air of precision and finality about them which at times may be misleading”. Explain.

5. Calculate (i) G.P. Ratio, (ii) Operating Profit Ratio and (iii) Net Profit Ratio from the following:-

	Rs.
Opening Inventories	3,00,000
Closing Inventories	4,20,000
Purchases	14,00,000
Wages	3,70,000
Carriage Inwards	1,50,000
Administrative Exp.	84,000
Selling Exp.	36,000
Income Tax	1,00,000
Profit on Sale of Fixed Assets	20,000
Sales	24,00,000

6. From the following information ascertain the average payment period:

	Rs.
Total Sales	5,00,000
Sales Return	1,00,000
Opening Stock	60,000
Closing Stock	40,000
Closing Creditors	75,000
Closing Bills Payable	15,000
Gross Profit Ratio	25%

7. The following is the Balance Sheet of Amit Company Ltd. as on 31st March, 2013:

Amit Ltd.

(Balance sheet as at 31st March, 2013)

Particulars	Notes No.	Amount	Amount
1. EQUITY & LIABILITIES:		Rs.	Rs.
1. Shareholder’s Funds:			
(a) Share Capital			1,80,000
(b) Reserve & Surplus			

General Reserve			30,000
Statement of Profit & Loss			50,000
Preliminary Expenses			(20,000)
2. Non-current Liabilities			
Mortgage Loan @ 10%			80,000
3. Current Liabilities:			
Trade Payables:			
Creditors		40,000	
Bills Payable		20,000	60,000
Outstanding Expenses			20,000
Total (1 + 2+ 3)			4,00,000
II. ASSETS:			
1. Non-current Assets:			
Fixed Assets:			
2. Current Assets:			
Trade Receivables:			
Debtors		1,00,000	
Bills Receivables		40,000	1,40,000
Cash and Cash Equivalents:			
Cash at Bank			60,000
Total (1+2)			4,00,000

Additional Information:

Sales for the year 2013 Rs.20,000

Calculate:

1. Capital Employed Turnover 2. Fixed Assets Turnover Ratio
3. Working Capital Turnover Ratio 4. Current Assets Turnover Ratio
5. Total Assets Turnover Ratio

8. Following are the summarised Profit & Loss Statement of Jayant Ltd. for the year ending 31st March, 2013 and the Balance Sheet as on that date:

Statement of Profit and Loss of Jayant Ltd.

(for the year ending 31st March, 2013)

Particulars	Notes No.	Amount	Amount
		Rs.	Rs.
Sales (Revenue from Operations)			
Add: Other Income:			8,50,000
Non-operating Incomes:			
Interest			
Profit on Sale of Shares		3,000	
Total Revenue		6,000	9,000
Less: Expenses:			8,59,000
Cost of Goods Sold: **Rs.**			
Opening Stock 99,500			

Add: Purchases 5,45,250			
Incidental Expenses 14,250			
6,59,000		5,10,000	
Less: Closing Stock (1,49,000)			
Operating Expenses:			
Selling and Distribution Exps. 30,000			
Administration Exps. 1,50,000		1,95,000	
Financial Exps. 15,000			
Non-operating Expenses:		4,000	(7,09,000)
Loss on Sale of Assets:			1,50,000
Net Profit during the year			

Balance Sheet

(as at 31st March, 2013)

Particulars	Notes No.	Amount	Amount
1. EQUITY & LIABILITIES:		Rs.	Rs.
1. Shareholder's Funds:			
(a) Share Capital			
Equity Share Capital			2,00,000
(b)Reserve & Surplus			
Reserve			90,000
Statement of Profit & Loss			60,000
2. Current Liabilities:			1,30,000
Total (1 + 2)			4,80,000
II. ASSETS:			
1. Non-current Assets:			
Land/Building			1,50,000
Plant/Machinery (Tangible)			80,000
2. Current Assets:			
Inventory (Stock)			1,49,000
Trade Receivable (Debtors)			71,000
Cash and Bank			30,000
Total (1+2)			4,80,000

From the above statement you are required to calculate the following ratios:

1. Current Ratio
2. Operating Ratio
3. Stock T.O. Ratio
4. Return on Total Resources Ratio
5. Turnover of Fixed Assets Ratio
6. Turnover of Total Assets Ratio

9. Answer the following:

1. It current Ratio is 4.5, Liquidity Ratio is 3 and Inventory is Rs. 60,000. What are the current Liabilities?
2. Opening inventory Rs.15,000, Closing inventory Rs.25,000, and Inventory turnover 6 times, find out the cost of sales.
3. Total Current Liabilities Rs.1,00,000; Liquidity Ratios 3 and Inventory Rs.50,000, find current Assets and Current Ratio.
4. Shareholders' Equity Rs.2,00,000, Assets turnover 4, Total Assets to shareholders' Equity 60% and Inventory Turnover 6, determine the amount of inventory.

10. The ratios relating to Panchali Ltd. are given below:

Gross Profit Ratio	20%
Stock Velocity	6 months
Debtors' Velocity	3 months
Creditors' Velocity	3 months

Gross profit for the year ending 31st Dec., 2013 amount to Rs.50,000. Closing stock is equal to opening stock.

You are required to calculate:

(i) Sales (ii) Closing Stock

(iii) Sundry Debtors (iv) Sundry Creditors

6.9 ANSWERS TO CHECK YOUR PROGRESS

A. 1. True
2. True
3. False
4. False

B. 1. earning capacity
2. Activity ratios

3. Working capital
4. velocity

6.10 REFERENCES/SUGGESTED READINGS

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Subject: Management Accounting	
Course code: BCOM 501	**Author: Prof. M. C. Garg**
Lesson no. :07	

CASH FLOW STATEMENT

Structure

7.0 LEARNING OBJECTIVES

After studying this unit, you will be able to:

- Explain the meaning of cash flow statement.

- Compute cash flow from operating, investing and financing activity.
- Prepare cash flow statement as per AS-3

7.1 INTRODUCTION

Cash is the basic input needed to keep the operations of the business going on, it the final output expected to be realised by selling the product manufactured by the manufacturing unit. Cash is both the beginning and the end of the business operations. Sometimes, it so happens that a business unit earns sufficient profit, but inspite is not able to pay its liabilities when they become due. Therefore, a business unit should try to keep sufficient cash, neither more nor less because shortage of cash will threaten firm's liquidity and solvency, whereas excessive cash will not be properly utilised, will remain idle and will affect the profitability of a concern.

The management of cash also assumes importance because it is difficult to predict cash inflows and outflows accurately and there is no perfect coincidence between the inflows outflows of cash giving rise to either cash outflows exceeding inflows and inflows exceeding cash outflows. Cash flow management is one important tool of cash management because it throws light on cash inflows and cash outflows of a particular period.

7.2 MEANING, OBJECTIVES, SIGNIFICANCE AND LIMITATIONS OF CASH FLOW STATEMENT

A statement of changes in financial position on cash basis, commonly known as the flow statement which shows the changes in cash position from one accounting period to another. In other word, cash flow statement summarises the causes of changes in cash position between dates of two balance sheets. It indicates the sources and uses of cash. The cash flow statement is similar to the funds flow statement except that it focuses attention on cash instead of working capital. Thus, this statement analyses changes in noncurrent assets as well as current accounts (except cash) to determine the flow of cash. According to Institute of Cost and Works Accounts of India, "Cash flow statement is a statement setting out the flow of cash under distinct heads of sources of funds and their utilisation to determine the requirements of cash during the given period and to prepare for its adequate provision."

Thus, a cash flow statement can be defined as a statement which summarises sources of cash inflows and uses of cash outflows of a firm during a particular of time, say a month or a year.

OBJECTIVES OF CASH FLOW STATEMENT

The main objectives to prepare cash flow statement are as follows:

1. To Throw Light on Cash Flow: Cash flow statement is prepared to highlight generated from various sources, i.e., inflow of cash. It also highlights the cash outflow in various projects.

2. To Disclose Changes in Cash Position: Cash flow statement discloses the reasons for low cash balance inspite of heavy operating profits or for heavy cash balance inspite of low profits.

3. To Determine Cash Requirement: A projected cash flow statement is prepared to determine cash requirements in various investment projects.

4. For Efficient Cash Management: Cash flow statement helps in planning the investment of surplus cash in short term investments and to plan short term credit in advance for deficit.

5. To Judge Liquidity Position: Liquidity is the ability of the business enterpriseto pay Current Liabilities as and when become due. Cash flow statement helps to ascertain the liquidity in a better manner.

6. To Help in Short term Planning: Cash flow statement provides information for planning the short term needs of the firm since it provides information regarding the sources and utilisation of cash during the period. It becomes easy to plan how much cash should be raised from outside sources to cover the cash requirements in various investment projects.

7. To analyse Financial Position: Cash flow statement proves to be useful for bankers and money lending institutions. It helps them in reviewing the financial position of the borrowers.

8. To help in Dividend decision: Cash flow statement shows whether company will be able to pay dividend in cash or not. It helps in taking decisions regarding payment of dividend.

SIGNIFICANCE OF CASH FLOW STATEMENT

There is a great importance of cash flow statement to the Financial Management. It is an essential tool of financial analysis for short-term planning. The chief advantages of cash flow statement are as follows:

1. Since a cash flow statement is based on the cash basis of accounting, it is very useful evaluation of cash position of a firm.

2. Cash flow statement helps in planning the repayment of loans, replacement of fixed assets and other similar long-term planning of cash. It is also significant for capital budgeting decisions.

3. Cash flow analysis is more useful and appropriate than funds flow analysis for short-term financial analysis as in a very short period it is cash which is more relevant than the working capital for forecasting the ability of the firm to meet its immediate obligations.

4. It better explains the causes for poor cash position inspite of substantial profits in a firm by throwing light on various applications of cash made by the firm.

5. A series of intra-firm and inter-firm cash flow statements reveals whether the firm's liquidity position is improving or deteriorating over a period of time and in comparison to other firms over a given period of time.

6. By preparing projected cash flow statement, a firm can come to know as to how much cash will be generated into the firm and how much cash will be needed to make various payments and hence the firm can well plan to arrange for the future requirement of cash.

7. A comparison of the historical and projected cash flow statements can be made so as to find the variations and deficiency or otherwise in the performance so as to enable the firm to take immediate and effective action.

8. Cash flow statement prepared according to AS-3 (revised) is more suitable for making comparisons than the funds flow statement as there is no standard format for the same.

9. Cash flow statement provides information of all activities classified under operating, investing and financing activities. Thus, cash flow statement has great usefulness. The statement as a tool of historical analysis as it helps to answer questions such as, given below:

(i) What is the liquidity position of the firm?

(ii) What are the causes of changes in the firm's cash position?

(iii) What fixed assets are acquired by the firm?

(iv) Did the firm pay dividends to its shareholders or not? If not, was it due to shortage of funds?

(v) How much of the firms working capital needs were met by the funds generated from current operations?

(vi) Did the firm use external sources of finance to meet its needs of funds? If the external financing was used, what ratio of debt and equity was maintained?

(vii) Did the firm sell any of its non-current assets? If so, what were the proceeds from such sales?

(ix) Could the firm pay its long-term debt as per the schedule?

(x) What were the significant investments and financing activities of the firm which did not involve working capital?

LIMITATIONS OF CASH FLOW STATEMENT

Despite a number of uses, cash flow statement suffers from the following limitations:

1. It ignores non-cash Transactions: Cash flow statement ignores the non-cash transactions. In other words, it does not consider those transactions, which do not affect the cash e.g. issue of shares against the purchase of fixed assets, conversion of Debenture Equity Shares, etc.

2. Not the Substitute for Income Statement: It is not a substitute for Income Statement. Net cash flow disclosed by cash flow statement does not necessarily mean net income of the business, because net income is determined by taking into account both cash and non-cash items.

3. Manipulation of Cash Position: The management may manipulate the cash.Better cash position may be as a result of postponing the payments, which will have to be through at a later date.

4. Not a Substitute of Funds Flow Statement: Cash flow statement cannot replace funds flow statement. 'Cash' used to signify fund is a narrow concept. It does not give a complete picture of the financial position of the concern.

5. Not Suitable for Judging the Profitability: Cash flow statement is not suitable for judging the profitability of a firm as non-cash charge are ignored while calculating cash from operating activities.

6. Ignorance of Accounting Concept of Accrual Basis: As cash flow statement based on cash basis of accounting, it ignores the basic accounting concept of accrual basis.

7.3 DIFFERENCE BETWEEN CASH FLOW STATEMENT AND FUNDS FLOW STATEMENT

A cash flow statement is much similar to a funds flow statement as both are prep summarise the causes of changes in the financial position of a business. However, followingare the main differences between a funds and a cash flow, statement:

S. No.	Basis of Difference	Funds Flow Statement	Cash Flow Statement
1.	Meaning	It is a statement of changes in the financial position of business due to inflow and outflow of funds.	It is a statement of changes in the financial position of business due to inflow and outflow of cash.
2.	Concept	It is based on a wider concept of funds i.e. working capital.	It is based on a narrower concept of funds i.e. cash.
3.	Basis of Accounting	It is based on accrual basis of accounting.	It is based on cash basis of accounting.
4.	Planning Period	Funds flow statement is used for long range planning.	It is required for short range planning.
5.	Schedule of Changes in Working Capital	FFS includes the preparation of schedule of changes in working capital to show the changes in current assets and current liabilities.	Under CFS, no such schedule of changes in working capital is prepared.
6.	Reliability	Plans for more immediate future can not rely upon the information supplied by FFS.	Plans for more immediate future can rely upon information supplied by CFS.
7.	Treatment of Current Assets	It treats all current assets at par with funds, although debts are collected within months and stock is sold within six months.	It does not treat all current assets as cash.
8.	Treatment of	Here increase in outstanding	Here, increase in bank

	Current Liabilities	expenses are treated as increase in overdraft.	overdraft and increase in outstanding expenses are treated separately.
9.	Cash/Funds from Operation	While making funds flow statement, funds from operation is calculated.	While making cash flow statement cash from operation is calculated.
10.	Methods of Preparing	FFS reveals the sources and application of funds. The net difference between sources and application of funds represents net increase or decrease in working capital.	Under AS-3 (revised), it is prepared by classifying all cash inflows and outflows in terms of operating, investing and financing activities. The net difference represents the net increase or decrease in cash and cash equivalent.
11.	Opening and Closing Balance of Cash	Opening and closing balance of cash are not shown in FFS, whereas, they are shown in statement of changes in working capital.	Opening and closing balance of cash are shown in C.F.S.

7.4 CLASSIFICATION OF CASH FLOWS AND TREATMENT OF SPECIAL ITEMS IN CASH FLOW STATEMENT

According to AS-3 (Revised), Cash Flow Statement should be presented in a manner that it reports cash flows during the period classifying by:

(1) Cash Flows from Operating Activities,

(2) Cash Flows from Investing Activities, and

(3) Cash Flows from Financing Activities.

1. Cash Flow from Operating Activities: Cash flows from operating activities are the cash flows from the principal revenue producing activities of the enterprise. For a sugar mill the principal revenue producing activities are to purchase sugarcane and other inputs, payment of wages and salaries, sale of sugar and by products. AS-3 (Revised) gives the following examples of cash flows from operating activities:

(i) Cash receipts from sale of goods and services.

(ii) Cash receipts from royalty, fees, commission and other revenues.

(iii) Cash payments to suppliers on inputs and services used.

(iv) Cash payment to and on behalf of employees.

(v) Cash payments or refunds of income taxes unless they can be specifically identified with financing and investing activities.

(vi) Cash receipts and payment relating to future contracts, option contracts, and swap contracts when the contracts are used for dealing or trading purposes.

2. Cash Flows from Investing Activities: Cash flows from investing activities are the cash flows from the transactions involving purchase and sale of resources, i.e., long-term productive assets intended to generate future income and cash flows. AS-3 (Revised) gives the following examples of cash flow from investing activities:

(i) Cash payments to acquire fixed assets including intangible assets such as goodwill, patents and copyrights. It also includes payment made to construct Fixed Assets.

(ii) Cash receipts from disposal of fixed assets including tangibles.

(iii) Payment to acquire shares, warrants or debt instruments of other enterprises, investment in joint ventures.

(iv) Cash receipts from sale of shares, warrants or debts instruments and interest in joint ventures.

(v) Cash advances and loans made to third parties (other than loans and advances made by a financial enterprise)

(vi) Cash receipts from the repayment of loans and advances made to third parties.

(vii) Cash payments for future contracts, optional contracts etc., when the payments are classified as financing activities.

3. Cash Flows from Financing Activities: Cash Flow from financing activities are the cash flows from the transactions relating to providing funds (both capital and borrowings) to the company. AS-3 (Revised) gives the following examples of cash flows from financing activities:

(i) Cash proceeds from issuing shares or other similar instruments.

(ii) Cash proceeds from issuing debentures, loans, notes, bonds and other short term or long-term borrowings, and

(iii) Cash repayment of amounts borrowed.

TREATMENT OF SPEICAL ITEMS IN CASH FLOW STATEMENT

1. PROVISION FOR TAXATION

Information related to taxes could be of different types. Although description is being given here:

(a) If Provision for Taxation or Tax Paid, One of the two items is given – In such situation, provision for tax will be considered as payment of tax and tax paid will be considered as provision for tax.

Accounting Treatment:

(i) Tax paid/provision for taxation is added to profit once and

(ii) Tax paid/provision for taxation will be deducted from cash received from opening activities.

(b) If the Opening and Closing Balance of Provision of given – In such situation, provision for tax of previous year is considered as tax paid in the current year and provision for tax a current year is considered as provision for current year and transferred to Profit and Loss Account. This face is made clear through the ahead example:

Example:

Extracts of the Balance Sheet

Provision for Taxation 31.03.2014	Rs. 40,000

Provision for Taxation 31.03.2015 Rs. 60,000

No further information is given. Prepare Provision for Tax Account.

Solution:

Dr. Provision for Taxation Account Cr.

Particulars	Amount	Particulars	Amount
	Rs.		Rs.
To Cash (Tax Paid)	40,000	By Balance b/d	40,000
To Balance c/d	60,000	By Statement of P & L	
		(Provision during the year)	60,000
	1,00,000		1,00,000

Accounting Treatment:

(i) Rs.60,000 will be added to profit.

(ii) Rs. 40,000 tax paid will be deducted from cash received from operating activities.

(c) Calculation of Provision for Taxation made during the year.

Example 2.

Extracts of the Balance Sheet

Extracts of the Balance Sheet

Provision for Taxation 31.03.2014 Rs. 20,000

Provision for Taxation 31.03.2015 Rs. 35,000

Tax paid during the year Rs. 15,000. Prepare Provision for Tax Account.

Solution:

Dr. Provision for Taxation Account Cr.

Particulars	Amount	Particulars	Amount
	Rs.		Rs.
To Cash (Tax Paid)	15,000	By Balance b/d	20,000
To Balance c/d	35,000	By Statement of P & L	
		(Provision during the year)	30,000
	50,000		50,000

Accounting Treatment:

(i) Rs. 30,000 will be added to profit.

(ii) Rs. 15,000 tax paid will be deducted from operating activities.

(d) Calculation of Tax paid during the year.

Example 3.

Extracts of the Balance Sheet

Provision for Taxation 31.03.2014	Rs. 35,000
Provision for Taxation 31.03.2015	Rs. 40,000

Provision for Taxation made during the year Rs. 20,000. Prepare Provision for Taxation Account.

Solution:

Dr. Provision for Taxation Account Cr.

Particulars	Amount	Particulars	Amount
	Rs.		Rs.
To Cash (Tax Paid)	15,000	By Balance b/d	35,000
To Balance c/d	40,000	By Statement of P & L	
		(Provision during the year)	20,000
	55,000		55,000

Accounting Treatment:

(i) Rs. 20,000 will be added to profit.

(ii) Rs. 15,000 will be deducted from operating activities.

2. PROPOSED DIVIDEND

Accounting of proposed dividend is exactly the same as that of provision for taxation.

Example 4.

Extracts of the Balance Sheet

Provision Dividend 31.03.2014	Rs. 40,000
Provision Dividend 31.03.2015	Rs. 65,000

Dividend paid during the year Rs. 30,000. Prepare Proposed Dividend Account.

Solution:

Dr. Proposed for Taxation Account Cr.

Particulars	Amount	Particulars	Amount
	Rs.		Rs.
To Cash (Dividend Paid)	30,000	By Balance b/d	40,000
To Balance c/d	60,000	By Statement of P & L	
		(Provision during the year)	50,000
	90,000	(Bal. Fig.)	90,000

3. INVESTMENT

Investments can be of two types – short term and long term. If investment is made in short term securities, then such investment is considered as Cash Equivalent and if investment is made in long term securities, it is called long term investment. Investment Account is opened to know about the amount of sale or purchase of long term investments. Calculation of amount of sale purchase of long term investments could be made clear through the following example:

Example 5.

Extracts of the Balance Sheet

Opening Balance of Investments	Rs. 25,000
Closing Balance of Investments	Rs. 35,000

Additional Information:

Dividend received during the year Rs. 5,000 include Rs. 2,000 of Pre-acquisition Profits which have been credited to Investment Account.

You are required to find out the value of Investment purchased during the year.

Solution:

Dr. Investment Account Cr.

Particulars	Amount	Particulars	Amount
	Rs.		Rs.
To Balance c/d	25,000	By Dividend (Pre-acquisition)	2,000
To Cash A/C (Purchase)	12,000	By Balance c/d	35,000
	37,000		37,000

Accounting Treatment:

(i) Investment purchased Rs. 12,000 will be shown under investing activities.

(ii) Dividend received Rs. 5,000 will be shown as cash received from investing activities.

(iii) Rs. 3,000 (Rs. 5,000 – Rs. 2,000) will be deducted from profits.

Example 6.

Extracts of the Balance Sheet

Opening Balance of Investments	Rs. 15,000
Closing Balance of Investments	Rs. 22,500

Additional Information:

Dividend received during the year Rs. 2,000 include Rs. 100 of Pre-acquisition Profits which have been credited to Investment Account.

During the year investment costing Rs. 7,500 were sold for Rs. 5,000. Find out the purchase of investments during the year.

Solution:

Dr. Investment Account Cr.

Particulars	Amount	Particulars	Amount
	Rs.		Rs.
To Balance c/d	15,000	By Cash (Sales)	5,000
		By Statement of P & L (Loss)	2,500
			100
To Cash (Purchase)	15,100	By Dividend (Pre-acquisition)	22,500
(Bal. Fig.)		By Balance c/d	
	30,100		30,100

Accounting Treatment:

(i) Amount received on sale of investment will be shown as cash from investing activities Rs. 5,000.

(ii) Loss on sale of investment will be added to profits.

(iii) Rs. 1,900 (Rs. 2,000 – Rs. 100) will be deducted from profits.

4. DECREASE OR INCREASE IN CAPITAL

Normally, trading are transferred to Capital Account i.e., profit is added to capital while loss is deducted from capital. In such situation, amount of drawings or profit can be known by drawing capital accounts. It should be kept in mind that there is a difference between capital and share capital. Amount invested in case of partnership or sole-proprietorship business is called capital while in case of companies, it is called share capital. Here, the term capital refers to amount invested in partnership or sole proprietorship business.

Example 7.

Extracts of the Balance Sheet

Opening Balance of Capital	Rs. 1,25,000
Closing Balance of Capital	Rs. 1,53,000
Net Profit for the year	Rs. 45,000

Prepare Capital Account.

Solution:

Dr. **Capital Account** **Cr.**

Particulars	Amount	Particulars	Amount
	Rs.		Rs.
To Cash (Drawings)	17,000	By Balance b/d	1,25,000
To Balance c/d	1,53,000	By Net Profit for the year	45,000
	1,70,000		1,70,000

Accounting Treatment:

(i) Profit for the year will be shown under profits from operating activities.

(ii) Amount of drawings will be shown as outflow of cash under financing activities.

5. INCREASE IN SHARE CAPITAL

Increase in company's share capital means issue of new shares. Here, increase in capital should not be taken as profits for the year, because, the profit earned is not shown by adding it to capital in any company. Issue of shares for cash will be considered as source of cash.

But sometimes, shares are issued for consideration other than cash also. In such situation, following rules should be kept in mind:

(i) If bonus shares are issued from accumulated profits, then this will not be considered as a source of cash.

(ii) If shares are issued as purchase consideration of fixed assets, then this would not be considered as source of cash. For example, shares issued as purchase consideration of machine, building etc.

(iii) Conversion of debentures into shares will not be considered as source of cash.

6. REDEMPTION OF PREFERENCE SHARES

A company can redeem preference shares (redeemable) only according to the terms of issue. Preference shares can be redeemed at par, at premium or at discount. If redeemed at premium, then premium amount will be added to profit and shown as outflow of cash from financing activities by adding it to the face value of the shares. Similarly, if redeemed at discount, then the discount amount will be deducted from profit and shown as outflow of cash from financing activities by deducting it from the face value of shares.

7. REDEMPTION OF DEBENTURES

Debentures can also be redeemed at par, at premium or at discount. It redeemed at premium or discount, then the amount of premium or discount will be adjusted with profit.

If debentures are redeemed through conversion, then there is no flow of cash but debentures are redeemed by purchasing own debentures on premium or discount from open market, then such premium or discount amount should also be adjusted with profit.

8. INCREASE OR DECREASE IN THE VALUE OF FIXED ASSETS

Value of fixed assets may increase or decrease. Increase in the value means purchase while decrease in the value means sale of assets or depreciation.

Sometimes, information regarding sale-purchase of assets are provided as additional information. In such situations, it becomes necessary to draw the concerned assets account so that relevant information could be obtained easily.

Example 8.

Extracts of the Balance Sheet

Opening Balance of Fixed Assets	Rs. 40,000
Closing Balance of Fixed Assets	Rs. 60,000
Depreciation for the year	Rs. 4,000

Solution:

Dr. **Fixed Assets Account** **Cr.**

Particulars	Amount	Particulars	Amount
	Rs.		Rs.
To Balance b/d	40,000	By Statement of Profit & Loss (Depreciation)	4,000
To Cash (Purchase) (Bal. Fig.)	24,000	By Balance c/d	60,000
	64,000		64,000

Accounting Treatment:

(i) Depreciation amount of Rs. 4,000 will be added to profit.

(ii) Purchase of assets amount of Rs. 24,000 will be shown as utilisation of cash under investing activities.

9. DECREASE OR INCREASE IN THE VALUE OF GOODWILL

Goodwill is an intangible asset. Its value could increase on decrease. If its value decreases, then the amount of decrease will be added to profit. As such, decrease in goodwill means writing off of goodwill. If its value increases, then this will be considered as purchase of goodwill. This purchase amount will be considered as utilisation of cash under investing activities because on purchase of goodwill cash goes out of business.

10. PURCHASE PRICE AND COST OF GOODS SOLD

According to Accounting Standard-3 if purchase price of goods and opening and closing values of stock is given, then there is no need of adjustments for opening and closing values of stock. This could be better understood with the help of following example:

Example 9.

		Rs.
Opening Stock	2,50,000	
+ Purchase		5,00,000
		7,50,000
– Closing Stock		2,00,000
Cost of Goods Sold		5,50,000

If value of purchases is given, then amount paid to creditors should be calculated on its basis. If purchases and cost of goods sold both the given, then value of purchases could be calculated on the basis of cost of goods sold if opening and closing values of stock are known as:

	Rs.
Cost of Goods sold	5,50,000
+ Closing Stock	2,00,000
	7,50,000
– Opening Stock	2,50,000
Value of Purchase	5,00,000

11. PROFIT BEFORE TAX AND AFTER TAX

Profit before tax forms the base for calculation of cash received from operating activities. If profit after tax is given, then it is converted into profit before tax for which Provision for Taxation and Provision for Dividends are added to profit after tax.

12. CASH AND CASH EQUIVALENT ITEMS

Cash equivalents are extremely liquid investments which can be rapidly converted into cash with little or no risk of change in their values. Thus, all those investments whose maturity period is too low i.e., 3 months of less will be included in cash equivalents. Cash equivalents are not kept with the objective of investment.

Examples of Cash Equivalents:

(i) Short-term Investments

(ii) Short-term Deposits

(iii) Marketable Securities

(iv) Cash Credit

(v) Treasury Bills

(vi) Opening Bank Overdrafts

(vii) Cash Credit at the beginning

Accounting Treatment of Cash Equivalents:

Items to be added in the total of Operating, Investing and Financing Activities:

(i) Opening Balance of Cash

(ii) Opening Balance of Bank

(iii) Opening Short-term Deposit

(iv) Opening Balance of Cash Credit (Debit)

(v) Opening Marketable Securities

(vi) Opening Treasury Bills

Items to be deducted:

(i) Opening Balance of Bank Overdraft

(ii) Opening Balance of Cash Credit (Credit)

13. OTHER MATTERS

(i) If only last year's amount is given and current year's amount is not given, then this indicates decrease in the value.

(ii) If only current year's amount is given and last year's amount is not given, then this indicates increase in the value.

(iii) If one year's amount is given and it is not clear as to which year's amount it is, then it will be considered as current year's amount.

7.4.1 PREPARATION OF CASH FLOW STATEMENT

Preparation of Cash Flow Statement involves the following steps:

Step 1. First of all opening and closing balances of cash and cash equivalents are ascertained. Cash means cash on hand and demand deposits with banks. On the other hand, cash equivalents are short-term highly liquid investments that are readily convertible into cash and so near their maturity that they present significant risk of changes in value. Examples of cash equivalents are government securities, treasury bills etc., which are maturing within three months from the date of acquisition.

Step II. Net cash provided or used by operating activities is calculated with the help of Profit and Loss Account, Balance Sheets and additional information.

Step III. Net cash provided or used by investing and financing activities are calculated.

Step IV. Cash Flow Statement is prepared in the prescribed or suitable format.

(I) CALCULATION OF CASH FLOWS FROM OPERATING ACTIVITIES

Almost all the companies prepare its income statement on accrual basis of accounting under which revenues are recorded when earned and expenses are recorded when incurred. Because of this Net Profit as shown by income statement will not be equal to cash generated by operating activities. Hence there is a need to calculate cash flows from operating activities. AS-3 (Revised) suggests two methods of reporting Cash Flows from Operating Activities.

(i) Direct Method, (ii) Indirect Method

I. DIRECT METHOD

Under this method, cash receipts from operating activities, i.e., cash collected from cash sales, customers and interest, dividends and cash payments for operating activities such as payment to creditors for goods and services, employees for their services etc. are disclosed. The difference between cash receipts and cash payment is the net cash flow from operating activities. A cash flow statement based on direct method is a Profit and Loss Account on cash basis. The format of the direct method is as follows:

FORMAT

Calculation of Cash Flows from Operating Activities

		Rs.
	Cash Sales	–
	Cash receipt from Customers	–
	Gross cash receipt from Operating Activities	–
Less:	Cash paid to suppliers	(–)
	Cash paid to employees	(–)
	Cash paid for other Operating Expenses	(–)
	Cash generated from Operating Activities	–
Less:	Income Tax Paid	(–)
	Cash Flow before extraordinary Income	–
Less/Add:	Extra Ordinary items	(–)/–

Net Cash from Operating Activities	–

Under direct method we have to convert accrual basis revenue and expenses to equivalent cash receipts and payments. This may be done as under:

1. Calculation of Cash Receipts from debtors:

	Rs.	
Credit Sales	–	
Add: Opening Balance of debtors and Bills Receivable	–	
	–	
Less: Closing balance of debtors and Bills Receivable	–	
Cash Receipts from Debtors		–

2. Calculation of Cash Paid to Suppliers:

Credit Purchases	–
Add: Opening balance of Creditors and Bills Payable	–
	–
Less: Closing balance of Creditors and Bills Payable	–
Cash Paid to Suppliers	–

3. Calculation of amount paid to creditors when cost of goods sold is given

	Rs.
Cost of Goods sold	√√
Add: Stock at the end	√√
	√√
Less: Stock at the beginning	√√
Total Purchases	√√
Add: Opening Stock of Creditors + BP	√√
	√√
Less: Closing Balance of Creditors + BP	√√
Cash paid to the Suppliers	√√

4. Calculation of Cash Paid to Employees:

Wages and Salaries on accrual basis	–
Add: Outstanding at the beginning	–
	–
Less: Outstanding at the end	–
	–
Add: Prepaid at the end	–

	–
Less: Prepaid at the beginning	–
Cash Paid to Employees	–

(II) INDIRECT METHOD

Under this method Net Profit or Loss in adjusted for the effects of transactions of non cash nature and non-operating nature and changes in current assets and liabilities. The format of the Indirect Method is given below:

FORMAT

Calculation of Cash Flows from Operating Activities

		Rs.	**Rs.**
	Net Profit for the Current Year		–
Add:	Depreciation	–	
	Goodwill written off	–	
	Preliminary expenses written off	–	
	Discount on issue of shares written off	–	
	Transfer to General Reserve	–	
	Loss on Sale of Fixed Assets	–	–
Less:			–
	Dividend and Interest received	(–)	
	Profit on Sale of Assets	(–)	
	Provision for bad debts written off	(–)	
	Profit on appreciation of Fixed Assets	(–)	(–)
	Profit before working capital changes		–
Add:	Increase in Current Liabilities	–	
	Decrease in Current Assets	–	–
Less:	Increase in Current Assets	(–)	
	Decrease in Current Liabilities	(–)	(–)
	Cash generated from Operating Activities		–
Less:	Income Tax Paid		(–)
	Add/Less: Extraordinary Items		–/(–)
	Net Cash Flow from Operating Activities		–

Example 9.

From the following information, calculate cash flow from Operating Activities by using Direct Method.

Statement of Profit and loss for the year ended 31st March, 2015

Particulars	Notes No.	Amount	Amount
		Rs.	Rs.
Sales (Reserve from operations)			2,50,000

Add: Other Income			
Total Revenue			2,50,000
Less: Expenses:			
Cost of goods sold			(1,50,000)
			1,00,000
Salaries		35,000	
Insurance Premium		5,000	
Depreciation		10,000	(50,000)
Net Profit			50,000

Additional Information:

	1-4-2014 Rs.	31-3-2015 Rs.
Stock	25,000	30,000
Debtors	20,000	30,000
Bills Receivable	8,000	6,000
Prepaid Insurance Premium	1,500	1,500
Creditors	10,000	8,000
O/S Salaries	4,000	5,000

Solution:

Calculation of Cash Flow from Operating Activities

Particulars		Rs.	Rs.
	Total Sales		2,50,000
Add:	Opening Balance of Debtors + B/R		28,000
			2,78,000
Less:	Closing Balance of Debtors + B/R		(36,000
	Cash receipt from Customers		2,42,000
Less:	Cash Paid to Suppliers:	1,50,000	
	Cost of Goods Sold	30,000	
	Add: Closing Stock	1,80,000	
		25,000	
	Less: Opening Stock	1,55,000	
	Total Purchases	10,000	
	Add: Opening Balance of Creditors	1,65,000	
		8,000	
	Less: Closing Balance of Creditors		(1,57,000)
	Cash paid to Suppliers		
Less:	Cash paid to Employees:	5,000	
	Salaries (Accrual basis)	4,000	

	Add: Outstanding at beginning	39,000	
	Less: Outstanding at end	5,000	(34,000)
Less:	Insurance Premium:		
	Premium on accrual basis	5,000	
	Add: Closing Balance of P.P. Ins. Premium	1,500	
		6,500	
	Less: Opening balance of P.P. Ins. Premium	1,500	5,000
	Net Cash Flow from Operating Activities		46,000

Example 10

From the following, you are required to calculate cash flows from operating activities by Indirect Method:

Particulars	March 31, 2014	March 31, 2015
	Rs.	Rs.
Balance of Statement of Profit & Loss	60,000	65,000
Debtors	87,000	40,000
Bills Receivable	62,000	1,03,000
General Reserve	2,02,000	2,37,000
Dividend Equalisation Fund	78,000	1,00,000
Salary outstanding	30,000	12,000
Wages prepaid	5,000	7,000
Goodwill	80,000	70,000

Solution:

		Rs.
Bal. of Statement of (65,000–60,000)		5,000
Adjustments:		
Add: Transfer to General Reserve		35,000
Transfer to Dividend Equalisation Fund		22,000
Goodwill Written off		10,000
Operating Profit		72,000
Add: Decrease in Debtors		47,000
	Rs.	1,19,000
Less: Increase in Bills Receivables	(41,000)	
Increase in Prepaid Wages	(2,000)	
Decrease in Salary Outstanding	(18,000)	(61,000)
Cash flow from Operating Activities		58,000

CASH FLOW FROM INVESTING ACTIVITIES

These activities are related to the acquisition and disposal of long-term assets, non-operating current assets and investments which results in flow of cash. Disposal of the aforesaid assets result in inflow of cash. Thus, inflow and outflow related to acquisition and disposal of assets are shown under this category and the net-effect of these activities is calculated.

EXAMPLES OF CASH FLOW FROM INVESTING ACTIVITIES

Purchase of land and building, machinery, goodwill, investment and proceeds from sale of land and building, machinery, investment, patents, interest received on debentures held as investment, dividend received on shares held as investment. Rent received on property held as investment and brokerage paid on purchase of investment.

FORMAT

CASH FLOW FROM INVESTING ACTIVITIES

Particulars	Rs.	Rs.
Proceeds from Disposal of Fixed Assets:		
Proceeds from Sale of Machinery	√√	
Proceeds from Sale of Land and Building	√√	
Proceeds from Sale of Furniture & Fixtures	√√	
Proceeds from Sale of Investments	√√	
Proceeds from Sale of Goodwill, Patent Rights, Trade Mark, etc.	√√	
Add: Non-Operating Income from Investments:		
Dividend from Shares	√√	
Interest received on Debentures	√√	√√
Rent of Property received	√√	
Less: Purchase of Non-Current Assets:		
Purchase of Machinery	√√	
Purchase of Land and Building	√√	
Purchase of Furniture and Fixtures	√√	
Purchase of Investments	√√	√√
Purchase of Goodwill, Trade Mark, Patents Rights etc.	√√	√√
Net Cash Flow from Investing Activities		Or
Or		

Net Cash used in Investing Activities		√√

Example 11

From the following information, calculate cash flow from Investing Activities:

Assets:	2014	2015
	Rs.	Rs.
Investment in Land	2,50,000	2,50,000
Shares in Poonam Ltd.	2,00,000	2,00,000
12% Long-term Investment	75,000	80,000
Plant & Machinery	10,00,000	12,00,000
Patent	1,50,000	1,30,000
Goodwill	1,50,000	2,50,000

Additional Information:

1. The piece of land was purchased out of surplus for investment purposes and let out. It realised Rs.50,000 as rent.
2. Dividend received from Poonam Ltd. @ 12%.
3. Patents written off to the extent of Rs. 30,000.
4. Some part of patent was sold at a profit of Rs. 25,000.
5. A piece of machine costing Rs. 1,50,000 (Depreciation provided there on Rs. 50,000) was sold for Rs. 75,000. Depreciation charged during the year was Rs. 1,25,000.
6. During the year 12% investment were purchased for Rs. 1,50,000 and some investments were sold at a profit of Rs. 15,000. Interest on investment was received for the year.

Solution:

Working Notes:

Dr. **1. Plant and Machinery Account** **Cr.**

	Rs.		Rs.
To Balance b/d	10,00,000	By Statement of P/L (Depreciation)	1,25,000
To Bank (Purchase)		By Cash (Sale)	75,000
(Bal. Fig.)	4,25,000	By Statement of P/L (Loss on Sale)	25,000
		By Balance c/d	12,00,000
	14,25,000		14,25,000

Dr. **2. 12% Long Term Investment Account** **Cr.**

	Rs.		Rs.
To Balance b/d	75,000	By Bank A/c (Sale)	
To Bank (Purchase)	1,50,000	(Bal. Fig.)	1,60,000
To Statement of P/L (Profit)	15,000	By Balance c/d	80,000
	2,40,000		2,40,000

Dr. **1. Plant and Machinery Account** **Cr.**

	Rs.		Rs.
To Balance b/d	1,50,000	By Balance c/d	2,50,000
To Bank (Purchase)			
(Bal. Fig.)	1,00,000		
	2,50,000		2,50,000

Dr. **4. Patents Account** **Cr.**

	Rs.		Rs.
To Balance b/d	1,50,000	By Statement of P/L (Written off)	30,000
To Statement of P/L (Profit)	25,000	By Bank (Sale) (Bal. Fig.)	15,000
		By Balance c/d	1,30,000
	1,75,000		1,75,000

Calculation of Cash Flow from Investing Activities

	Rs.	Rs.
Proceeds from Sale of Machinery	75,000	
Proceeds from Sale of Investments	1,60,000	
Proceeds from Sale of Patents	15,000	
Interest Received $\left\{\frac{75,000 \times 12}{100}\right\}$	9,000	
Dividend Received $\left\{\frac{2,00,000 \times 12}{100}\right\}$	24,000	
Rent received	50,000	3,33,000
Less: Purchase of Machinery	4,25,000	
Purchase of Investment	1,50,000	
Purchase of Goodwill	1,00,000	(6,75,000)
Net Cash used in Investing Activities		(3,42,000)

CASH FLOW FROM FINANCING ACTIVITIES

These activities relate to issue of shares, issue of debentures, loans raised, redemption of debentures and preference shares. These activities basically relate to change in capital and borrowings of the enterprise which affect flow of cash.

Reasons for Inflow of Cash from Financing Activities:

(i) Issue of Shares or Increase in Capital

(ii) Issue of Debentures

(iii) Raising Long Terms Loan

Reasons for Outflow of Cash from Financing Activities:

(i) Redemption of Share Capital

(ii) Payment of Loans or Debentures

(iii) Payment of Interim or Final Dividend

(iv) Payment of Interest on Borrowings etc.

(v) Payment of Brokerage or Underwriting Commission.

FORMAT

CASH FLOW FROM INVESTING ACTIVITIES

Particulars	Amount	Amount
Proceeds from Issue of Share Capital and Borrowings:	Rs.	Rs.
Proceeds from Issue of Equity Shares	√√	
Proceeds from Issue of Pref. Shares	√√	
Proceeds from Issue of Debentures etc.	√√	√√
Less: Buy-Back of Equity Shares	√√	
Less: Redemption of Pref. Shares	√√	
Less: Redemption of Debentures	√√	
Less: Interim Dividend paid on Equity Shares	√√	
Less: Final Dividend paid on Equity Shares	√√	
Less: Dividend on Pref. Shares	√√	
Less: Interest paid on Debentures etc.	√√	(√√)

Net Cash Flow from Financing Activities Or Net Cash used in Financing Activities		√√ Or √√

Example 12

From the following information, calculate cash flow from Financing Activities:

	Issued April, 2014	Redeemed April, 2015
(i) Equity Share Capital	2,50,000	–
(ii) 12% Debentures	1,50,000	–
(iii) 15% Pref. Share Capital	–	2,50,000

(iv) Equity shares were issued at a premium of 10%.

(v) 15% Pref. shares were redeemed at a premium of 5%.

(vi) 12% Debentures were issued at a discount of 2%.

(vii) Interim dividend paid on equity shares Rs.1,05,000.

(viii) Dividend Paid on Pref. Shares Rs. 90,000.

(ix) Underwriting commission on issue of Equity Shares Rs. 10,000.

(x) Interest paid on old Debentures Rs. 28,000.

Solution:

Calculation of Cash Flow from Financing Activities

Cash received from issue of Equity Shares	Rs.	Rs.
Add: Premium received on issue of Equity Shares	2,50,000	
Cash received from issue of Debentures	25,000	2,75,000
Less: Discount on Issue of Debentures	1,50,000	
Less: Redemption of 12% Pref. Shares	(3,000)	1,47,000
Less: Premium on Redemption of Pref. Shares	(2,50,000)	
Less: Interest paid on Old Debentures	(28,000)	
Less: Interim Dividend paid on Equity Shares	(1,05,000)	
Less: Dividend paid on Pref. Shares	(90,000)	

Less: Underwriting Commission on Issue of Equity Shares	(10,000)	(4,95,500)
Net Cash used in Financing Activities		(73,500)

FORMAT
CASH FLOW STATEMENT
(For the year ended 31st March, ….)

	Rs.	Rs.
1. Cash Flow from Operating Activities:		
Cash Sales	√√	
Cash Receipts from Debtors/Customers	√√	
Cash paid to Suppliers	(√√)	
Cash paid to Employees	(√√)	
Other Operating Incomes such as Commission, Brokerage, Refund of Tax, etc.	√√	
Other Operating Expenses such as Wages, Salaries, Rent etc.	(√√)	
Cash generated from Operation	√√	
Less: Income Tax paid	(√√)	
Cash Flow before Extraordinary Items	√√	
Add/Less: Adjustment for Extraordinary Items (i.e., Insurance Proceeds from Earthquake Disaster Settlement)	√√(√√)	
Net Cash from Operating Activities		√√
II. Cash Flow from Investing Activities:		
Sale of Fixed Assets	√√	
Purchase of Fixed Assets	(√√)	
Interest received	√√	
Dividend received	√√	
Net Cash from Investing Activities		√√
III. Cash Flow from Financing Activities:		
Issue of Shares (Equity or Preference)	√√	
Issue of Debentures	√√	
Long-term Borrowings	√√	
Redemption of Pref. Shares	(√√)	
Redemption of Debentures	(√√)	
Payment of Loans	(√√)	
Interest Paid	(√√)	√√

Dividend Paid		√√
Net Cash from Financing Activities		√√
Net Increase in Cash and Cash Equivalent		√√
Add: Cash and Cash Equivalent at the beginning		
Cash and Cash Equivalent at the end		

FORMAT

CASH FLOW STATEMENT

(For the year ended 31st March, ….)

(AS-3 Indirect Method)

Particulars	Amount	Amount
	Rs.	Rs.
1. Cash Flow from Operating Activities:		√√
Net Profit for the year (Closing Balance – Opening Balance)		√√
Add: Proposed Dividend for the current year		√√
Add: Interim Dividend paid for the current year		√√
Add: Transfer to Reserve		√√
Add: Provision for Tax made during current year		√√
Less: Refund of Tax credited to Statement of P/L		
Less: Extraordinary item credited to Statement of P/L (e.g. Insurance proceeds from earthquake disaster settlement)		(√√)
Net Profit before Taxation and Extraordinary Items		√√
Add: Non-operating Expenses:		
Depreciation	√√	
Interest on Borrowings	√√	
Preliminary Expenses	√√	
Underwriting Commission	√√	
Discount on Issue of Shares/Debentures Written off.	√√	
Goodwill, Patents, Trade Marks etc. Amortised	√√	
Loss on Sale of Fixed Assets	√√	√√
Premium Payable on Redemption of Preference Shares/Debentures	√√	√√
Less: Non-operating Income:		
Interest received	(√√)	
Dividend received	(√√)	
Rent received	(√√)	(√√)
Profit on Sale of Fixed Assets	(√√)	√√
Operating Profit before Working Capital Changes		

Add: Decrease in Current Assets and Increase in Current Liabilities:		
Decrease in Stock	√√	
Decrease in Debtors/B/R	√√	
Decrease in Prepaid Expenses	√√	
Decrease in Accrued Commission	√√	
Increase in Creditors	√√	
Increase in Outstanding Expenses	√√	
Increase in Commission received in Advance	√√	√√
Increase in Provision for Doubtful Debts	√√	
Less: Increase in Current Assets and Decrease in Current Liabilities:		
Increase in Stock	(√√)	
Increase in Debtors/B/R	(√√)	
Increase in Prepaid Expenses	(√√)	
Increase in Accrued Commission	(√√)	
Decrease in Creditors	(√√)	
Decrease in Outstanding Expense	(√√)	
Decrease in Commission received in Advance	(√√)	
Decrease in Provision for Doubtful Debts	(√√)	(√√)
Cash Generated from Operating Activities		√√
Less: Income Tax Paid		(√√)
Cash flow before Extraordinary Items		√√
Add: Extraordinary Items (Income)		√√(√√)
Net Cash Flow from/used in Operating Activities		
2. Cash Flow from Investing Activities:		
Proceeds from Sale of Fixed Assets		√√
Proceeds from Sale of Investments		√√
Proceeds from Sale of Patents/Trade Marks/Copyrights		√√
Rent/Dividend/Interest received		√√
Less: Purchase of Fixed Assets	√√	
Less: Purchase of Investments	√√	
Less: Purchase of Patents/Trade Marks/Copyrights	√√	√√
Net Cash from/used in Investing Activities		√√ (√√)
3. Cash Flow from Financing Activities:		
Proceeds from Issue of Pref. Shares		
Proceeds from Issue of Equity Shares		√√
Proceeds from Issue of Debentures		

Less: Redemption of Pref. Shares		√√
Less: Redemption of Debentures	(√√)	√√
Less: Interest on Debentures	(√√)	
Less: Interim Dividend paid	(√√)	
Less: Final Dividend paid	(√√)	
Net Cash from/used in Financing Activities	(√√)	
Net Increase/Decrease in Cash and Cash Equivalents (I + II + III)		(√√)
Add: Cash and Cash Equivalents at the beginning of Period:		√√ (√√)
Cash in hand		√√ (√√)
Cash at Bank	√√	
Marketable Securities	√√	
Bank Overdraft/Cash Credit	√√	
Add:Cash and Cash Equivalents at the end of period:	(√√)	√√ (√√)
Cash in hand		
Cash at Bank	√√	
Marketable Securities	√√	
Bank Overdraft/Cash Credit	√√	
	(√√)	√√ (√√)

Example 13.

The Balance Sheet of Rajiv Ltd. as at 31st March, 2014 and 2015 are given below:

Rajiv Ltd.

(Balance Sheets at 31stMarch, ….)

Particulars	Notes No.	2015	2014
1. EQUITY & LIABILITIES:			
1. Shareholder's Funds:			
(a) Share Capital		23,50,000	23,50,000
(b) Reserve & Surplus			
Statement of Profit and Loss		2,04,000	1,68,000
General Reserve		9,30,000	9,00,000
2. Non-current Liabilities			
Provision for Taxation		30,000	2,25,000
Mortgage Loan		8,10,000	–
3. Current Liabilities:			
Trade Payables (Sundry Creditors)		4,02,000	5,04,000
Total (1 + 2+ 3)		47,26,000	41,47,000
II. ASSETS:			
1. Non-current Assets:			

(a) Fixed Assets:		19,60,000	22,00,000
(b) Investments		1,80,000	1,50,000
2. Current Assets:			
Inventory (Stock)		6,30,000	7,20,000
Trade Receivable (Debtors)		13,65,000	6,30,000
Cash and Cash Equivalents:			
Bank		5,91,000	4,47,000
Total (1+2)		47,26,000	41,47,000

Additional Information:

(1) Investment costing Rs. 24,000 were sold during the year for Rs. 25,500.

(2) Provision for tax made during the year was Rs. 27,000.

(3) During the year part of the fixed assets costing Rs. 30,000 were sold are Rs. 36,000. The profit was included in Statement of Profit and Loss.

(4) Dividend paid during the year amounted to Rs. 1,20,000.

You are required to prepare sources and uses of cash.

Solution: **Cash Flow Statement**

(for the year ending 31st March, 2015)

	Rs.	Rs.
(A) Cash Flow from Operating Activities		
Net Profit (Rs.2,04,000 – Rs.1,68,000)		36,000
Adjustment for:		
Depreciation (W. Note No. 2)	2,10,000	
Transfer to General Reserve	30,000	
Provision for Taxation	27,000	
Proposed Dividend	1,20,000	
Profit on sale of Fixed Assets	(6,000)	
Profit on sale of Investment	(1,500)	3,79,500
Operating Profit before Working Capital Changes		4,15,500
Adjustment for:		
Stock	90,000	
Debtors	(7,35,000)	
Creditors	(1,02,000)	(7,47,000)
Cash used in Operation		(3,31,500)

Tax Paid (W. Note No. 1)		(2,22,000)
Net Cash used in Operating Activities		(5,53,500)
(B) Cash Flow from Investing Activities		
Sale of Fixed Assets	36,000	
Sale of Investments	25,000	
Purchase of Investments	(54,000)	
Net Cash from Investing Activities		7,500
(C) Cash Flow from Financing Activities		
Issue of Share Capital	Nil	
Mortgage Loan	8,10,000	
Payment of Dividend	(1,20,000)	
Net Cash from Financing Activities		6,90,000
Net Increase in Cash and Bank		1,44,000
Cash and Bank as on 1.4.2014		4,47,000
Cash and Bank as on 31.3.2015		5,91,000

Working Notes:

Dr. 1. Provision for Taxation Account Cr.

	Rs.		Rs.
To Bank A/c (Tax Paid) (Bal. Fig.)	2,22,000	By Balance B/d	2,25,000
To Balance c/d	30,000	By Statement of P/L (Provision made during the year)	27,000
	2,52,000		2,52,000

Dr. 2. Fixed Assets Account Cr.

	Rs.		Rs.
To Balance b/d	22,00,000	By Depreciation (Bal. Fig.)	2,10,000
To Statement of Profit and Loss (Profit on Sale) (36,000 – 30,000)	6,000	By Cash (Sale Proceed)	36,000
		By Balance c/d	19,60,000
	22,06,000		22,06,000

Example 14.

The Balance Sheets of Mr.Amit as on 1-4-2014 and 31-3-2015 were as follows:

Liabilities	1-4-2014	31-3-2016	Assets	1-4-2014	31-3-2015
	Rs.	Rs.		Rs.	Rs.
Creditors	40,000	47,000	Cash	10,000	5,000
Loan from Sumit	25,000	–	Debtors	30,000	52,000
Loan from Central Bank	40,000		Stock	35,000	25,000
Capital	1,25,000	50,000	Machinery	80,000	55,000
		1,50,000	Land	40,000	50,000
			Building	35,000	60,000
	2,30,000	2,47,000		2,30,000	2,47,000

Additional Information:

(1) During the year Machine costing Rs. 10,000 (accumulated depreciation Rs. 3,000) was old for Rs. 5,000.

(2) The Provision for depreciation against Machinery as on 1-4-2014 and 31-03-2015 were Rs. 25,000 and Rs.40,000 respectively.

(3) Net profit for the year amounted to Rs. 45,000

Prepare Cash Flow Statement according to Revised Accounting Standard-3.

Working Notes:

Dr. **1. Capital Account** **Cr.**

	Rs.		Rs.
To Cash (Drawings) (Bal. Fig.)	20,000	By Balance b/d	1,25,000
To Balance c/d	1,50,000	By Net Profit	45,000
	1,70,000		1,70,000

Dr. **2. Provision for Depreciation Account** **Cr.**

	Rs.		Rs.
To Machinery A/c		By Balance b/d	25,000
(Dep. On Machinery Sold)	3,000	By Ad. Statement of P/L	
To Balance c/d	40,000	(Dep. For the year)	18,000

	43,000		43,000

Dr. **3. Machinery Account** **Cr.**

	Rs.		Rs.
To Opening Balance at Cost (80,000 + 25,000)	1,05,000	By Cash A/c (Sales)	5,000
		By Provision for Depreciation	3,000
		By Adj. Statement of P/L (Loss on Sale)	2,000
		By Closing Balance at Cost (55,000 + 40,000)	95,000
	1,05,000		1,05,000

Cash Flow Statement

(for the year ended 31-3-2015)

	Rs.	Rs.
Cash Flow from Operating Activities		
Net Profit for the year	45,000	
Adjustment for Depreciation	18,000	
Loss on Sale of Machinery	2,000	
Operating Profit before Working Capital Changes	65,000	
Decrease in Stock	10,000	
Increase in Debtors	(22,000)	
Increase in Creditors	7,000	
Net Cash generated from Operation		
Cash Flow From Investing Activities:		60,000
Purchase of Land (50,000 – 40,000)	(10,000)	
Purchase of Building (60,000 – 35,000)	(25,000)	
Sale of Machinery	5,000	
Cash used in Investing Activities		
		30,000
Cash flow from Financing Activities:		
Loan from Central Bank	10,000	
Payment of Mr.Sumit’s Loan	(25,000)	

Drawing	(20,000)	
Cash used in Financing Activities		(35,000)
Net Decreases in Cash Balance		(5,000)
Cash at the beginning of the period		10,000
Cash Balance at the end of the period		5,000

7.5 CHECK YOUR PROGRESS

A. State whether the following statements are True or False:

1. Cash flow statement summarizes the causes of changes in cash position between dates of two balance sheets.
2. Cash flows from operating activities are the cash flows from the principal revenue producing activities of the enterprise.
3. A cash flow statement based on indirect method is a Profit and Loss Account on cash basis.
4. Cash flow statement ignores the cash transactions.

B. Fill in the blanks:

1. Cash flow statement provides information of all activities classified under______, investing and financing activities
2. AS-3 (Revised) suggests _____methods of reporting Cash Flows from Operating Activities.
3. Cash flow statement ______ replace funds flow statement.
4. Cash flow statement based ignores the basic _______ concept of accrual basis.

7.6 SUMMARY

Cash flow statement indicates sources of cash inflows and transactions of cash outflows prepared for a period. It is an important tool of financial analysis and is mandatory for all the listed companies. The cash flow statement indicates inflow and outflow in terms of three components: (1) Operating, (2) Financing, and (3) Investment activities. Cash inflows include sale of assets or investments, and raising of financial resources. Cash outflows include purchase lo assets or investments and redemption of financial resources. There are two methods of converting net profit into net cash flows from operating activities Direct method, and Indirect method.

7.7 KEYWORDS

Cash: It includes cash in hand and demand deposits with bank.

Cash Equivalents: refer short-term risk free highly liquid investment.

Cash Flow Statement: The statement which indicates the fl w (movement) of cash during a period.

Flow of Cash: It means the change in cash. It also includes the inflow and outflow of cash.

7.8 SELF ASSESSMENT TEST

1. What is Cash-flow Statement? How is it prepared?
2. Explain the techniques of preparing Cash-flow Statement. What is the utility of such statement to Financial Management?
3. What is Cash-flow Statement? How does it differ from fund-flow statement? Discuss their importance.
4. Distinguish between operating investing and financial activities.
5. Shiva Ltd. earned a profit of Rs. 4,00,000 after charging the following items:

	Rs.
(1) Dep. On Fixed Assets	7,000
(2) Amortization of Dev. Exp.	6,000
(3) Loss on Sale of Furniture	500
(4) Provision for D/D	1,100
(5) Provision for Taxation	60,000
(6) Transfer to G.R.	7,000
(7) Profit on Sale of Machinery	3,000

The following additional information have been supplied to you:

	31st March	
	2014	2015
Bills Receivable	10,000	8,500
Bills Payable	8,000	6,000
O/s. Exp.	5,000	4,000
Debtors	12,000	15,000

Creditors	10,000	15,000
Prepaid Exp.	200	300

You are required to calculate cash flow from operational activities.

6. Calculate cash flow from investing activities from the following information:

	Rs.
Purchase of Machinery	5,00,000
Sale of Machinery	70,000
Goodwill Purchased	2,00,000
Investment sold	1,00,000
Investment purchased	3,00,000
Patents sold	80,000
Interest received on Debentures	8,000
Dividend received	12,000

A piece of building was purchased as investment out of surplus. It was let our for commercial use and rent received Rs. 40,000.

7. From the following information of Jharkhand Ltd., prepare Cash Flow Statement:

Jharkhand Company Ltd.

(Balance Sheets at 31st March, 2014 and 2015) (Rs.in …)

Particulars	Notes No.	2015	2014
1. EQUITY & LIABILITIES:			
1. Shareholder's Funds:			
(a) Share Capital		1,50,000	1,00,000
(b) Reserve & Surplus			
Share Premium Reserve		50,000	–
Statement of Profit and Loss		1,00,000	50,000
2. Non-current Liabilities			
Long-Term Loan		–	1,00,000
Provision for Tax		25,000	15,000
Loan from X		75,000	10,000
3. Current Liabilities:			
Trade Payables			
Bills Payable		35,000	25,000
Total (1 + 2+ 3)		4,35,000	3,00,000
II. ASSETS:			
1. Non-current Assets:			
Fixed Assets:		3,50,000	2,00,000
2. Current Assets:			
Inventory (Stock)		85,000	50,000
Trade Receivable (Bills Receivables)		50,000	25,000
Cash and Cash Equivalents:			
Cash		–	2,500

Bank		–	22,500
Bank Overdraft		(50,000)	–
Total (1+2)		4,35,000	3,00,000

Additional Information:

Net Profit for the year after charging Rs. 25,000 as depreciation was Rs.75,000. Dividend paid on shares was Rs.25,000. Tax provision created during the year amounted to Rs.30,000.

8. Following are the Balance Sheets of Z Ltd.

Balance Sheet at 31st March, 2014 and 2015

Particulars	Notes No.	2015	2014
1. EQUITY & LIABILITIES:			
1. Shareholder's Funds:			
(a) Share Capital		60,000	60,000
(b) Reserve & Surplus			
General Reserve		1,200	2,650
2. Current Liabilities:			
Trade Payables (Creditors)		400	850
Total (1 + 2)		61,600	63,500
II. ASSETS:			
1. Non-current Assets:			
Fixed Assets:			
Tangible Assets			
Building Less depreciation		48,000	50,000
Plant less depreciation		8,500	9,000
2. Current Assets:			
Inventory (Stock)		100	500
Trade Receivable (Debtors)		1,000	1,500
Cash		4,000	2,500
Total (1+2)		61,600	63,500

Additional Information:

1. Sales in 2014-15 were Rs. 2,18,500.
2. No dividend was paid by the company during the year.
3. The changes in Building and Plant value are on account of depreciation changes for 2014-15.
4. There were operating losses of Rs. 1,450 for the year 2014-15.

Prepare cash Flow Statement according to Revised Accounting Standard-3.

7.9 ANSWERS TO CHECK YOUR PROGRESS

A. 1. True

2. True
3. False
4. False

B. 1. operating
2. two
3. cannot
4. accounting

7.10 REFERENCES/SUGGESTED READINGS

1. N.S. Zad: Cost & Management Accounting, Taxmann Publications Pvt. Ltd., New Delhi.
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4. M.Y. Khan & P.K. Jain: Theory and Problems of Management and Cost Accounting; McGraw-Hill Education (India) Ltd., Noida.
5. Jawahar Lal: Cost Accounting; McGraw-Hill Education (India) Ltd., Noida.

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